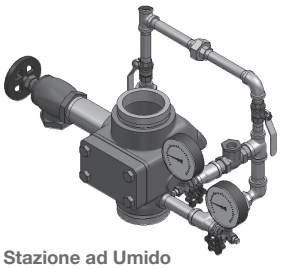
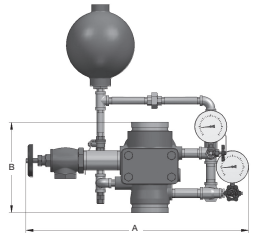
Stazione di Allarme ad Umido modelli E-D-B

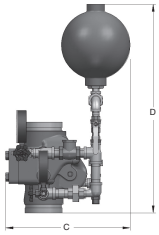
doc. nr. A02001A 19_07_2017



Stazione ad Umido



Vista frontale



Vista laterale

APPROVED
For Listing/Approval Details and Limitations contact MEFA Sales Representative.

Caratteristiche:

Stazione disponibile con trim sfuso oppure montato e collaudato in officina
Trim a pressione costante; per trim a pressione variabile ordinare la Camera di Ritardo Modello E fornita separatamente

- **Materiale**
  Corpo valvola in ghisa sferoidale
  Otturatore in ghisa grigia
  Guarnizione otturatore gomma EPDM
  Sede otturatore in ottone scanalato
  Molle in acciaio inossidabile
- **Finitura**
  Corpo valvola smaltato nero esternamente con scanalatura zincata Corpo valvola compatto, leggero e resistente
- Flangiatura valvole: PN16
- Pressione di esercizio: 12bar 175psi

Valvola modello E scanalata/scanalata

Diametro nominale		Dimensioni				Perdita di carico in mt/tubo	Peso unitario		Codice Valvola	Codice Trim
		A	B	C	D		s/trim	con trim		
Poll.	DN	[mm]	[mm]	[mm]	[mm]		[kg/pz]	[kg/pz]		
4	100	700	286	390	700	3,8	19	23	AVE40	AVTRIM40VAP
6	150	700	286	390	700	10	23	30	AVE60	AVTRIM60VAP

Valvola modello D flangiata/scanalata

Diametro nominale		Dimensioni				Perdita di carico in mt/tubo	Peso unitario		Codice Valvola	Codice Trim
		A	B	C	D		s/trim	con trim		
Poll.	DN	[mm]	[mm]	[mm]	[mm]		[kg/pz]	[kg/pz]		
4	100	700	264	350	700	3,8	23	30	AVD40	AVTRIM40VAP
6	150	700	287	350	700	10,0	29	36	AVD60	AVTRIM60VAP
8	200	700	335	520	700	10,5	57	64	AVD80	AVTRIM80VAP

Valvola modello B flangiata/flangiata

Diametro nominale		Dimensioni				Perdita di carico in mt/tubo	Peso unitario		Codice Valvola	Codice Trim
		A	B	C	D		s/trim	con trim		
Poll.	DN	[mm]	[mm]	[mm]	[mm]		[kg/pz]	[kg/pz]		
3	80	700	273	390	700	1,0	23	30	AVB30	AVTRIM30VAP
4	100	700	226	390	700	3,8	25	32	AVB40	AVTRIM40VAP
6	150	700	264	390	700	10,0	34	42	AVB60	AVTRIM60VAP
8	200	700	298	520	700	10,5	59	66	AVB80	AVTRIM80VAP

Camera di ritardo

Camera di ritardo modello E

Descrizione	Peso unitario [kg/pz]	Codice
Per sistemi a Pressione Variabile (Pompe automatiche)	9,0	RETARD

Stazione di Allarme ad Umido modelli E-D-B

doc. nr. A02001A 19_07_2017

Descrizione

Le Valvole di Allarme ad Umido modello E, D e B comprendono un otturatore di ghisa a battente con la guarnizione di tenuta in gomma che appoggia su una sede di ottone scanalata. La sede ha la superficie di contatto stagnata per evitare l'incollaggio della guarnizione sul piano di appoggio. Un tubazione di by-pass esterna permette di trasferire un aumento della pressione dell'acqua a monte verso l'impianto a valle e di costituire una surpressione che facilita poi il mantenimento della chiusura dell'otturatore.
Un più forte aumento di pressione solleverà l'otturatore immettendo l'acqua nella camera di ritardo.

La Camera di Ritardo modello E collega la scanalatura nella sede dell'otturatore con la tubazione dell'allarme e gli apparecchi serviti come l'interruttore elettrico di allarme e la campana a motore idraulico. Degli speciali orifizi tarati posti nella tubazione dell'allarme permettono il rapido svuotamento della camera di ritardo evitando dei falsi allarmi.

Funzionamento

Quando un erogatore sprinkler oppure la valvola di prova dell'allarme vengono aperti la pressione sull'impianto a valle della valvola diminuisce rispetto alla pressione a monte della valvola (lato alimentazione). L'otturatore si solleva dalla propria sede spinto dalla maggiore pressione a monte e permette all'acqua di entrare nell'impianto per la sua erogazione sull'incendio. Parte dell'acqua entra nella scanalatura della sede, percorre la tubazione dell'allarme fino alla camera di ritardo (se installata) ed arriva agli apparecchi di allarme. Dei colpi di ariete momentanei nella rete di alimentazione provocano il distacco intermittente dell'otturatore dalla sede e dei falsi allarmi. Le valvole di allarme modello E, D e B prevengono questi falsi allarmi in due modi:

a. Il by-pass esterno provvisto di una valvola di non ritorno permette a questi colpi di ariete di accumulare pressione nell'impianto a valle: questo provoca un eccesso di pressione sul lato a valle che mantiene chiuso l'otturatore. Nel caso in cui l'otturatore venisse comunque alzato entra in azione la camera di ritardo.
b. La camera di ritardo comprende due orifizi tarati per l'ingresso e lo scarico dell'acqua che permettono all'apparecchio di svuotarsi prima di essere interamente riempito e di azionare gli allarmi. La camera di ritardo comprende al suo ingresso un filtro che evita l'otturazione dell'orifizio tarato.

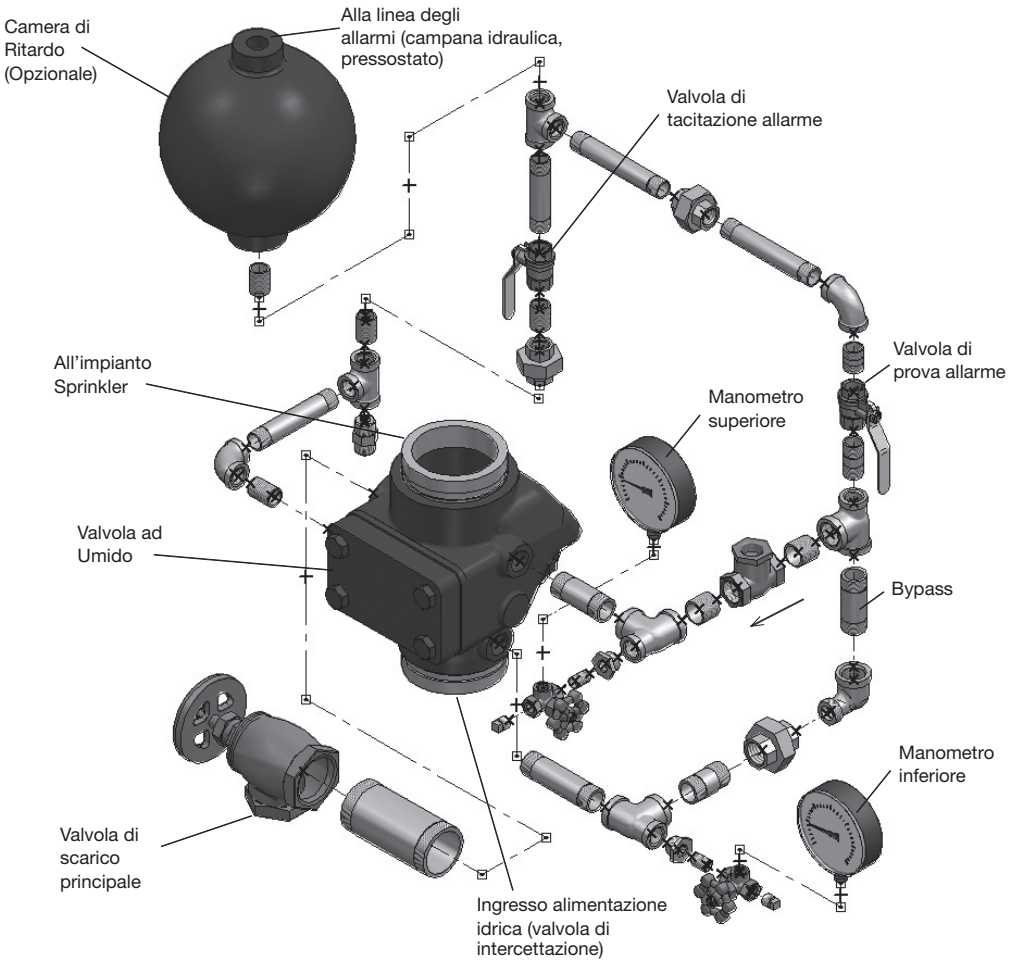
Si deve essere certi che le valvole di ritegno sul trim siano dirette nella loro giusta direzione come indicato dalla freccia ricavata sulla fusione. La freccia nella valvola di ritegno di ¾" nel by-pass deve essere diretta verso la valvola di allarme mentre quella sulla valvola di ½" nello scarico della camera di ritardo deve essere diretta verso l'imbuto di scarico.

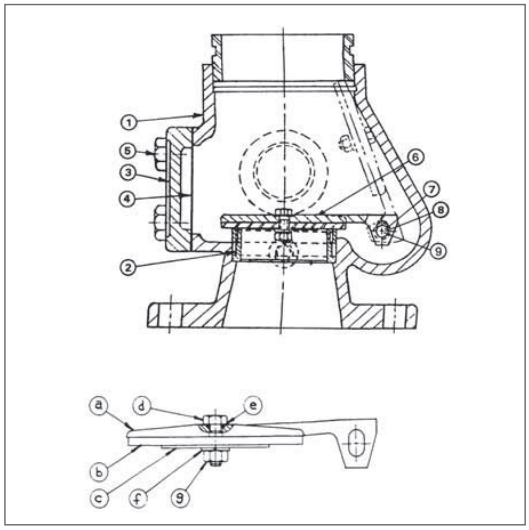
Manutenzione

Le valvole di allarme modello E, D e B non necessitano di alcuna regolazione ed in condizioni normali di utilizzo richiedono il minimo di manutenzione. I due manometri nel trim della valvola dovrebbero indicare due valori di pressione diversi: pressione più alta nell'impianto (manometro superiore) e più bassa nella tubazione di alimentazione (manometro inferiore). Nel caso invece che i valori segnati dai due manometri siano uguali e presumendo che nei giorni precedenti non si siano aperte valvole di drenaggio o di prova allora è possibile che ci sia un trafilamento in qualche parte della stazione di allarme e che impedisce di trattenere l'eccesso di pressione a valle della valvola di allarme. In questo caso occorre verificare che tutte le valvole normalmente chiuse siano chiuse a fondo, che non vi siano perdite d'acqua per la frattura di qualche raccordo nella rete di tubazioni. Se non vi sono ragioni visibili per la perdita di pressione è possibile che la guarnizione dell'otturatore sia danneggiata e da sostituire. Una guarnizione danneggiata è anche uno dei motivi principali che provocano i falsi allarmi e la sua sostituzione in genere elimina questo difetto.
Questa sostituzione può rendersi necessaria di tanto in tanto ed una nuova guarnizione può essere richiesta al distributore. Quando questo deve essere fatto si deve procedere in questo modo:

1. Notificare la compagnia di assicurazione che l'impianto dovrà essere messo temporaneamente fuori servizio.
2. Chiudere la valvola principale di intercettazione dell'impianto (saracinesca o valvola a farfalla o valvola interrata esterna) mettendo di guardia una persona con l'incarico di riaprire la valvola appena terminato il lavoro.
3. Aprire la valvola principale di scarico da 2" (da 1.1/2" sull'impianto di 3") e svuotare completamente l'impianto.
4. Aprire anche la valvola terminale di prova installata sull'impianto sprinkler e le eventuali valvole di scarico di zona per ventilare le tubazioni.
5. Dopo che la pressione è stata eliminata in tutte le tubazioni si può smontare la flangia di ispezione della valvola di allarme per verificare lo stato della guarnizione e della sede dell'otturatore rimuovendo scorie ed altro materiale solido eventualmente presente nella scanalatura.
6. Pulire il piano di appoggio dell'otturatore con un panno pulito.
7. Sostituire la guarnizione dell'otturatore.
8. Il complesso dell'otturatore può essere estratto dalla valvola svitando i due tappi che permetteranno l'estrazione del perno di rotazione.
9. Ricollocare il complesso dell'otturatore e verificare che anche la guarnizione del coperchio di ispezione sia in buono stato ed eventualmente sostituirla.
10. Richiudere tutte le valvole di drenaggio che erano state aperte ma non ancora la valvola terminale di prova dell'allarme.
11. Per evitare l'intervento degli allarmi mentre si ricarica l'impianto chiudere le due valvole da ½" di prova e di intercettazione dell'allarme presenti nel trim.
12. Aprire lentamente la valvola principale di intercettazione dell'impianto riportando in pressione la rete di tubazioni. Un carico lento impedisce alla eventuale sporcizia delle tubazioni interrate di entrare nella valvola di allarme. Durante questa operazione l'otturatore della valvola rimarrà aperto e si chiuderà da solo quando l'impianto si sarà portato alla sua pressione normale.
13. Chiudere la valvola terminale di prova quando il getto d'acqua non trasporta più delle sacche d'aria indicando che la maggior parte dell'aria presente nei tubi è stata estratta.
14. Quando l'impianto ha raggiunto la pressione operativa ed il presso-stato a valle segna una pressione maggiore di quello a monte la valvola principale può essere aperta completamente e sigillata.
15. Aprire solo la valvola da ½" di tacitazione dell'allarme e sigillarla aperta. Se questa valvola rimane chiusa non sarà possibile segnalare l'allarme di incendio.
16. Per provare l'allarme aprire l'altra valvola di prova da ½" nel by-pass del trim. Questa valvola riceve l'acqua in pressione da sotto l'otturatore e non disturba l'eccesso di pressione accumulato nell'impianto.

Stazione ad Umido modelli E-D-B
Schema Indicativo



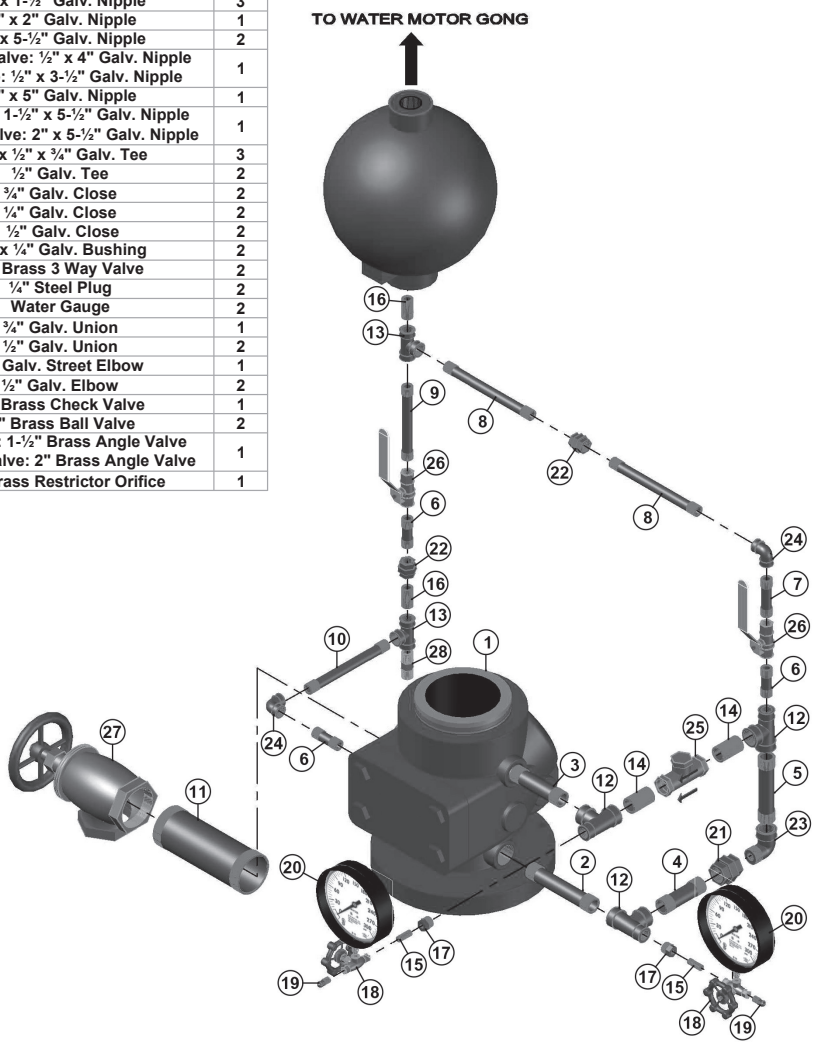


Posizione	3 0 4"	6"	8"	Descrizione
1	4E.1	6E.1	8E.1	Corpo
2	Per info	Per info	Per info	Sede
3	4E.3	6E.3	8E.3	Coperchio
4	4E.4	6E.4	8E.4	Guarnizione coperchio
5	4E.5	6E.5	8E.5	Bullone
6	4E.7	6E.7	8E.7	Clapet completo
7	4E.15	6E.15	8E.15	Ceramica
8	4E.16	6E.16	8E.16	Barra
9	4E.17	6E.17	8E.17	Tappo

A02

Stazione di Allarme ad Umido 3" - 4" - 6" con Camera di Ritardo
Modelli E-D-B
Istruzioni di montaggio

NO.ITEM	DESCRIPTION	QTY
1	Alarm Valve 3", 4" Or 6"	1
2	3" & 4" Valve: ¾" x 4" Galv. Nipple 6" Valve: ¾" x 2-½" Galv. Nipple	1
3	3" & 4" Valve: ¾" x 3" Galv. Nipple 6" Valve: ¾" x 2" Galv. Nipple	1
4	¾" x 2-½" Galv. Nipple	1
5	3" & 4" Valve: ¾" x 3-½" Galv. Nipple 6" Valve: ¾" x 3" Galv. Nipple	1
6	½" x 1-½" Galv. Nipple	3
7	½" x 2" Galv. Nipple	1
8	½" x 5-½" Galv. Nipple	2
9	3" & 4" Valve: ½" x 4" Galv. Nipple 6" Valve: ½" x 3-½" Galv. Nipple	1
10	½" x 5" Galv. Nipple	1
11	3" Valve: 1-½" x 5-½" Galv. Nipple 4" & 6" Valve: 2" x 5-½" Galv. Nipple	1
12	¾" x ½" x ¾" Galv. Tee	3
13	½" Galv. Tee	2
14	¾" Galv. Close	2
15	¼" Galv. Close	2
16	½" Galv. Close	2
17	½" x ¼" Galv. Bushing	2
18	¼" Brass 3 Way Valve	2
19	¼" Steel Plug	2
20	Water Gauge	2
21	¾" Galv. Union	1
22	½" Galv. Union	2
23	¾" Galv. Street Elbow	1
24	½" Galv. Elbow	2
25	¾" Brass Check Valve	1
26	½" Brass Ball Valve	2
27	3" Valve: 1-½" Brass Angle Valve 4" & 6" Valve: 2" Brass Angle Valve	1
28	½" Brass Restrictor Orifice	1

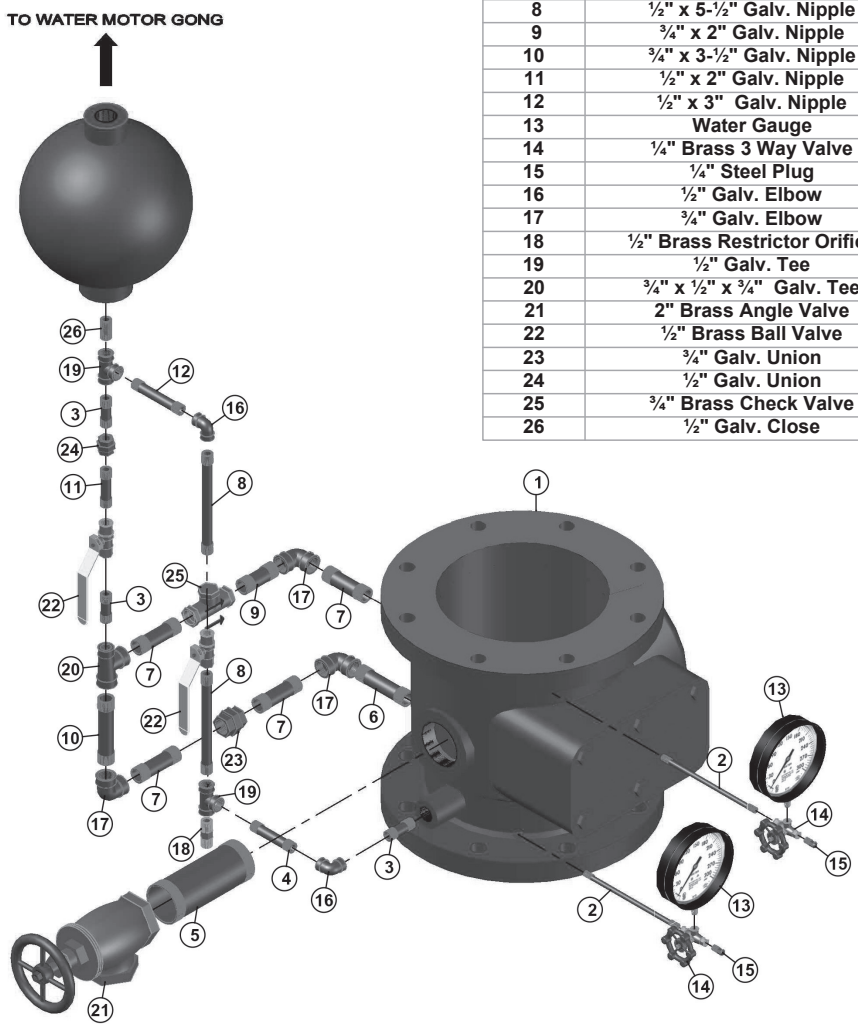


Rev. 1

Stazione di Allarme ad Umido 8" con Camera di Ritardo Modelli D-B

Istruzioni di montaggio

NO. ITEM	DESCRIPTION	QTY
1	Alarm Valve 8"	1
2	¼" x 6" Galv. Nipple	2
3	½" x 1-½" Galv. Nipple	3
4	½" x 2-½" Galv. Nipple	1
5	2" x 5" Galv. Nipple	1
6	¾" x 3" Galv. Nipple	1
7	¾" x 2-½" Galv. Nipple	4
8	½" x 5-½" Galv. Nipple	2
9	¾" x 2" Galv. Nipple	1
10	¾" x 3-½" Galv. Nipple	1
11	½" x 2" Galv. Nipple	1
12	½" x 3" Galv. Nipple	1
13	Water Gauge	2
14	¼" Brass 3 Way Valve	2
15	¼" Steel Plug	2
16	½" Galv. Elbow	2
17	¾" Galv. Elbow	3
18	½" Brass Restrictor Orifice	1
19	½" Galv. Tee	2
20	¾" x ½" x ¾" Galv. Tee	1
21	2" Brass Angle Valve	1
22	½" Brass Ball Valve	2
23	¾" Galv. Union	1
24	½" Galv. Union	1
25	¾" Brass Check Valve	1
26	½" Galv. Close	1



Rev. 1

Stazione di Allarme ad Umido modelli E-D-B

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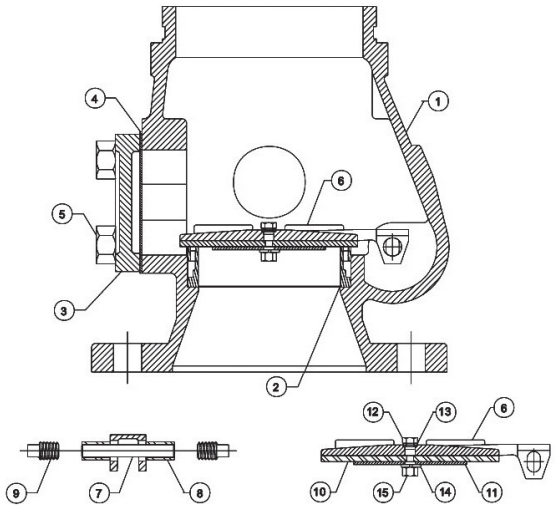
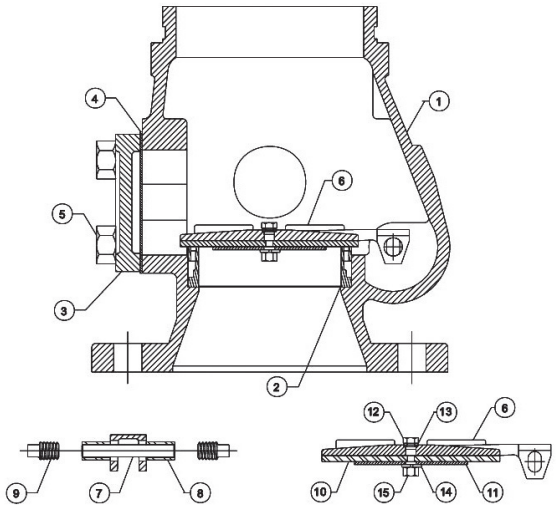
Parti di ricambio Valvola di Allarme ad Umido



Valvola a Umido 3” - 4” - 6” **Rev. 1**



Valvola a Umido 8” **Rev. 1**

Ref.	Descrizione
1	Corpo Valvola
2	Sede Acqua
3	Coperchio Valvola
4	Guarnizione Coperchio
5	Bullone del Coperchio
6	Clapet
7	Barra del Clapet
8	Boccola Isolante
9	Tappo
10	Guarnizione del Clapet
11	Disco Tenuta Guarnizione
12	Bullone
13	O-Ring
14	Rondella
15	Dado

Ref.	Descrizione
1	Corpo Valvola
2	Bullone del Coperchio
3	Coperchio Valvola
4	Clapet
5	Anello della Sede
6	Flangia di Tenuta
7	Vite con Rondella
8	Guarnizione del Clapet
9	Assemblaggio del Clapet
10	Boccola Isolante
11	Tappo
12	Boccola del Clapet
13	Barra del Clapet
14	Guarnizione del Clapet (non illustrato)

NOTA GENERALE:
L’attrezzatura presentata in questo bollettino deve essere installata in conformità agli ultimi standard pubblicati dalle Norme UNI EN 12845, National Fire Protection Association, Factory Mutual Research Corporation o altre organizzazioni simili e anche con le disposizioni dei codici governativi o delle ordinanze laddove applicabili.
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Dati Tecnici
Technical Data Sheet

Stazione di Allarme a Secco modelli E-B-A

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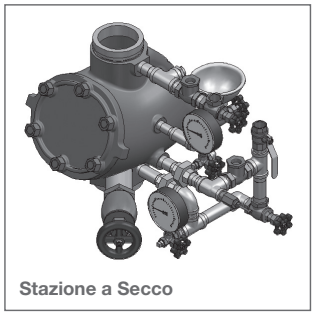
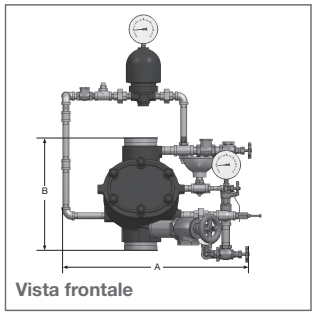
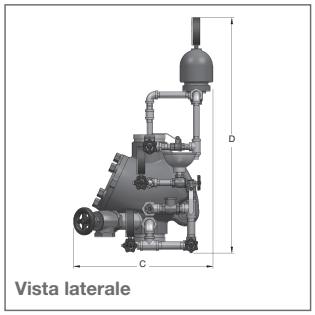

Stazione a Secco



Vista frontale



Vista laterale

APPROVED
For Listing/Approval Details and Limitations contact MEFA Sales Representative.

A02

Caratteristiche:

Stazione disponibile con trim sfuso oppure montato e collaudato in officina
Trim con acceleratore o senza acceleratore

Materiale
Corpo valvola in ghisa sferoidale
Otturatore in bronzo
Guarnizione otturatore gomma EPDM
Sede otturatore in ottone scanalato
Molle in acciaio inossidabile

Finitura
Corpo valvola smaltato nero esternamente con scanalatura zincata
Corpo valvola compatto e resistente
Flangiatura valvole: PN16
Pressione di esercizio: 12bar 175psi

Nota: La Stazione a Secco E-B-A è utilizzabile come Stazione a Preazione tipo B secondo la norma EN12845

Valvola modello E scanalata/scanalata

Diametro nominale		Dimensioni				Perdita di carico in mt/tubo	Peso unitario		Codice Valvola	Codice Trim
		A	B	C	D		s/trim	con trim		
Poll.	DN	[mm]	[mm]	[mm]	[mm]		[kg/pz]	[kg/pz]		
4	100	680	387	680	840	3,8	52	62	DPVE40	DPVTRIM40

Valvola modello B flangiata/scanalata

Diametro nominale		Dimensioni				Perdita di carico in mt/tubo	Peso unitario		Codice Valvola	Codice Trim
		A	B	C	D		s/trim	con trim		
Poll.	DN	[mm]	[mm]	[mm]	[mm]		[kg/pz]	[kg/pz]		
4	100	680	378	680	840	3,8	57	67	DPVB40	DPVTRIM40
6	150	900	495	590	840	10,0	136	146	DPVB60	DPVTRIM60

Valvola modello A flangiata/flangiata

Diametro nominale		Dimensioni				Perdita di carico in mt/tubo	Peso unitario		Codice Valvola	Codice Trim
		A	B	C	D		s/trim	con trim		
Poll.	DN	[mm]	[mm]	[mm]	[mm]		[kg/pz]	[kg/pz]		
3	80	680	375	680	840	1,0	57	67	DPVA30	DPVTRIM30
4	100	680	454	680	840	3,8	60	70	DPVA40	DPVTRIM40
6	150	900	497	590	840	10,0	145	155	DPVA60	DPVTRIM60

Descrizione e funzionamento

Le Valvole di Allarme a Secco modello E, B e A sono essenzialmente delle valvole di ritegno differenziali: esse comprendono un otturatore di ghisa a battente con due guarnizioni di tenuta in gomma che appoggiano su una doppia sede di ottone. Le sedi hanno la superficie di contatto stagnata per evitare l'incollaggio delle guarnizioni sui piani di appoggio. Le due sedi hanno dimensioni tali che un bar di pressione dell'aria nell'impianto bilancia 6 bar di pressione dell'acqua. Quando la contropressione d'aria è sfiatata a seguito della apertura di un erogatore sprinkler la pressione dell'acqua che spinge sotto l'otturatore ne provoca la apertura, la camera intermedia tra le due sedi si riempie a sua volta di acqua che defluisce nella tubazione dell'allarme e verso gli apparecchi serviti come l'interruttore elettrico di allarme e la campana a motore idraulico

Riarmo della valvola a secco

1. Chiudere la valvola principale di intercettazione dell'impianto (saracinesca o valvola a farfalla o valvola interrata esterna)
2. Aprire la valvola principale di scarico (1) (da 2" oppure da 1.1/2" sull'impianto di 3") e svuotare completamente l'impianto.
3. La campana a motore idraulico e il pressostato elettrico di allarme possono essere isolati chiudendo la relativa valvola (2) di tacitazione
4. Sfiatare le tubazioni dell'impianto aprendo la valvola terminale di prova da 1" che è derivata dalla parte alta della rete di tubi dell'impianto.
5. Dopo che l'impianto ha scaricato completamente sia l'acqua che l'aria in pressione rimuovere la flangia di ispezione (3) della valvola a secco.
6. Alzare l'otturatore della valvola e rimuovere ogni tipo di detriti solidi che siano finiti nella camera intermedia tra le due sedi, o sul fondo della valvola. Adoperando uno straccio asciutto e pulito asciugare le due guarnizioni di gomma dell'otturatore ed anche le sedi stagnate. NON USARE mai del grasso o dell'olio o qualunque altra sostanza a contatto delle sedi di tenuta.
7. Abbassare l'otturatore appoggiandolo sulle due sedi e verificando che la guarnizione di tenuta dell'aria sia a contatto della relativa sede.
8. Ricollocare al suo posto la flangia di ispezione (3) controllando il buono stato della guarnizione di gomma. Avvitare i dadi stringendoli un po' alla volta alternativamente.
9. Se vi sono delle valvole ausiliarie di drenaggio nei punti più bassi della rete anche queste devono essere aperte e richiuse quando non scaricano più l'acqua. Ricollocare i relativi tappi.
10. Chiudere per ultima la valvola terminale di prova da 1" che era stata aperta per sfiatare i tubi.
11. Sostituire gli erogatori sprinkler aperti dall'incendio e verificare la condizione di quelli vicini.
12. Caricare d'acqua a livello la valvola a secco versandola poco alla volta nella tazza di carico (5) dopo avere aperto la valvola (4) sotto di essa e fino a che la tazza non ne riceve altra. Togliere allora il tappo (6) di livellatura sotto la valvola di carico e scaricare l'acqua in eccesso. Rimettere il tappo (6) e chiudere bene la valvola (4).
13. Aprire la valvola (7) sulla linea dell'aria e caricare l'impianto con aria compressa fino al valore di 0,7 bar. Aprire di nuovo le valvole di drenaggio presenti sull'impianto per scaricare i residuo d'acqua sotto pressione e richiuderle avvitando anche i relativi tappi.
14. Portare allora la pressione dell'aria al valore di esercizio pari a circa 0,16 bar per ogni bar di pressione massima (di picco) dell'acqua: aumentare il valore calcolato di altri 1,4 bar. Richiudere la valvola (7). Verificare che non ci siano perdite d'acqua dalla camera intermedia della valvola a secco nell'imbuto di raccolta (9) osservando la valvola di drenaggio automatica (8).
    Nota: non permettere mai alla pressione dell'aria di scendere sotto il valore minimo di bilanciamento evitando quindi l'apertura accidentale della valvola a secco.
15. Chiudere parzialmente la valvola principale di scarico (1) ed aprire lentamente la valvola di intercettazione principale dell'impianto finchè l'acqua scorre dalla valvola di scarico (1): chiudere allora quest'ultima ed aprire completamente e sigillare la valvola di intercettazione principale.
    Nota: in questo modo si pulisce la valvola di scarico (1) e si evita la apertura della valvola a secco per un carico d'acqua troppo violento.
16. Per accertare la perfetta tenuta dell'otturatore osservare che non sgoccioli acqua nell'imbuto di scarico (9) dalla valvola di drenaggio automatica (8).
17. Provare ad aprire la valvola automatica di drenaggio (8) per confermare che non sia rimasta dell'acqua nella tubazione degli allarmi.
18. A questo punto si può aprire e sigillare anche la valvola (2) di tacitazione degli allarmi.

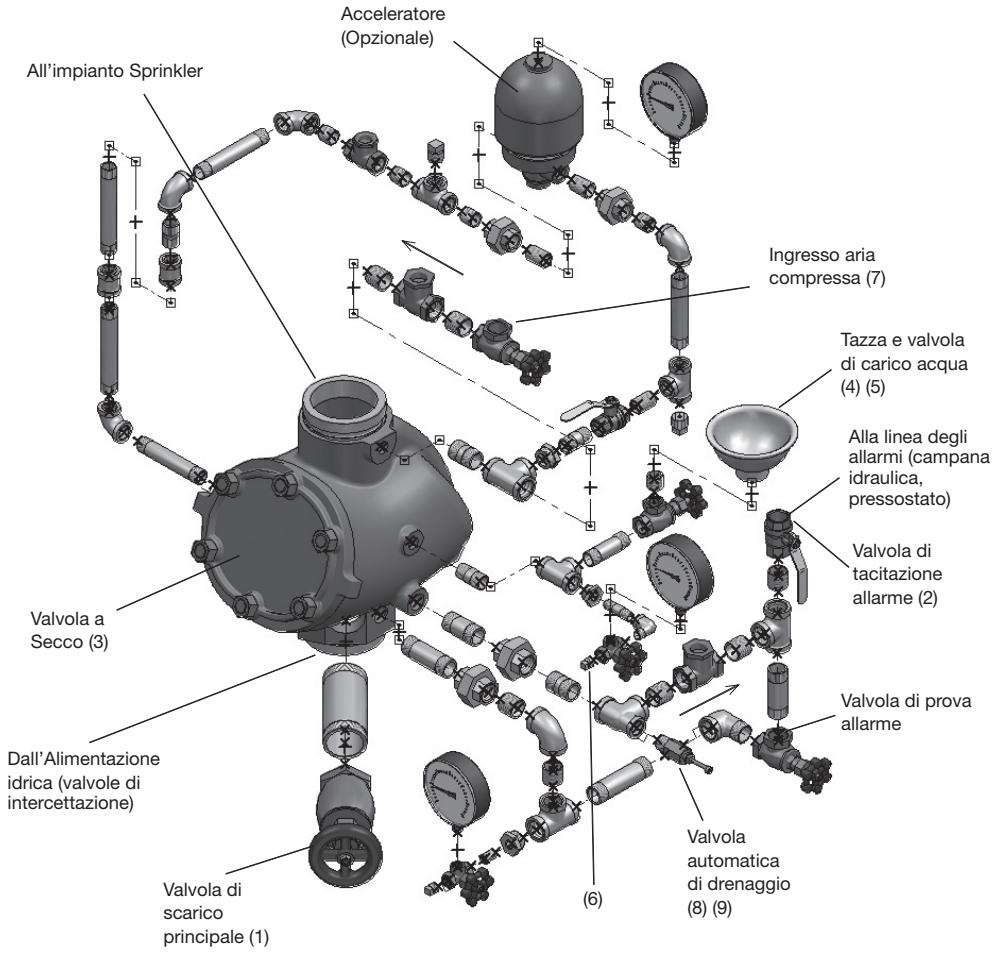
Ispezione e manutenzione

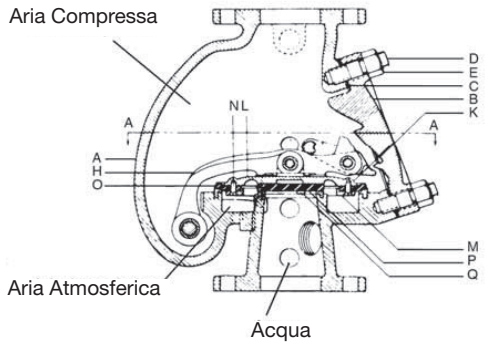
Almeno due persone dovrebbero conoscere l'impianto sprinkler ma almeno una deve essere considerata responsabile delle operazioni di ispezione e manutenzione.
Procedere come segue:

1. Notificare la compagnia di assicurazione che l'impianto dovrà essere messo temporaneamente fuori servizio.
2. Chiudere la valvola principale di intercettazione dell'impianto (saracinesca o valvola a farfalla o valvola interrata esterna) mettendo di guardia una persona con l'incarico di riaprire la valvola appena terminato il lavoro. Aprire la valvola principale di scarico (1) da 2" (da 1.1/2" sull'impianto di 3").
3. Chiudere la valvola di livellatura (6) e rimuovere il suo tappo. Riaprire la valvola per scaricare l'acqua in eccesso. Rimettere il tappo sulla valvola di livellatura. Controllare e registrare la pressione dell'aria nell'impianto e la pressione residua dell'acqua con la valvola principale di scarico aperta.
4. La pressione dell'aria deve essere verificata almeno ogni settimana e, se necessario, riportata al suo valore di esercizio. Nella stagione invernale la pressione dell'aria dovrebbe essere controllata tutti i giorni. In autunno controllare che la valvola di carico dell'aria sia ben chiusa.
5. Il pressostato dell'aria può essere controllato senza causare la apertura della valvola a secco aprendo con prudenza la valvola terminale di prova presente sull'impianto (se il tempo lo permette).
6. Le valvole di drenaggi presenti sull'impianto dovrebbero essere aperte per scaricare l'acqua di condensa prima della stagione fredda e di tanto in tanto durante l'inverno.

Nota: È raccomandata almeno una ispezione all'anno fatta da un tecnico esperto e di tutto l'impianto antincendio. Molto spesso dei difetti possono essere scoperti ed eliminati prima che si verifichino degli incidenti più gravi e tali da dover mettere fuori servizio l'impianto per diversi giorni.

Stazione a Secco modelli E-B-A
Schema Indicativo



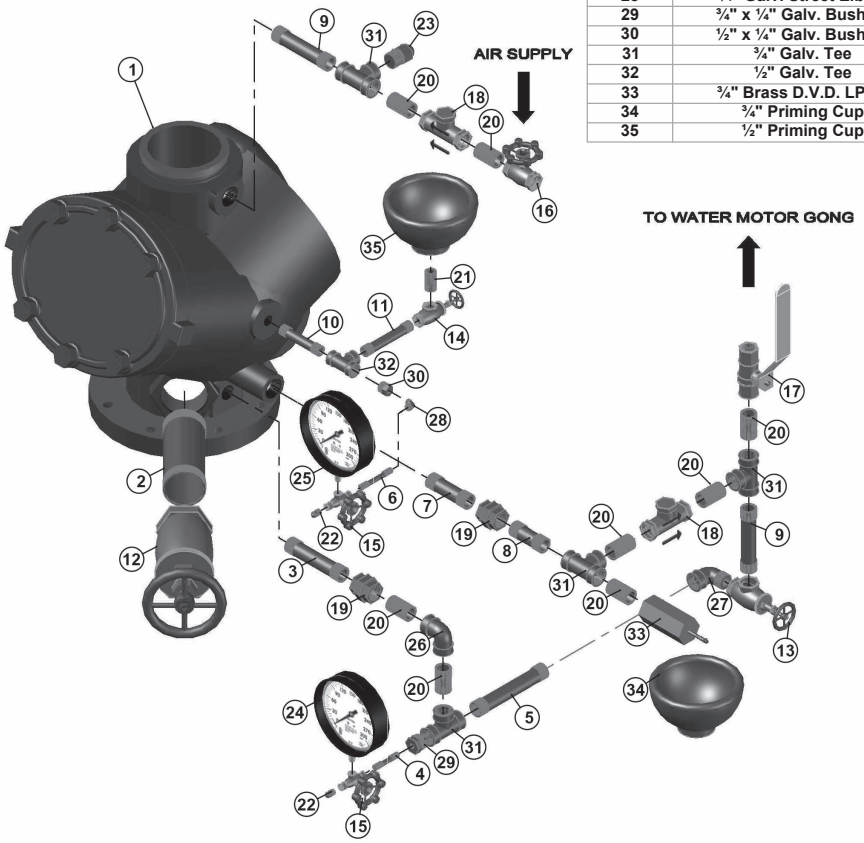


Posizione	3"	4"	6" F.M./CNPP	Descrizione
A	3A.1	4A.1	6A.1	Corpo
B	3A.3	4A.3	6A.3	Coperchio
C	3A.4	4A.4	6A.4	Guarnizione coperchio
D	3A.5	4A.5	6A.5	Bullone
E	3A.6	4A.6	6A.6	Dado
K	3A.7	4A.7	6A.7	Clapet completo
O	3A.16	4A.16	6A.16	Guarnizione Aria
P	3A.17	4A.17	6A.17	Guarnizione Acqua

Stazione di Allarme a Secco 4" - 6" senza Acceleratore
Modelli E-B
Istruzioni di montaggio

NO. ITEM	DESCRIPTION	QTY
1	4" Or 6" Dry Pipe Valve	1
2	2" x 5" Galv. Nipple	1
3	4" Valve: ¾" x 3-½" Galv. Nipple 6" Valve: ¾" x 4" Galv. Nipple	1
4	¼" x 1-½" Galv. Nipple	1
5	¾" x 4-½" Galv. Nipple	1
6	¼" x 2" Galv. Nipple	1
7	¾" x 2-½" Galv. Nipple	1
8	¾" x 2" Galv. Nipple	1
9	¾" x 3-½" Galv. Nipple	2
10	½" x 2-½" Galv. Nipple	1

NO. ITEM	DESCRIPTION	QTY
11	½" x 3" Galv. Nipple	1
12	2" Brass Angle Valve	1
13	¾" Brass Angle Valve	1
14	½" Brass Angle Valve	1
15	¼" Brass 3 Way Valve	2
16	¾" Brass Globe Valve	1
17	¾" Brass Ball Valve	1
18	¾" Brass Check Valve	2
19	¾" Galv. Union	2
20	¾" Galv. Close	8
21	½" Galv. Close	1
22	¼" Steel Plug	2
23	¾" Steel Plug	1
24	Water Gauge	1
25	Air Gauge	1
26	¾" Galv. Elbow	1
27	¾" Galv. Street Elbow	1
28	¼" Galv. Street Elbow	1
29	¾" x ¼" Galv. Bushing	1
30	½" x ¼" Galv. Bushing	1
31	¾" Galv. Tee	4
32	½" Galv. Tee	1
33	¾" Brass D.V.D. LPCB	1
34	¾" Priming Cup	1
35	½" Priming Cup	1



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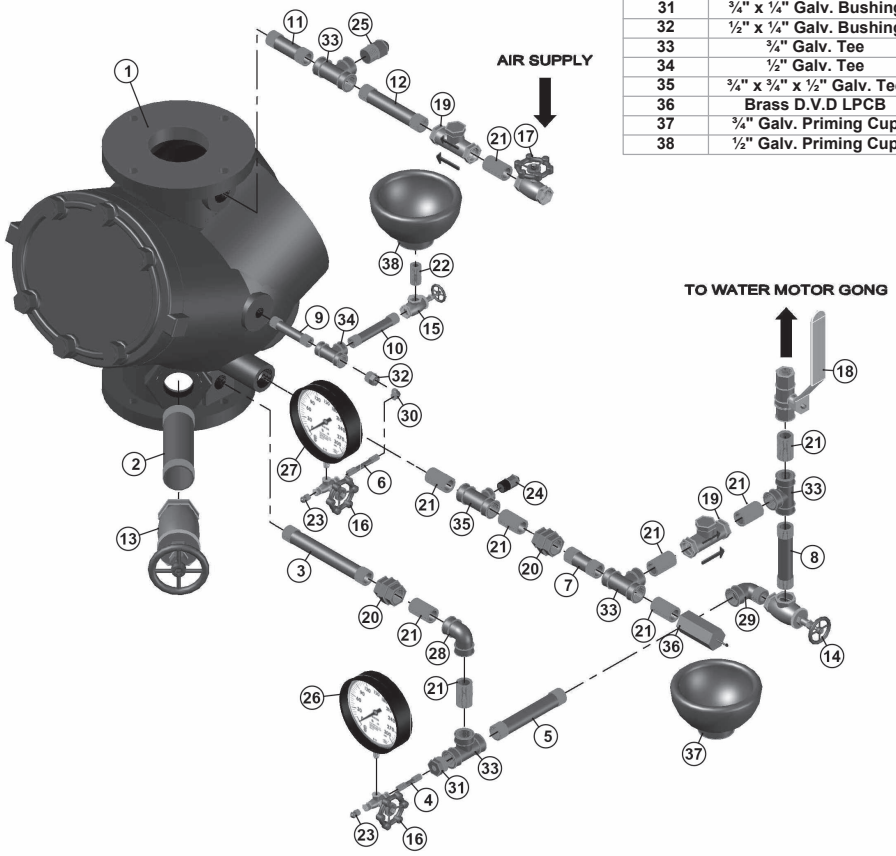
Stazione di Allarme a Secco 3" senza Acceleratore
Modelli A
Istruzioni di montaggio

NO. ITEM	DESCRIPTION	QTY
1	3" Dry Pipe Valve	1
2	1-½" x 5" Galv. Nipple	1
3	¾" x 5-½" Galv. Nipple	1
4	¼" x 1-½" Galv. Nipple	1
5	¾" x 4-½" Galv. Nipple	1
6	¼" x 2" Galv. Nipple	1
7	¾" x 2" Galv. Nipple	1
8	¾" x 3-½" Galv. Nipple	1
9	½" x 2-½" Galv. Nipple	1
10	½" x 3" Galv. Nipple	1
11	¾" x 2-½" Galv. Nipple	1
12	¾" x 4" Galv. Nipple	1
13	1-½" Brass Angle Valve	1

NO. ITEM	DESCRIPTION	QTY
14	¾" Brass Angle Valve	1
15	½" Brass Angle Valve	1
16	¼" Brass 3 Way Valve	2
17	¾" Brass Globe Valve	1
18	¾" Brass Ball Valve	1
19	¾" Brass Check Valve	2
20	¾" Galv. Union	2
21	¾" Galv. Close	9
22	½" Galv. Close	1
23	¼" Steel Plug	2
24	½" Steel Plug	1
25	¾" Steel Plug	1
26	Water Gauge	1
27	Air Gauge	1
28	¾" Galv. Elbow	1
29	¾" Galv. Street Elbow	1
30	¼" Galv. Street Elbow	1
31	¾" x ¼" Galv. Bushing	1
32	½" x ¼" Galv. Bushing	1
33	¾" Galv. Tee	4
34	½" Galv. Tee	1
35	¾" x ¾" x ½" Galv. Tee	1
36	Brass D.V.D LPCB	1
37	¾" Galv. Priming Cup	1
38	½" Galv. Priming Cup	1



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L'attrezzatura presentata in questo bollettino deve essere installata in conformità agli ultimi standard pubblicati dalle Norme UNI EN 12845, National Fire Protection Association, Factory Mutual Research Corporation o altre organizzazioni simili e anche con le disposizioni dei codici governativi o delle ordinanze laddove applicabili.
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Acceleratore modello 1

doc. nr. A02003A 19_07_2017

Acceleratore mod. 1

APPROVED
For Listing/Approval Details and Limitations contact MEFA Sales Representative.

Descrizione Generale

L'acceleratore è un componente accessorio usato sui grandi impianti sprinkler a secco o alternativi ed ha lo scopo di accelerare la apertura della valvola. La norma europea UNI EN 12845 richiede la presenza di un acceleratore negli impianti di classe LH oppure OH se il volume interno dei tubi a valle della valvola supera 1,5 m3 e negli impianti di classe HH qualunque sia il loro volume interno. Gli impianti conformi alla norma americana NFPA 13 richiedono la presenza dell'acceleratore quando il volume interno dei tubi è maggiore di 1,89 m3.
In risposta ad un incendio l'acceleratore trasferisce la pressione dell'aria nell'impianto anche nella camera intermedia della valvola a secco o alternativa e questa pressione sommata a quella dell'acqua provoca l'immediata apertura della valvola sprinkler.
L'acceleratore Modello 1 può essere usato con le valvole a secco Modello A, B o E.
Approvazioni: LPC, FM

Descrizione e Funzionamento

Prima di eseguire la prova assicurarsi che la valvola di intercettazione dell'acceleratore sia aperta e che il manometro (con scala di 250 psi) posto sopra l'acceleratore segni e quello sul tubo di pressurizzazione segnino la stessa pressione dell'aria nei tubi dell'impianto sprinkler.

1. Chiudere la valvola principale di intercettazione dell'impianto.
2. Aprire la valvola principale di scarico DN 50 per togliere la pressione dell'acqua da sotto l'otturatore della valvola a secco.
3. Chiudere la valvola di intercettazione dell'acceleratore.
   Nota: se vi sono delle perdite di misura sufficiente nei giunti tra la valvola di intercettazione e l'acceleratore questo può entrare in funzione da solo dopo avere chiuso la intercettazione.
4. Allentare cautamente il bocchettone DN 15 (1/2") montato tra la valvola di intercettazione dell'acceleratore e quest'ultimo.
5. Il funzionamento dell'acceleratore è segnalato dallo scatto seguito da una veloce diminuzione della pressione dell'aria nel cupolotto.
6. stringere di nuovo il bocchettone DN 15 (1/2") montato tra la valvola di intercettazione dell'acceleratore e quest'ultimo.
7. Aprire adagio la valvola di intercettazione dell'acceleratore ed ascoltare il rumore dell'aria che esce dalla valvola di scarico e che conferma l'avvenuto funzionamento.
8. Dopo avere permesso alla pressione dell'aria nel cupolotto di scendere abbastanza sotto il valore di pressione dell'aria nell'impianto aprire completamente la valvola di intercettazione dell'acceleratore e permettere alle due pressioni di equilibrarsi.
9. Riportare l'impianto alla sua pressione normale.
10. Chiudere la valvola di scarico principale DN 50.
11. Riaprire la valvola di intercettazione principale dell'impianto.

Procedura di Riarmo dell'Acceleratore

Quando l'Acceleratore Modello 1 è montato sulla valvola sprinkler a secco deve essere pulito e riarmato come segue:

1. Svitare il tappo inferiore ed estrarre la molla a spirale, la spina di restrizione e la valvola di scarico.
2. Pulire con cura la superfice di gomma della valvola di scarico, gli anelli della sua sede e la spina di restrizione verificando che non vi siano incrostazioni né deformazioni. Usare uno scovolino da pipa per pulire il foro di passaggio del tubo di restrizione e controllare che tutta l'acqua sia uscita dal cupolotto dell'acceleratore. Per agevolare la fuoriuscita dell'acqua dal cupolotto svitare e togliere il manometro superiore.
3. Rimontare tutti i componenti ed il tappo inferiore. Se la guarnizione del tappo non è in buone condizioni sostituirla.
4. Assicurarsi infine che la valvola di intercettazione dell'acceleratore sia aperta. Dopo circa mezz'ora ricontrollare la pressione segnata dal manometro sul cupolotto che deve essere uguale a quella dell'aria nell'impianto sprinkler a secco.

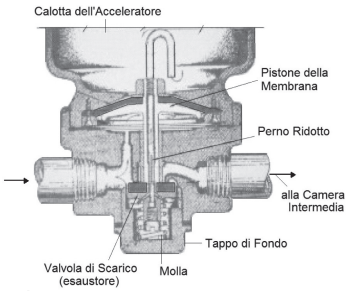


Fig. 1

Funzionamento (vedi figura 1)
Nella condizione normale la molla a spirale (valve spring) mantiene la valvola di scarico compressa contro la sua sede (seat ring) poiché vi è la stessa pressione sopra e sotto il diaframma. La pressione nei tubi passa liberamente sotto il diaframma attraverso un foro mentre penetra più lentamente nel cupolotto (dome) passando attraverso la restrizione (restricted orifice) formata dalla spina (pin) e dal tubo di restrizione (plunger). Fintanto che la valvola di scarico rimane chiusa l'aria non può entrare nella camera intermedia della valvola a secco che resta chiusa.

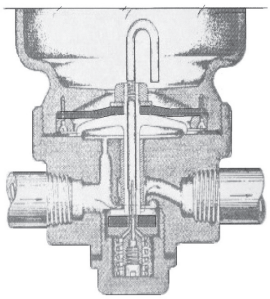


Fig. 2

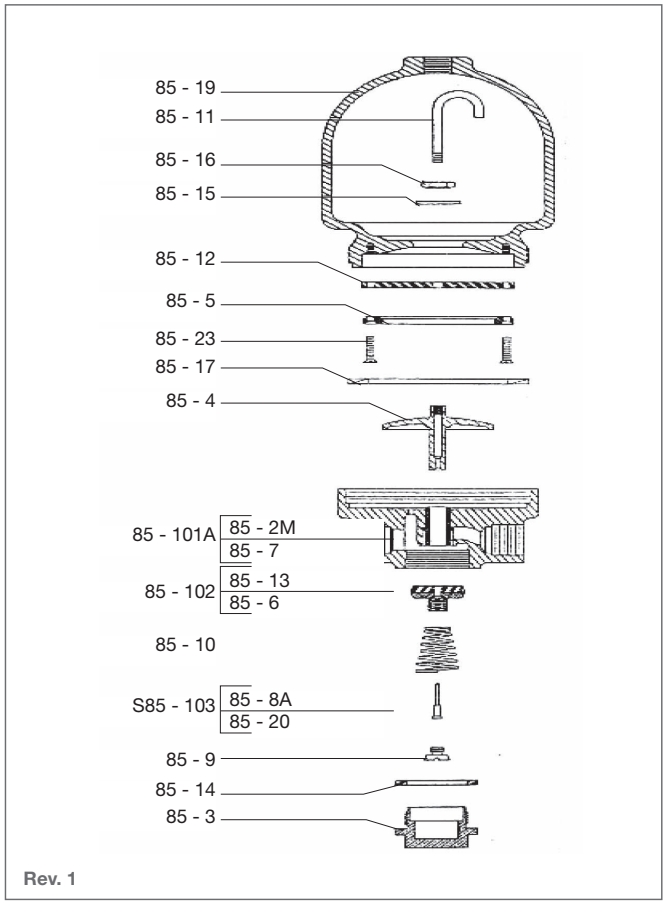
(vedi figura 2)
La valvola di scarico (exhaust valve) si apre quando il funzionamento di uno sprinkler provoca una rapida perdita di pressione nelle tubazioni. La rapida perdita di pressione non è avvertita istantaneamente all'interno del cupolotto (accelerator dome) e di conseguenza la maggiore pressione sopra il diaframma spinge ed apre la valvola di scarico permettendo all'aria compressa di entrare nella camera intermedia della valvola a secco che viene così aperta.

A02

Pulizia e Riparazione dell'Acceleratore

1. Dopo aver chiuso la valvola di intercettazione dell'impianto a secco e dopo aver scaricato tutta l'aria compressa dell'impianto rimuovere l'acceleratore dalla valvola a secco.
2. Svitare il tappo inferiore 85-3 e la vite della spina di restrizione 85-9.
3. Rimuovere la restrizione S85-103 evitando di piegare questo componente e staccare il complesso S85-102.
4. Staccare la camera inferiore S85-101A dal cupolotto (calotta) 85-19M.
5. Svitare le viti 85-23 e staccare l'anello di bloccaggio del diaframma 85-5M.
6. Rimuovere il diaframma 85-102, la guarnizione 85-15 e il tubo di restrizione 85-11.
7. Eliminare l'eventuale deposito sopra o sotto il diaframma.
8. Sostituire il complesso 85-102 con un complesso nuovo oppure lisciare la superfi cie con della pasta o della tela smeriglio.
9. Se la spina di restrizione S85-103 è piegata o ossidata sostituirla con una nuova. La nuova spina potrebbe doversi lisciare per consentire all'aria compressa di penetrare il cupolotto.
10. Se la molla 85-10 non sembra in buone condizioni sostituirla con una nuova.
11. Sostituire il diaframma 85-12, la guarnizione 85-15 e anche la guarnizione 85-17 con parti nuove. La guarnizione 85-17 è importante e deve avere uno spessore di 3,2 mm per evitare per il perno 85-4M sia troppo sporgente ed impedisca alla valvola S85-102 di premere con forza contro la sua sede.
12. Dopo che tutti i componenti da sostituire sono stati montati ricomporre l'acceleratore ed assicurarsi che sia a perfetta tenuta d'aria. È facile avere qualche perdita dalle guarnizioni se queste non sono state montate con molta cura.
13. Rimontare l'acceleratore sulla valvola a secco e riarmare la valvola seguendo le istruzioni "Riarmo della Valvola".

Nota: il cupolotto 85-17 deve essere lubrifi cato su entrambe le superfi ci a vite con il "Valve Seal Lubrifi cant" Dow Corning o altro prodotto equivalente, prima del montaggio.



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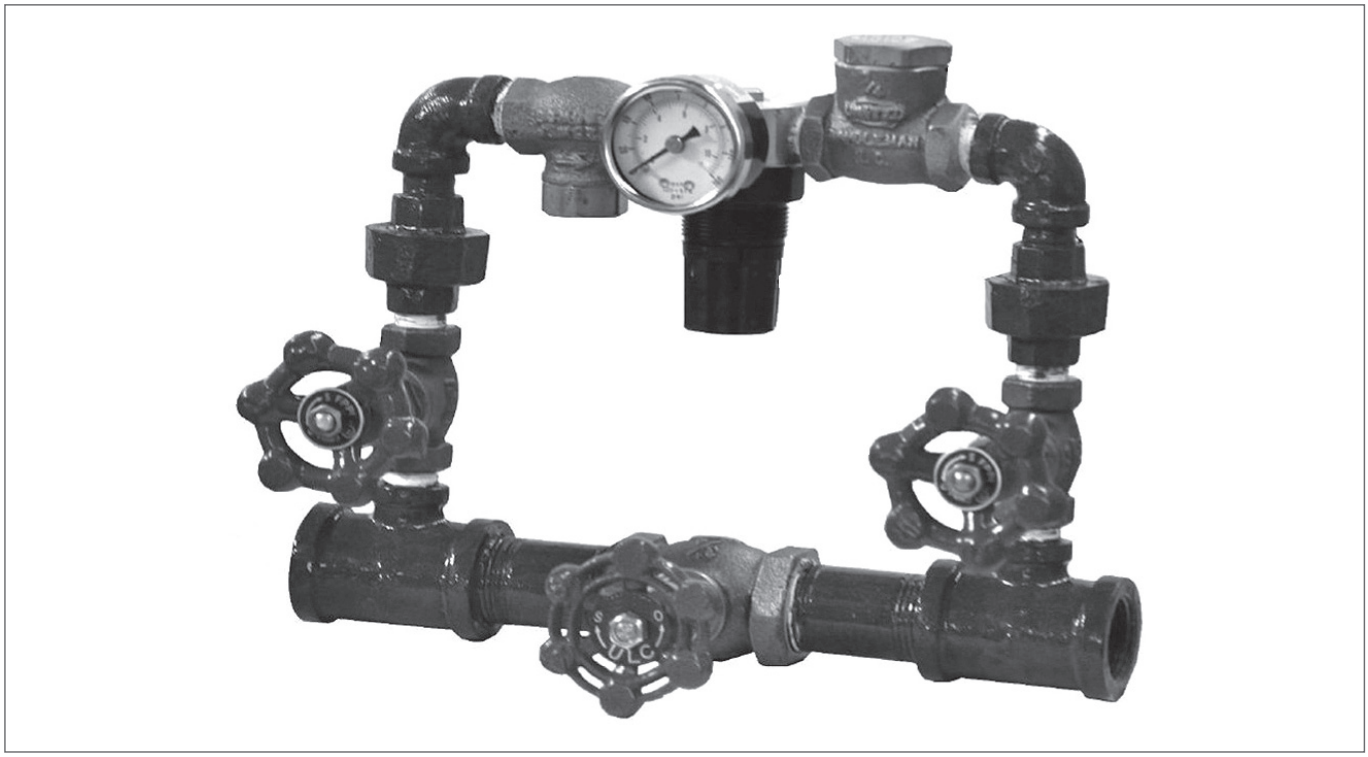
Ref.	Descrizione	Ref.	Descrizione
85-3 T	appo inferiore	85-11	Tubo di restrizione
85-4	Perno di spinta	85-12**	Diaframma
85-5	Anello di bloccaggio	85-14**	Guarnizione del Tappo Inferiore
85-102**	Valvola di scarico	85-15**	Rondella del Diaframma
85-103**	Spina di restrizione	85-16	Dado del Diaframma
85-9**	Vite della spina	85-17**	Guarnizione della Calotta (Cupolotto)
85-10**	Molla	85-23**	Viti dell'Anello (6 pz.)

** componenti inclusi nel "Repair Kit" dell'acceleratore.

Dispositivo Mantenimento Aria modello G

doc. nr. A02004A 19_07_2017



Descrizione e Funzionamento

Il Dispositivo Mantenimento Aria Eurofire™ modello G è progettato per mantenere sempre costante la pressione dell'aria negli impianti Sprinkler a Secco, a Diluvio e a Preazione, attraverso un sistema di bypass. La pressione desiderata la si può ottenere utilizzando l'apposito regolatore (fare riferimento alla documentazione tecnica della Stazione a Secco per la corretta pressione dell'aria necessaria).

Quando si riempiono le tubazioni dell'Impianto a Secco, la valvola a globo da 3/4" (1) è aperta in modo da riempire l'impianto rapidamente. Una volta che l'impianto è stato riempito alla pressione richiesta, la valvola a globo da 3/4" (1) viene chiusa e si aprono le due valvole a globo da 1/4" (2) che si trovano sul bypass e si regola la pressione desiderata tramite il regolatore (6). Ciò fornisce una continua ma limitata alimentazione di aria all'impianto. In questo modo si compensano eventuali piccole perdite di aria, evitando l'intervento della Stazione, finché le perdite non superano il limitato rifornimento di aria.

Dispositivo Mantenimento Aria modello G

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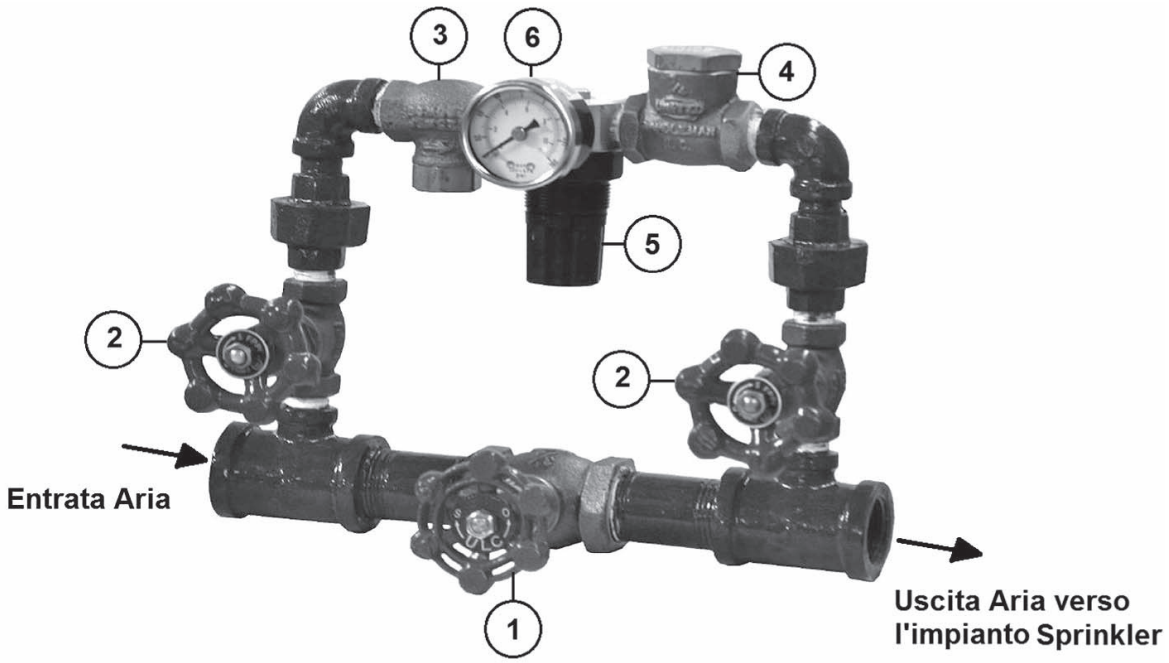

Rev. 1

Dispositivo Mantenimento Aria modello G

Ref.	Descrizione
1	Valvola a Globo 3/4" (1.9cm)
2	Valvola a Globo 1/4" (1.64cm)
3	Filtro Aria
4	Valvola di Ritegno
5	Regolatore Pressione Aria
6	Manometro Aria

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Valvola di Controllo Automatico Serie 700D

doc. nr. A02005A 19_07_2017

Model 799D

Descrizione generale

La valvola di controllo automatico serie 700D è una valvola azionata da pressione ed attuata da manica, di tipo assiale, progettata, come concetto base, con un attuatore incorporato, per funzionare come valvola di controllo in sistemi di protezione dall'incendio. La valvola serie 700D è usata come diluvio, preazione, a secco, con controllo
remoto, riduzione di pressione, di scarico sovrappressione, controllo pompe, controllo livello acqua ed altri tipi di valvole di controllo.
Il materiale standard delle valvole è dimensionato per 300 psi (21 bar) e richiede una pressione minima di linea di 20 psi (1,5 bar) per l'attuazione. Alla eliminazione della pressione di controllo, la valvola apre istantaneamente, anche se in modo molto graduale, per prevenire ogni possibile colpo d'ariete nel sistema di tubazioni.
Le prestazioni della 700D e la facilità di ripristino, non variano da installazione verticale od orizzontale.
La valvola automatica di controllo per acqua utilizza l'unicità di progetto N.M.M.P. (No Moving Mechanical Parts - assenza di parti meccaniche in movimento). L'unica parte in movimento quando la valvola Inbal viene azionata, è la rinforzata che fornisce una tenuta alla goccia con il nucleo resistente alla corrosione. Il progetto impedisce false manovre dovute a variazioni nella pressione dell'acqua. Il N.M.M.P. e la varietà di materiali disponibili e rivestimenti protettivi, rendono la valvola automatica di controllo per acqua ideale per l'utilizzo con acqua salmastra o acqua di mare simile a quella utilizzata negli stabilimenti chimici o petrolchimici o sulle piattaforme in alto mare. Può essere usata anche come valvola di controllo dello schiumogeno concentrato nei sistemi schiuma / acqua.
La valvola automatica di controllo per acqua serie 700D è disponibile in dimensioni che vanno dal 1 ½" (40 mm) a 12" (300 mm). Le valvole hanno attacchi di ingresso e di uscita filettati, flangiati o wafer.

Dati tecnici

Approvazioni

La valvola automatica di controllo per acqua è approvata FM fino a 300 psi (21 bar) nelle dimensioni da 3", 4", 6" e 8" (80, 100, 150 e 200 mm). Consultate la Guida di Approvazione FM per le applicazioni accettabili. Le valvole a diluvio hanno le Approvazioni di tipo Lloyd's, DNV, e ABS per tutte le dimensioni e la maggior parte di modelli.

Numeri di Modello

Estremità di ingresso	Estremità di uscita	Modello No.
Filettata	Filettata	711D
Flangiata	Flangiata	733D
Wafer	Wafer	799D

Dimensioni

Estremità filettate:
1 ½, 2", 2 ½", & 3" (40, 50, 65 & 80mm)
Estremità flangiate:
2", 2 ½", 3", 4", 6", 8", 10" 6 12" (50, 65, 80, 100, 150, 200, 250 & 300 mm).
Estremità wafer:
3", 4", 6", 8", 10" & 12" (80, 100, 150, 200, 250 & 300 mm)

Standard estremità

Estremità filettate:
NPT o BSPT.
Estremità frangiate:
ANSI B16.5 classe 150 & 300;
ISO 7005 PN 10, 16 & 25; *
BS 10 Tavola D & E; **
AS 2129 Tavola D & E; **
Jis B 2212, 2213, 2214; **
Estremità wafer:
Si adattano a tutti gli standards sopra indicati. **

* Compatibile con DIN 2501 e BS 4504.
** Esclude:
BS 10 Tavola E 6" (150 mm);
AS 2129 Tavola E 6" (150 mm);
Jis B2212 flangia regolare nelle dimensioni 4", 8" e 12" (100, 200 & 300 mm).

Classi di Pressione

Massima Pressione di esercizio*: 300 psi (21 bar).
Minima pressione di esercizio: 20 psi (1,5 bar).

* Valvola con materiale standard

Valvola di Controllo Automatico Serie 700D

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Campo di temperatura
Acqua: massimo + 150 °F (+ 65°C)

Posizione di installazione
Standard
Verticale o orizzontale

Materiali
Standard
Corpo valvola:
Acciaio al carbonio (SAE 1021).
Estremità valvola:
Ghisa malleabile (ASTM A536 65-45-12).
Manica:
SMR5 Elastomero rinforzato con Poliestere e Kevlar.

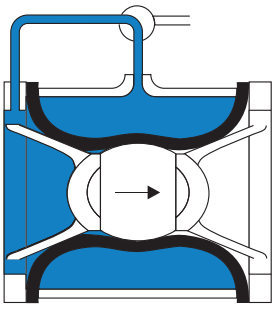
Opzionali
Acciaio Fuso;
Bronzo;
Nickel Alluminio Bronzo;
Acciaio inossidabile AISI 316;
Acciaio inossidabile Super Austenitico;
Acciaio inossidabile Super Duplex;
Titanio.

Rivestimenti
Standard
Rivestimento in polvere epossidica.
Spessore: 0.004" (0.1 mm) superfici esterne ed interne

Opzionali
Rivestimento ad alto spessore epossidico e finitura poliuretanica. Spessore: 0.01" (0.3 mm).
Rivestimento in Halar®. Spessore: 0.02" (0.5 mm).

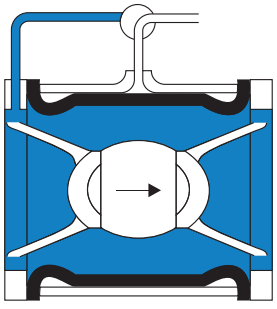
Halar® è un marchi registrato di Ausimont USA Inc.

Caratteristiche
- La valvola **Inbal**, progettata per essere una valvola di controllo, come concetto base utilizza un attuatore a manica incorporato.
- La costruzione con assenza di parti meccaniche in movimento (N.M.M.P.), assicura una lunga vita di servizio affidabile, riducendo i costi di manutenzione.
- La costruzione N.M.M.P. assicura operazioni senza attrito. Assenza di bloccaggi dopo la permanenza per prolungati periodi in posizione chiusa. Adatta per acqua salmastra e acqua di mare.
- Veloce ma graduale caratteristica di apertura che elimina i colpi di ariete e danni conseguenti.
- La pressione di linea o una pressione equivalente indipendente di comando, è sufficiente a chiudere la valvola ermeticamente.
- Prestazioni di chiusura delicate dovute alle caratteristiche costruttive della valvola **Inbal**. Non utilizza molle per assicurare una chiusura senza picchi di pressione.
- Pressione nominale di 300 psi (21 bar) per materiali standard dovuti alla costruzione robusta.
- Adatta per installazione verticale o orizzontale senza ripercussioni sul funzionamento della valvola **Inbal**.
- Costruzione leggera di facile installazione e manutenzione.
- Disponibile con estremità filettate, flangiate e wafer, in accordo a vari standards.
- Principio unico di operatività che previene interventi intempestivi per picchi di pressione idraulica.
- Ampio campo di dimensioni per un'ideale progettazione di sistemi.
- Costruzione compatta minimo spazio richiesto per la valvola ed il trim. Permette l'installazione in spazi ristretti.
- Rivestimenti con vernici epossidiche forniti nella esecuzione standard assicurano una eccellente resistenza alla corrosione.
- Ampia varietà di materiali disponibili per assicurare un servizio senza corrosione anche con severe condizioni ambientali.
- Compatibile con commando elettrico, pneumatico e/o idraulico.
- Eccellente prestazione di regolazione in un ampio campo di portate e pressioni di linea.
- Ampia selezione di valvole pilota, attuatori e accessori per definire la valvola di controllo più adatta allo scopo.
- Una singola valvola automatica può essere utilizzata per più funzioni di controllo.
- Ogni singola valvola è provata idraulicamente nelle condizioni reali di portata e pressione.
- Progetto innovativo con una lunga storia di provata affidabilità.



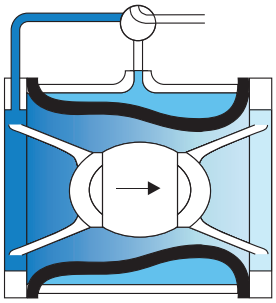
Operazione di chiusura
Quando la pressione dall'ingresso valvola (o una equivalente indipendente pressione operative) è applicata alla Camera di Controllo, la valvola **Inbal** *chiude ermeticamente. Il tessuto della manica avvolge con sicurezza il materiale elastico fornendo un forte supporto.*

Figure (1)



Operazione di apertura
Quando la pressione nella Camera di Controllo è scaricata in atmosfera, la valvola **Inbal** *apre completamente. La manica è trattenuta con sicurezza dal corpo della valvola.*

Figure (2)



Azione modulante
Una stabile azione modulante si ottiene quando una quantità di fluido di pressurizzazione è mantenuta nella Camera di Controllo. E' la quantità di fluido nella Camera di Controllo che determina la posizione della manica. La Camera di Controllo può essere alternativamente riempita o svuotata per raggiungere le volute condizioni operative.

Figure (3)

Valvola di Controllo Automatico Serie 700D

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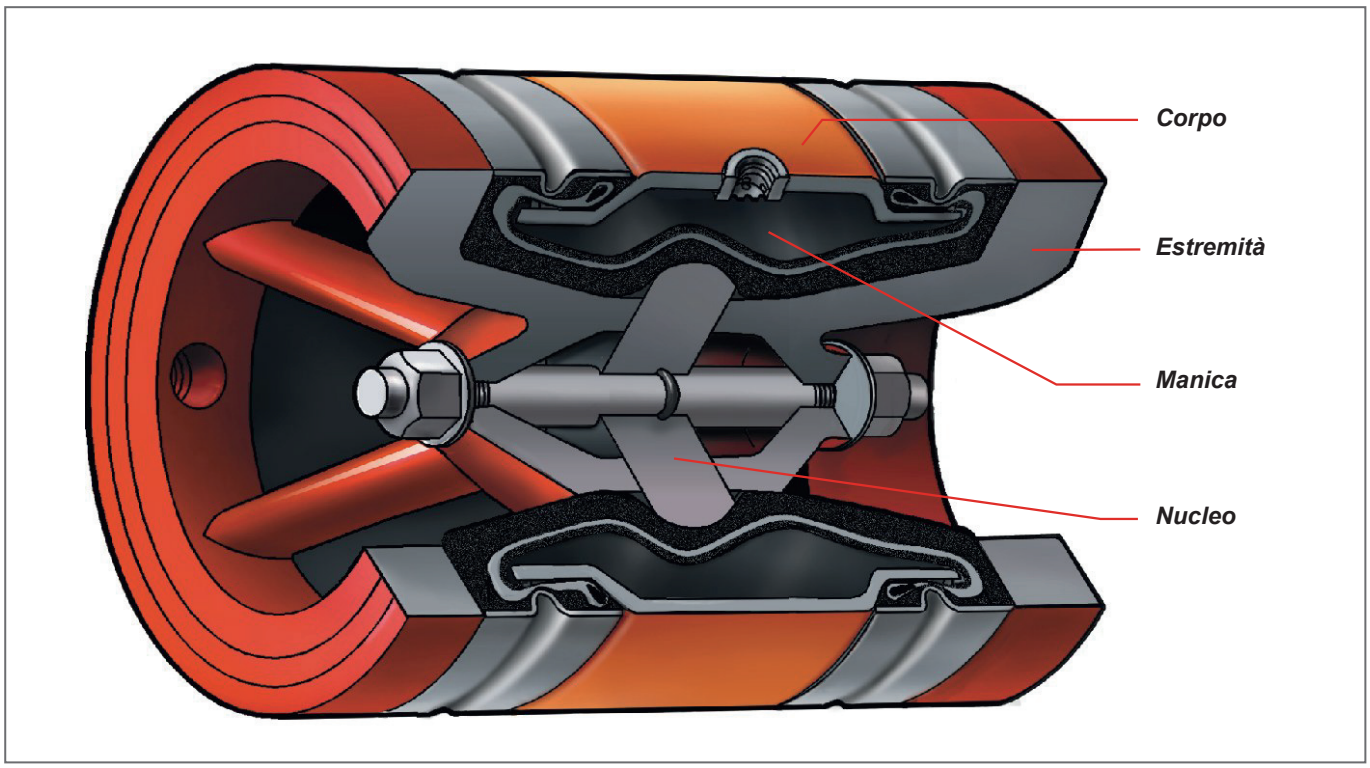

Funzionamento
La Camera di Controllo della valvola è lo spazio anulare tra il corpo della valvola e la manica. La valvola è mantenuta in posizione chiusa finchè la pressione in ingresso rimane nella Camera di Controllo.
Nella posizione di set, la pressione dell'acqua è trasmessa dalla sezione a monte al circuito di attuazione della Camera di Controllo e la valvola rimane in posizione chiuso. L'attuazione della valvola con un attuatore manuale, pneumatico od elettrico scarica la pressione nella Camera di Controllo della valvola e la valvola apre completamente, permettendo il flusso di acqua nel sistema di tubazioni. Quando vengono applicati una pressione o una portata di controllo, la Camera di Controllo è monitorata per modulare una determinata pressione di uscita, massima pressione di uscita o controllo di portata.Il principio di intervento è illustrato nelle Figure da (1) a (3). Le perdite di pressione sono mostrate nel Grafico (1). pressione nominale

Installazione
Riferirsi al diagramma del circuito di comando applicabile allo specifico modello della valvola in uso.
1. Quando si riceve la valvola **Inbal**, aprire con cura l'imballo e verificare visivamente che non ci siano stati danni ai componenti del circuito, tubazioni e raccordi.
2. La valvola deve essere installata in un'area non soggetta a condizioni di congelamento.
3. Pulire sempre le tubazioni prima di installare la valvola.
4. Collegare la valvola nel sistema di tubazioni all'uscita della valvola di alimentazione dell'acqua. Verificare che la freccia sul corpo della valvola corrisponda alla direzione del flusso. La valvola può essere installata in qualsiasi posizione. Determinare quale lato della valvola possa essere più facilmente accessibile ed installare tutti i componenti di conseguenza.
5. Installare la valvola nel sistema di tubazioni. Riferirsi anche alla relativa Guida di Installazione. Valvola con estremità filettate - collegare le estremità filettate femmina della valvola alle filettature maschio delle tubazioni.
   Utilizzare un poco di pasta per giunzioni filettate solo sui maschi dei filetti.
   Valvola con giunzioni flangiate collegare con dadi e bulloni le flange delle valvole alle flange delle tubazioni, interponendo le guarnizioni. Completare l'accoppiamento con un serraggio uniforme dei bulloni.
   Valvola con estremità Wafer Installare la valvola tra le flange del sistema tubazioni. Inserire le guarnizioni tra l'estremità della valvola e le flange delle tubazioni.
   Inserire quattro tiranti, posti a 90 attorno alla valvola, attraverso le guide della valvola e le flange della tubazione ed assicurare con i bulloni.
   Completare l'assemblaggio con un serraggio uniforme.
6. Completare il montaggio dei circuiti di comando collegando le sezioni preassemblate o assiemare il circuiti se ordinati in parti sciolte. Riferirsi allo schema del circuito e Guida di Installazione.
7. L'alimentazione di pressione al circuito di comando deve sempre essere derivata o dall'ingresso alimentazione acqua o a valle della valvola **Inbal**, attraverso un tubo da ½".
8. Il drenaggio deve essere libero da ritorni di pressione. Prevedere uno spazio d'aria tra il tubo ed il drenaggio.
9. Armare la valvola seguendo la procedura applicabile.
10. Provare la valvola **Inbal**, il circuito di comando e gli allarmi in accordo alle procedure applicabili.

Ripristino
Il sistema con la valvola automatica di controllo per acqua deve essere ripristinato e rimesso in servizio al più presto dopo una attuazione automatica, in emergenza o manuale. Riferirsi al bollettino per la procedura dettagliata.

Valvola di Controllo Automatico Serie 700D

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Diagramma

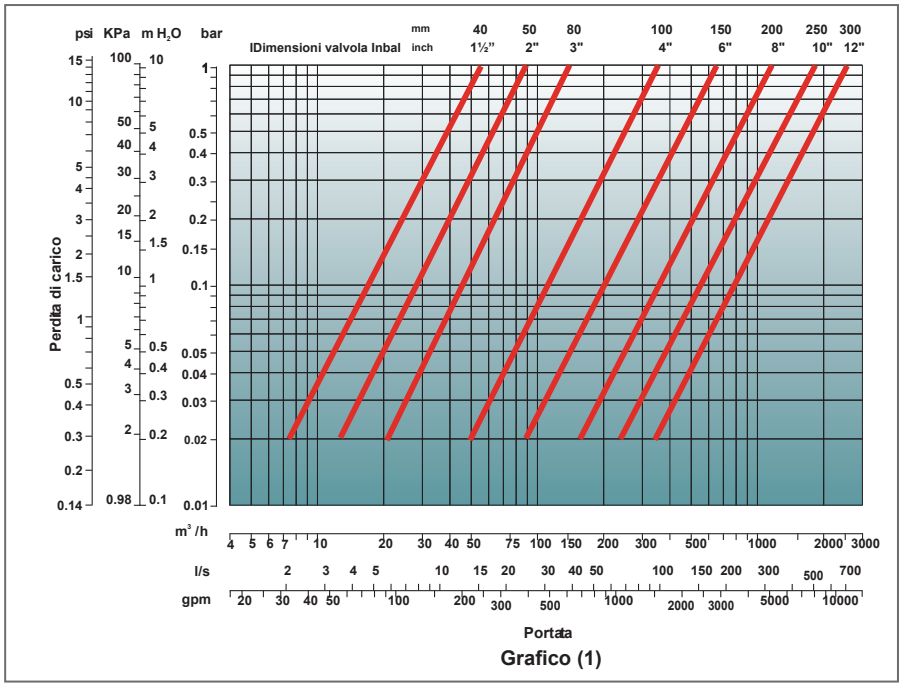

Grafico (1)

Manutenzione, Ispezione & Prove

Si raccomanda che ispezioni periodiche e prove siano condotte da personale qualificato per assicurare che la valvola automatica di controllo per acqua ed i relativi componenti siano in buone condizioni operative. Le attività di ispezione e di prova dovrebbero essere svolte in accordo agli Standard NFPA, le linee guida e le regole delle Autorità aventi giurisdizione ed alle relative istruzioni. Si raccomanda che le valvole siano provate, utilizzate, pulite ed ispezionate periodicamente.

Una ispezione Settimanale includerà la posizione della valvola di alimentazione acqua, pressione disponibile e componenti principali del circuito di attuazione, come elencato nel foglio dati di riferimento nel quale la valvola automatica di controllo per acqua viene descritta.

Una verifica Trimestrale includerà il controllo degli allarmi, pulizia dei filtri e componenti principali come indicato nel foglio dati di riferimento nel quale la valvola automatica di controllo per acqua viene descritta.

Una verifica Semestrale includerà la verifica del circuito di attuazione, come in quella Trimestrale, in accordo a quanto indicato nel foglio dati di riferimento nel quale la valvola automatica di controllo per acqua viene descritta.

Una verifica Annuale includerà lo scatto della valvola, la verifica semestrale e quella trimestrale come indicato nel foglio dati di riferimento nel quale la valvola automatica di controllo per acqua viene descritta.

Rimozione

Per rimuovere la valvola Inbal:

1. Chiudere tutte le valvole di alimentazione della pressione:
   a) Valvola di alimentazione acqua.
   b) Valvola di intercettazione del circuito di attuazione.
2. Aprire la valvola di comando di emergenza per scaricare la pressione dalla camera di controllo della valvola **Inbal**.
3. Aprire le valvole di drenaggio per permettere lo scarico di tutta l'acqua.
4. Rimuovere il circuito di attuazione dalla valvola **Inbal**.
5. Rimuovere la valvola dalla linea per l'ispezione.
6. Per reinstallare seguire la sezione Installazione della procedura (usare nuove guarnizioni per valvole frangiate o wafer).

Fattore di Flusso

Il Fattore di Flusso Cv (Kv) è definito come la portata in gpm (m^3/h) di liquido a 680F (200c), che fluisce con 1 psi (1bar) di perdita di pressione.

Dimensioni Valvola		Fattore di Flusso	
mm	inch	Kv	Cv
40	1½"	60	70
50	2"	90	105
80	3"	140	162
100	4"	330	383
150	6"	610	708
200	8"	1150	1334
250	10"	1630	1891

Table (1)

Per definire la perdita di carico attraverso una valvola ad una portata specifica, usare la seguente equazione (solo per acqua):

$$\Delta P = \left(\frac{Q}{Kv}\right)^2 \qquad \Delta P = \left(\frac{Q}{Cv}\right)^2$$

ΔP= Perdita di carico in bar.
Q = Portata in m^3 / h.
Kv = Fattore di Flusso.

ΔP= Perdita di carico in psi.
Q = Portata in gpm
Cv = Fattore di Flusso.

Usare la Tavola (1)

Contenuto della Camera di Controllo

Dimensioni Valvola		Contenuto U.S.	
mm	inch	litri	galloni
40	1½"	0.3	0.08
50	2"	0.3	0.08
80	3"	0.3	0.08
100	4"	0.5	0.13
150	6"	1.7	0.45
200	8"	3.5	0.92
250	10"	8.1	2.1
300	12"	12.7	3.4

Tavola (2)

Richieste di Offerta/Ordini

Il foglio dati dovrebbe essere sottoposto per Richieste di Offerta/Ordini (bollettino F01-05-XX).

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Deluge Systems

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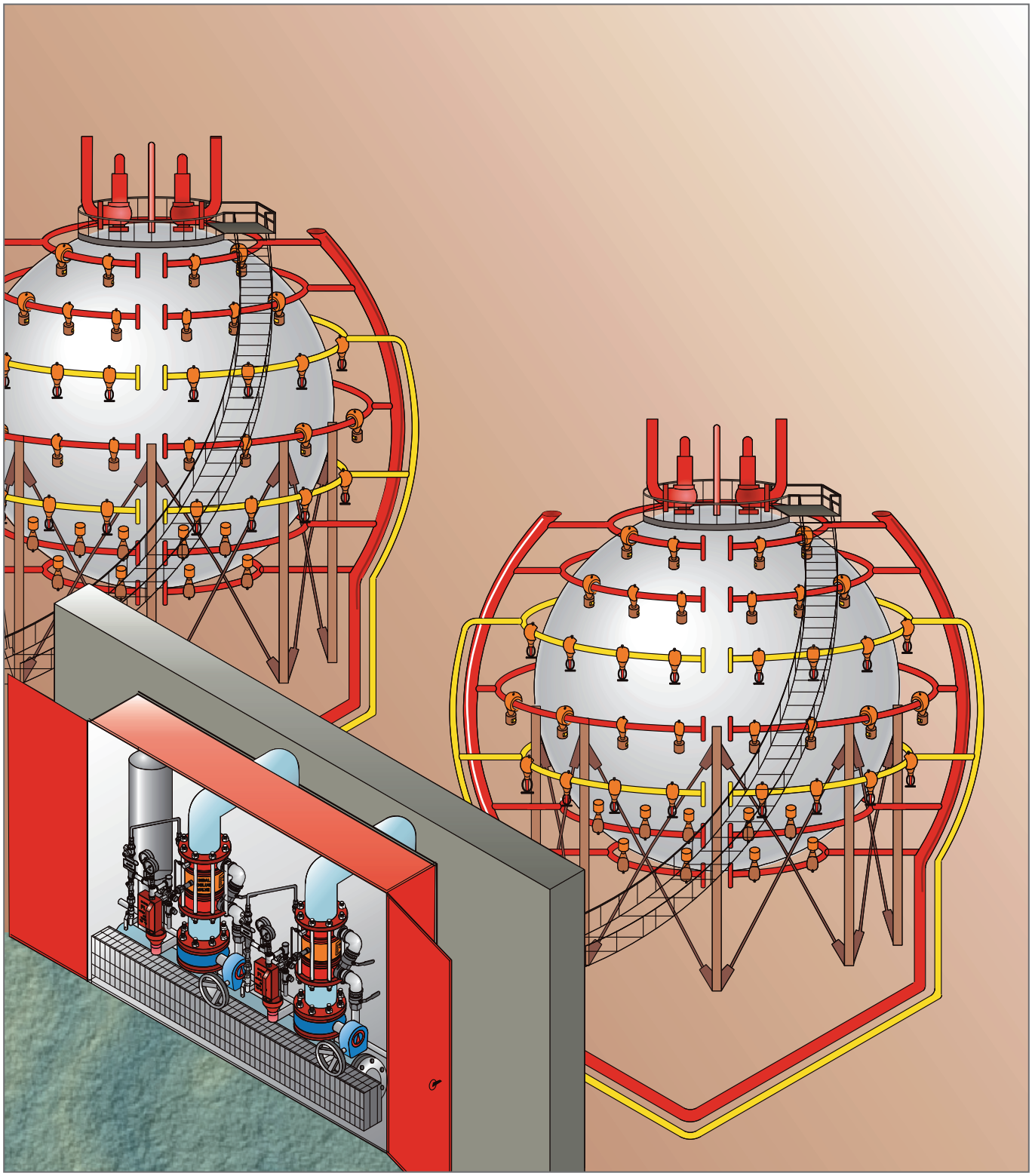

A02

A Deluge System is a sprinkler piping system employing open sprinklers or nozzles, connected to a water supply through a deluge valve which is closed when in set position.
There is no water in the sprinkler system pipe, and it is at atmospheric pressure. A supplemental detection system is provided throughout the same area as the sprinkler system.
The deluge valve is operated manually or automatically by actuation of the detection and release systems. When the deluge valve opens, water flows into the piping system and discharges from all open sprinklers and/or nozzles in the system.
In the foam-water deluge system, when the deluge valve opens, water flows into the piping system. Foam concentrate [protein, fluoroprotein, or aqueous film forming foam (AFFF)] is injected into the water, and the resulting foam solution through all sprinklers and spray nozzles simultaneously generates and distributes foam.
Deluge systems, as the name implies, are intended to deliver large quantities of water over a large area in a relatively short period of time. Deluge systems are suitable for facilities that contain combustible or flammable materials. In addition, these systems are used for situations in which thermal damage is likely to occur in a relatively short period of time.
Foam-water deluge systems are especially applicable in the protection of most flammable liquid hazards.

Deluge Systems are used for the purpose of:

- Extinguishing fire in the protected area by discharging suitable foam-solution densities, the use of selected discharge devices, and by provision of adequate supplies of air-water at sufficient pressures.
- Prevention of fire in the protected area by manual operation of the deluge valve to discharge foam or water in case of accumulation of hazardous materials from spills to afford protection against ignition in such occupancies as garages, aircraft hangars, petrochemical plants, paint and varnish plants, or from other causes in the protected area.
- Control of fire to allow controlled burning of flammable and combustible materials where extinguishment is not practical. Exposure protection to reduce heat transfer to neighboring high hazardous areas can be accomplished by water spray or foam.

Water supplies for deluge systems shall be of flow capacity and pressure capable of maintaining foam or water discharge or both, at the design rate for the required period of discharge, over the entire area. Since deluge systems produce a large volume of water, a proper drainage system should be provided in the protected area.

Eurofire Deluge Valves are available for:
Local Resetting - Once the deluge valve operates, it is latched in an open position and will not close even if the releasing device closes. The deluge valve will close only if the Local Resetting procedure, applicable to the specific Eurofire Deluge Valve in use, is exercised.In the design of the Local resetting Eurofire Deluge Valve, priority was given to fast and easy reset after testing or emergency operation.
Remote Resetting - The Eurofire Deluge Valve can be remotely reset. The remote resetting enables quick resetting from the control panel or control room for areas which no longer need to be fire extinguished or cooled. Thus, the water resources are effectively used only in the areas which are still under emergency conditions.

The Eurofire Deluge Valve is designed to allow for a variety of detection and release systems:
Hydraulic Actuation - A wet pilot line contains water under pressure and functions as thermal detecting and releasing device. A manual emergency valve can provide, besides automatic actuation, remote and/or local manual operation.
Hydraulic actuation is the simplest and least expensive release system.
Pneumatic Actuation - A dry pilot line contains air or gas under pressure, functioning as a thermal detecting and a releasing device. A manual emergency valve can provide, besides automatic actuation, remote and/or local manual operation. Installation and maintenance are usually more costly than Hydraulic Actuation. To reduce operation time, an optional accelerator may be considered. However, the Eurofire Pneumatic Actuators are designed for operation at a minimal pressure drop of the dry pilot line, regardless of the water line pressure level.
Electric Actuation - The electric detection system consists of heat, smoke, flame, or radiative detectors and communicates electrically with a control panel. The releasing device normally consists of a solenoid valve, which could be of power-to-open type (a back-up power source may be considered), power-to-close type (solenoid is under power in set position), or magnetic latch (impulse) type (selfmaintained position from the last control signal of a millisecond duration). A remote manual electric operation and local hydraulic manual operation are normally included.
Installation and maintenance are usually more costly than hydraulic or pneumatic control.
Any combination of hydraulic, pneumatic, and/or electric actuation arranged as non-interlocked or double interlocked is available. One of the most popular in the industry is:

Pneu-Electric Actuation - A combination of pneumatic and electric actuation designed as non-interlocked action. The Eurofire Deluge Valve will open either by operation of the dry pilot line or the electric detection system.
A pressure control added feature is available on each of the actuation types (see section F06).
Besides the types of deluge valves included in this book, there are many other variations as well as customized deluge valves to answer specific requirements for functional and operational conditions.

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Deluge Valve, Electric Actuation Series 700D/DX

doc. nr. A02007A 19_07_2017

Model 799D-03C-01

General description

The Remote Resetting, Electrically Actuated Deluge Valve is specifically designed for use in fire protection systems actuated by a remote resetting, electric detection and release system. The Automatic Water Control Valve used in this deluge system is a pressure operated, sleeve actuated, axial valve designed for use in fire protection systems.
The Electrically Actuated Deluge Valve is used for automatic or manual operation. Electric activation of the deluge system requires a solenoid valve controlled by a control (fire alarm & releasing) panel either manually or by heat, smoke, or flame detectors. When the detection system operates, the control panel energizes the Solenoid Valve to open. When the Solenoid Valve is actuated either automatically or manually, or when a manual release station is operated locally or by remote, the Deluge Valve opens to flow water from all open sprinklers and/or nozzles on the system. After operation, the Valve can be reset by remote control, saving the need to approach the Deluge Valve for resetting.

The control trim includes all the pilot valves, accessories, fittings, and pressure gauge to provide for proper operation, either at vertical or horizontal installation. The series 700DX- 03C01 includes a Drain Valve installed in the Drain End.
The standard material Deluge Valve is rated to 300 psi (21 bar) working pressure, but due to the lower pressure rating of the standard Solenoid Valve in use, it is limited to 175 psi (12 bar).
The Remotely Resetting Deluge Valve is available in sizes 1½" (40 mm) to 12" (300 mm) with threaded, flanged, or wafer inlet ends and threaded, flanged, grooved, and wafer outlet ends.
The only moving part in the Deluge Valve, when it operates, is the reinforced sleeve which forms a driptight seal with the corrosion resistant core. It has a smooth opening to prevent any water hammer in the piping system.
The unique design and variety of materials and coatings make the Deluge Valve suitable for use with brackish or sea water similar to those found in chemical and petrochemical facilities or in offshore platforms.

Technical Data

Approvals

The Electrically Controlled, Remote Resetting Deluge System includes FM approved components.
Deluge Valves have Lloyd's, DNV, and ABS Type Approvals for all sizes. Refer enquiries for VdS approved valves to your nearest distributor.

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711DX-03C01
Threaded	Grooved	716DX-03C01
Flanged	Flanged	733DX-03C01
Flanged	Grooved	736DX-03C01
Wafer	Wafer	799DX-03C01

"DX" can be replaced with "D" depends on the Automatic Water Control Valve series in use. See bulletins F02-01-01 and F02-03-01.
The above model numbers refer to fully trimmed valves. For basic trim replace "03" with "13". (See also bulletin F01-03-01 for control trims "23" & "33"). For example: 733D-13C01 is a flanged ends deluge valve with basic, remote resetting, electrically actuated trim.

Sizes

Threaded and Grooved Ends:
1½", 2", 2½", & 3" (40, 50, 65, & 80 mm).
Flanged and Grooved Ends:
2", 2 ½", 3", 4", 6", 8", 10", & 12" (50, 65, 80, 100, 150, 200, 250, & 300 mm).
Wafer End:
3", 4", 6", 8", 10", & 12" (80, 100, 150, 200, 250, & 300 mm).

Manufacturer: MIL Valves

End Standards
Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN10, 16 & 25 ;
BS 10 Table D & E ;
AS 2129 Table D & E ;
Jis B 2212; 2213, 2214.
Wafer End:
Fits most of the above standards.
Grooved End:
ANSI/AWWA C606-87.

Pressure Rating
Maximum working pressure: 175 psi (12 bar). Higher working pressure is available depends on the specific solenoid valve in use.

Temperature Range
Water: Max. +1500F (+650C).

Installation Position
Vertical or horizontal.

Solenoid Valve
Available in:
Energized to open, energized to close, and magnetic latch (impulse) types.
Standard voltages:
AC 50Hz: 24, 48, 110, 220, & 380 volt ;
AC 60Hz: 24, 120, & 240 volt ;
DC: 12, 24, 48, 110, 120, & 220 volt .
Other voltages are available on request.
Protection type Enclosure:
Conforms to NEMA (1 to 9), IEC (79 & 529), or CENELEC standards (50014 to 50019).
See bulletins F30-10-01; F30-11-01; and F30-12-01.

Materials
Standard
Valve Housing:
Carbon steel (SAE 1021).
Valve Ends and Wafer Drain End:
Ductile Iron (ASTM A536-65 45 12).
Threaded, Flanged, and Grooved Drain Ends:
Carbon steel (SAE 1020).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel, and Galvanized Steel.

Optional
Cast Steel ;
Bronze ;
Nickel Aluminum Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

Coating
Standard
Powder epoxy coated .Thickness: 0.004" (0.1 mm) external and internal surfaces.
Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01" (0.3 mm).
Halar® coated. Thickness: 0.02" (0.5 mm).

Halar® is a registered trade mark of Ausimont USA Inc.

Control Trim
On standard, the control trim is supplied preassembled in sections. If self assembly is required, all the trim components are supplied in loose form.
The complete control trim includes the following components:
- Solenoid Valve.
- Trim Shutoff Valve and Drain Valve are quarter turn, ball valves.
- Y- Strainer with stainless steel screen.
- Alarm Test Valve - 3 way, L-port, quarter turn ball valve.
- Check Valve - spring loaded, soft seat.
- Supply Pressure Gauge with dual scale (psi and bar).
- Pressure Gauge Valve - 3 way, quarter turn ball valve.
- Drain Cup and Drain Tubes.
- Automatic Drain Valve.
- Emergency Release Station.

Features
- Remote Electric activation and reset enables efficient control of the whole area.
- The same deluge valve can be operated and reset from the control room as well as from field control panel.
- No Moving Mechanical Part (N.M.M.P.) construction ensures a long life of dependable operation, reducing the cost of maintenance.
- Quick, yet soft opening performance - eliminates water hammer and Consequent damages.
- The line pressure is sufficient to close the Valve tightly. Can perform also, when water supply valve is not in use.
- Optional opening and/or closing speed control is available.
- Fast and easy reset - no need to approach the valve.
- Supplied standard in almost complete preassembled form - saves the selfassembly cost.
- Can be installed vertically or horizontally.
- Compact design - minimum space for valve and trim.
- Unique principle of operation prevents false operation due to water surges.
- Pressure rating of 300 psi (21 bar) provided a compatible solenoid valve is used.
- Wide selection of solenoid valves to meet various requirements for type of operation, voltage, frequency, protection, and enclosure.
- Wide range of sizes for an ideal system design.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard ensures excellent corrosion resistence.
- Variety of available materials to ensure corrosion - free service even under severe conditions.
- Compatible with electric, pneumatic, and/or hydraulic release with the same basic trim.
- Additional functions such as pressure control or another release system, could be added on the same valve body.

Deluge Valve, Electric Actuation Series 700D/DX

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Operation

The Control Chamber of the Automatic Water Control Valve is the annular space between the valve Housing and the Sleeve. The valve is held in a closed position as long as the inlet pressure is maintained in the Control Chamber of the valve.

Electric actuation trim consists of a Solenoid Valve connected to the wet pilot line and controlled by the detection system and the control (Fire Alarm & Releasing) panel.

In the set position the water pressure is applied to the Valve Control Chamber and to the Solenoid Valve from the upstream of the Water Supply Valve.

The de-energized "energized to open" type or energized "energized to close" type Solenoid Valve is closed. Consequently, the Deluge Valve stays closed.

The Deluge Valve opens wide when the detection system senses the presence of fire and an electrical signal to the control panel actuates (energizes or de-energizes, depending on the type of solenoid valve) the Solenoid Valve to open. The Solenoid Valve opens also when the manual emergency electric station is activated.

The actuated Solenoid Valve releases water from the Valve Control Chamber. The Deluge Valve opens fully, introducing a flow of water to the system while activating the alarm devices. Water will flow from any open sprinklers and/or spray nozzles on the system.

The valve remains in a wide open position until the Resetting procedure is followed. Actually the Deluge Valve is reset by the mere retrieval of the release device to its set position.

The Deluge Valve series 700D-03C and 700DX-03C have several optional solenoid valves:

Magnetic Latch type Solenoid Valve:
when the Solenoid Valve is actuated it is latched and holds the Deluge Valve in an open position until resetting.

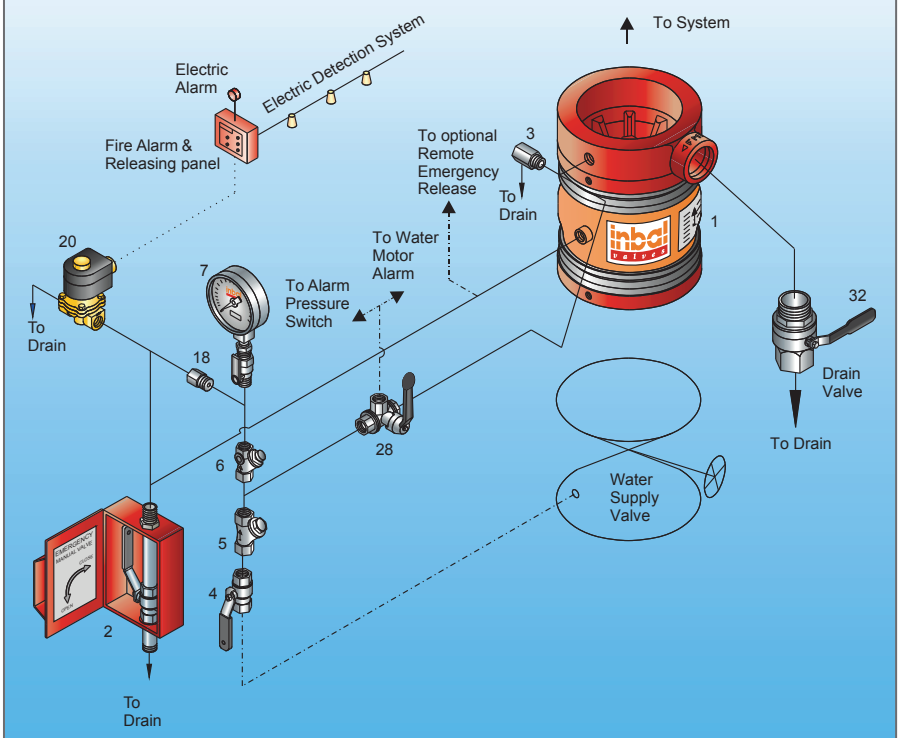
Non-Latch Solenoid Valve: Available in types of "energized to open" and "energized to close" the Deluge Valve.

When actuated, the Solenoid Valve allows the Deluge Valve to open.

Note: For "energized to open" type solenoid valve - once actuated, the Solenoid Valve must remain energized as long as the Deluge Valve's open position is required for flowing water to the area.

The Emergency Release Valve is used for emergency actuation of the Deluge Valve and for routine testing.

Schematic Control Diagram – 700DX-03C01



1 **Inbal** Automatic Water Control Valve
2 Emergency Release Station
3 Automatic Drain Valve
4 Trim Shutoff Valve
5 Y-Strainer
6 Check Valve
7 Supply Pressure Gauge
18 Restriction Orifice
20 Solenoid Valve
28 Alarm Test Valve
32 Drain Valve

Installation

Refer to the Trim Chart applicable to the specific Deluge Valve model in use.

1. When the Deluge Valve is delivered, carefully unpack and check that there has been no damage to the operating components, piping, and fittings.
2. Always flush the pipelines before installing the Valve.
3. Place the Valve in the piping at the outlet of the Water Supply Valve.
   Verify that the arrow on the valve Housing matches the actual flow direction. Determine which side the system will be accessed from and locate the Valve on the piping system accordingly.
4. Install the Deluge Valve in the pipe line. Use gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the valve ends.
5. Complete the trim assembly by connecting the preassembled sections or assemble the trim if ordered in loose component form.
   Refer to the applicable Trim Chart and Installation Guide.
6. The water pressure supply to the control trim must always be sourced from the inlet of the Water Supply Valve through a ½" pipe.
7. Assemble the Solenoid Valve according to the drawing, the applicable solenoid valve bulletin and the direction of flow. The Solenoid Valve must be wired in accordance with the requirements of the authorities having jurisdiction and/or NEC, IEC, or CENELEC standards and codes. Wiring should be done by a licensed electrician.
8. Set the Deluge Valve by following the Resetting procedure.
9. Test the Valve, the trim, and the alarms according to the Testing procedure.

Resetting

The Deluge Valve system must be reset and restored to service as soon as possible after automatic, emergency, or manual actuation.

1. After automatic or manual electric operation - reset the detection system, Fire Alarm & Releasing Panel, and the Solenoid Valve. The Deluge Valve will close drip tight. Electric Alarm and water flow alarms are reset. Verify that the supply pressure has been restored to the normal level.
2. After manual emergency operation - close the Emergency Release Valve.
   The Deluge Valve will close drip tight.
   The water flow alarm is reset.
   Verify that the supply pressure has been restored to the normal level.
   In either one of the operations exercised, the system piping should be drained.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Deluge Valve and related equipment are in good operating condition. The inspection and testing activities should be done according to NFPA Standards, the guidelines and regulations of the authorities having jurisdiction, and the following instructions. It is recommended that the Deluge Valve be tested, operated, cleaned, and inspected at least on a routine basis.

Inspection

A weekly Inspection is recommended:

1. Verify that the Water Supply Valve is sealed in a full open position.
2. Verify that the required water pressure is being applied to the Deluge Valve inlet and trim.
3. Verify that the Trim Shutoff Valve, Alarm Test Valve, Emergency Release Valve, Pressure Gauge Valve, and Drain Valve (if in use) are in set position.
4. The Supply Pressure Gauge should be checked for accuracy.
5. Visually inspect for disconnected wires, broken or missing parts, or other evidence of impaired protection.

Strainer Cleaning

A *quarterly* Strainer Cleaning is recommended:

1. Close the Trim Shutoff Valve.
2. Remove the covers of the trim and alarm Y- Strainer. Clean if necessary.
3. Open the Trim Shutoff Valve.

Alarm Testing

A *quarterly* Alarm Testing is recommended:

1. Test the Water Motor Alarm or Alarm Pressure Switch by opening the Alarm Test Valve.
2. Water Motor Alarm should be audible.
   Alarm Pressure Switch should activate.
3. Close the Alarm Test Valve. All local alarms stop sounding and pressure switch is reset.
4. Verify that supply piping to alarm drains properly.

Deluge Trim Testing

A *semi-annual* Deluge Trim Testing is recommended. Testing of the control trim is conducted with no flow of water to the system.

1. Close the Water Supply Valve installed in the inlet of the Deluge Valve.
2. Actuate the Solenoid Valve.
   Verify that water is drained from the deluge trim which simulates an open position of the Deluge Valve.
3. Reset the valve by performing the instructions in Resetting.
4. Open the Water Supply Valve.

Trip Testing

An annual Trip Testing is recommended.
Performing the Trip Testing will cause water to flow from all open sprinklers and/or nozzles. Prevent damage by taking the necessary precautions.

1. Trip the Deluge Valve to open by either:
   a) Actuation of the Solenoid Valve.
   b) Opening the Emergency Release Valve.
   The water in the Valve Control Chamber is allowed to vent to the atmosphere. The Deluge Valve will open and water will flow to the system.
2. All the alarms should operate. Verify that the whole system is working properly.
3. Reset the system by performing the instructions in Resetting.
4. Verify that water supply pressure is restored to the normal level.

Removal

To remove the Deluge Valve:

1. Close all the pressure supply valves:
   a) Water Supply Valves.
   b) Trim Shutoff Valve.
2. Disconnect the electric wires from the Solenoid Valve. The electric work should be done by a licensed electrician.
3. Open the Emergency Release Valve to release the water pressure from the Valve Control Chamber.
4. Open the Drain Valve to allow all the water to drain.
5. Disconnect the union and remove the trim from the valve.
6. Remove the Valve from the line for inspection.
7. To reinstall, follow the Installation procedure (use new gaskets for flanged or wafer valve).

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Deluge Valve, Pneumatic Actuation Series 700D/DX

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Model 799D-03B01

General description

The Remote Resetting Pneumatically Actuated Deluge Valve is specifically designed for use in fire protection systems actuated by a remote resetting, pneumatic release system. The Automatic Water Control Valve used in this deluge system is a pressure operated, sleeve actuated, axial valve designed for use in fire protection systems.
The Remote Resetting, Pneumatically Actuated Deluge Valve is primarily used for manual operation. The dry pilot line pressurized with compressed air or nitrogen is equipped with remote release valves. When one or more of the remote release valves is manually actuated, the dry pilot line pressure drops and the Deluge Valve opens to allow water to flow from all open sprinklers and/or nozzles on the system. The Deluge Valve can be reset by remote, saving the need to approach the deluge valve for resetting.

The control trim includes all the actuators, accessories, fittings, and pressure gauge to provide for proper operation, either at vertical or horizontal installation. The series 700DX-03B01 includes a Drain Valve installed in the Drain End.
The standard material Deluge Valves are rated to 300 psi (21 bar) working pressure and are available in sizes 1½" (40 mm) to 12" (300 mm). The valves have threaded, flanged, or wafer inlet ends and threaded flanged, grooved, and wafer outlet ends.
The only moving part in the Deluge Valve, when it operates, is the reinforced sleeve which forms a driptight seal with the corrosion resistant core. It has a smooth opening to prevent any water hammer in the piping system.
The unique design and variety of materials and coatings make the Deluge Valve suitable for use with brackish or sea water similar to those found in chemical and petrochemical facilities or in offshore platforms.

Technical Data

Approvals

The Pneumatically Controlled, Remote Resetting Deluge System includes FM approved components.
The Deluge Valve has Lloyd's, DNV, and ABS Type Approvals for all sizes.

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711DX-03B01
Threaded	Grooved	716DX-03B01
Flanged	Flanged	733DX-03B01
Flanged	Grooved	736DX-03B01
Wafer	Wafer	799DX-03B01

"DX" can be replaced with "D" depends on the Automatic Water Control Valve series in use.
See bulletins F02-01-01 and F02-03-01. The above model numbers refer to fully trimmed valves. For basic trim replace "03" with "13".
(See also bulletin F01-03-01 for control trims "23" & "33"). For example: 799D-13B01 is a wafer type valve with a basic, remote resetting, pneumatically actuated trim.

Sizes

Threaded and Grooved Ends:
1½", 2", 2½", & 3" (40, 50, 65, &80 mm).
Flanged and Grooved Ends:
2", 2 ½", 3", 4", 6", 8", 10", & 12" (50, 65, 80, 100, 150, 200, 250, & 300 mm).
Wafer End:
3", 4", 6", 8", 10", & 12" (80, 100, 150, 200, 250, & 300 mm).

Manufacturer: MIL Valves

End Standards

Threaded End:
NThreaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 Class 150 & 300 ;
ISO 7005 - PN10, 16 & 25 ;
BS 10 tables D & E ;
AS 2129 tables D & E ;
JIS B 2212, 2213 & 2214.
Wafer End:
Fits most of the above standards.
Grooved End:
ANSI/AWWA C606-87.

Pressure Rating

Maximum working pressure*: 300 psi (21 bar).
For precise pilot line air pressure vs. water supply pressure see Graph (1) in bulletin F32-07-01 for Pneumatic Actuator model 286-08.

* Standard material valve.

Temperature

Water: Max. +1500F (+650C).

Installation Position

Vertical or horizontal.

Materials

Standard
Valve Housing:
Carbon steel (SAE 1021).
Valve Ends and Wafer Drain End:
Ductile Iron (ASTM A536 65-45-12).
Threaded, Flanged, and Grooved Drain Ends:
Carbon Steel (SAE 1020).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel , and Galvanized Steel.

Optional
Cast Steel ;
Bronze;
Nickel Aluminum Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel;
Titanium.

Coating

Standard
Powder epoxy coated. Thickness: 0.004” (0.1 mm) external and internal surfaces.

Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01” (0.3 mm).
Halar® coated. Thickness: 0.02” (0.5 mm) .

Halar® is a registered trade mark of Ausimont USA Inc

Control Trim

On standard, the control trim is supplied preassembled in sections. If self assembly is required, all the trim components are supplied in loose form.
The complete control trim includes the following components:

- 3 way Solenoid Valve.
- Pneumatic Actuator.
- Trim Shutoff valve and Drain Valve are quarter turn, ball valves.
- Y-Strainer with stainless steel screen.
- Alarm Test Valve - 3 way, L-port, quarter turn ball valve.
- Check Valve - spring loaded, soft seat.
- Supply Pressure Gauge with dual scale (psi and bar).
- Pressure Gauge Valve - 3 way, quarter turn ball valve.
- Drain Cup and Drain Tubes.
- Automatic Drain Valve.
- Emergency Release Station.

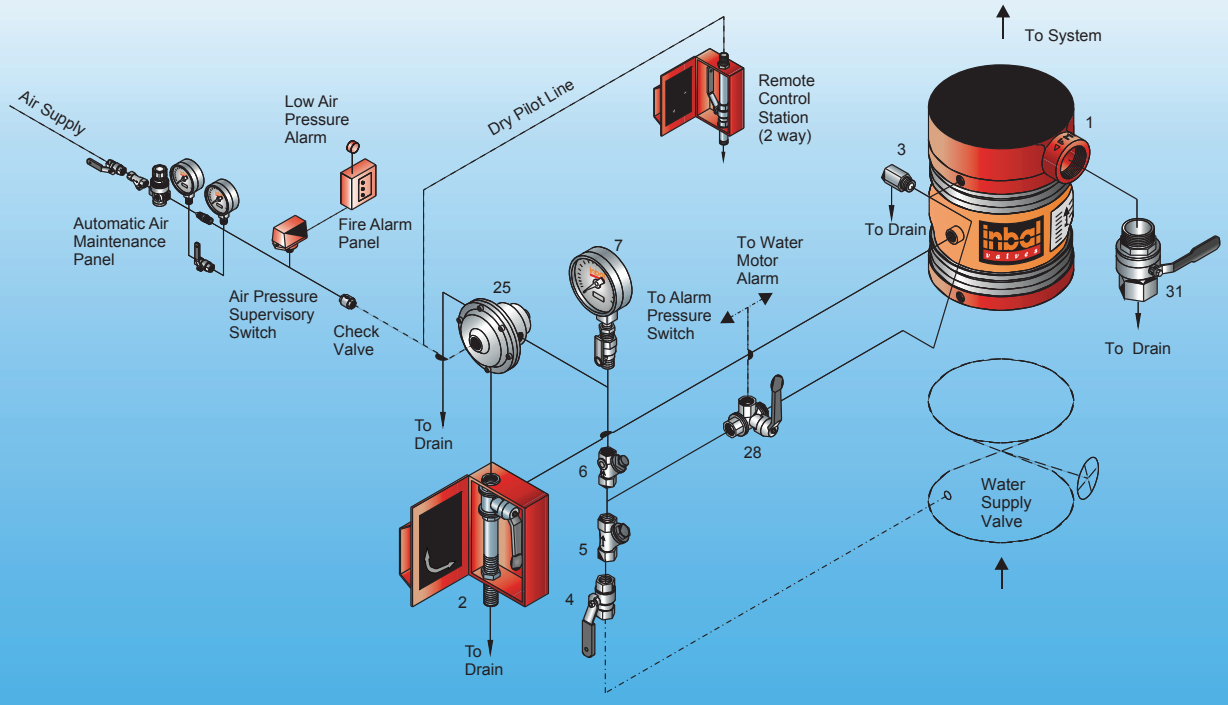
Features

- Pneumatically operated and reset by remote enables efficient control of the whole area.
- The same deluge valve can be operated by several remote control stations.
- No Moving Mechanical Parts (N.M.M.P.) construction ensures a long life of dependable operation, reducing the cost of maintenance.
- Quick, yet soft opening performanceeliminates water hammer and consequent damages.
- The line pressure is sufficient to close the Valve tightly. Can perform also, when water supply valve is not in use.
- Optional opening and/or closing speed control is available.
- Fast and easy reset - no need to approach the valve.
- Supplied as standard preassembled in sections - saves the self-assembly cost.
- Can be installed vertically or horizontally.
- Compact design - minimum space for valve and trim.
- Unique principle of operation prevents false operation due to water surges.
- Pressure rating of 300 psi (21 bar) for standard valve.
- Wide range of sizes for an ideal system design.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard - ensures excellent corrosion resistence.
- Variety of available materials - to ensure corrosion-free service even under severe conditions.
- Additional functions such as pressure control or another release system, could be added on the same valve body.

Operation

The Control Chamber of the Automatic Water Control Valve is the annular space between the valve Housing and the Sleeve. The valve is held in a closed position as long as the inlet pressure is maintained in the Control Chamber of the Valve.
The dry pilot line equipped with release valves is located in conveniently accessible areas, pressurized through an orifice with air or nitrogen and is connected to the valve control trim.
In the set position, the water pressure is applied to the Valve Control Chamber and to the Pneumatic Actuator from the upstream of the Water Supply Valve. The pressurized dry pilot line keeps the Pneumatic Actuator closed.
The Deluge Valve opens wide when any of the release valves located on the dry pilot line operate. This operation releases the air from the pneumatic actuator which opens to release the water from the Valve Control Chamber and simultaneously isolates the water supply from the Control Chamber. The Deluge Valve opens wide, introducing a flow of water to the system while activating the alarm devices. Water will flow from any open sprinklers and/or spray nozzles on the system. The valve remains in a wide open position until the Resetting procedure is followed.
The Emergency Release Valve is used for emergency actuation of the Deluge Valve and for routine testing.

Schematic Control Diagram – 700DX- 03B01



1 **Inbal** Automatic Water Control Valve
2 Emergency Release Station
3 Automatic Drain Valve
4 Trim Shutoff Valve
5 Y-Strainer
6 Check Valve
7 Supply Pressure Gauge
25 Pneumatic Actuator
28 Alarm Test Valve
31 Drain Valve

Installation

Refer to the Trim Chart according to the specific Deluge Valve model in use.

1. When the Deluge Valve is delivered, carefully unpack and check that there has been no damage to the operating components, piping, and fittings.
2. Always flush the pipelines before installing the Valve.
3. Place the Valve in the piping at the outlet of the Water Supply Valve.
   Verify that the arrow on the valve Housing matches the actual flow direction. Determine which side the system will be accessed from and locate the Valve on the piping system accordingly.
4. Install the Deluge Valve in the pipeline. Use gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the valve ends.
5. Complete the trim assembly by connecting the preassembled sections or assemble the trim if ordered in loose component form.
   Refer to the applicable Trim Chart and Installation Guide.
6. The pressure supply to the control trim must always be sourced from the inlet of the Water Supply Valve through a ½" pipe.
7. Connect the air supply through the Automatic Air Maintenance Panel to the release system and to the Pneumatic Actuator mounted on the valve trim. The air supply must be regulated and maintained automatically.
   It is recommended to preset the Automatic Air Maintenance Panel to maintain a constant air supply equal to the "minimum recommended pilot line pressure" as shown in Graph (1) in bulletin F32-07-01. The Air Pressure Supervisory Switch should be set to activate at a pressure drop of 5 psi (0.35 bar).
8. The air supply must be restricted to ensure that the automatic air supply cannot replace air as fast as it escapes when a sprinkler operates.
9. The Remote Emergency Release Station should be installed by a tee to the dry pilot line in an accessible location. The piping to the Emergency Release Station should be securely mounted at a recommended height above ground level between 4½ and 5½ ft. (140 and 170 cm).
10. Set the Deluge Valve by following the Resetting procedure.
11. Test the Valve, the trim, and the alarms according to the Testing procedure.

Resetting

The Deluge valve system must be reset and restored to service as soon as possible after automatic, emergency, or manual actuation.

1. After operation, close the Remote Control Valve. The Deluge Valve will close drip tight. Verify that the Pressure Supervisory Switch, Low Air Pressure Alarm, and water flow alarms are reset. Verify that the supply pressure has been restored to the normal level.
2. After a manual emergency operation - close the Emergency Release Valve.
   The Deluge Valve will close drip tight and water flow alarms are reset. Verify that the supply pressure has been restored to the normal level.
   In either one of the operations exercised, the system piping should drained.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Deluge Valve and related equipment are in good operating condition. The inspection and testing activities should be done according to NFPA Standards, the guidelines and regulations of the authorities having jurisdiction, and the following instructions. It is recommended that the Deluge Valve be tested, operated, cleaned, and inspected at least on a routine basis.

Inspection

A *weekly* Inspection is recommended:

1. Verify that the Water Supply Valve is sealed in a fully open position.
2. Verify that the required water and air pressures are being applied to the Deluge Valve inlet, the trim, and to the Pneumatic Actuator.
3. Verify that the Trim Shutoff Valve, Alarm Test Valve, Emergency Release Valve, Pressure Gauge Valve, and Drain Valve (if in use) are in set position.
4. The Supply and air Pressure Gauges should be checked for accuracy.
5. Visually inspect for broken or missing parts, or other evidence of impaired protection.

Strainer Cleaning

A quarterly Strainer Cleaning is recommended:

1. Close the Trim Shutoff Valve.
2. Remove the covers of the trim and alarm Y-Strainers. Clean if necessary.
3. Open the Trim Shutoff Valve.

Alarm Testing

A *quarterly* Alarm Testing is recommended:

Water Flow Alarm

1. Test the Water Motor Alarm or Alarm Pressure Switch by opening the Alarm Test Valve.
2. Water Motor Alarm should be audible. Alarm Pressure Switch should activate. Verify that remote alarm signals are properly received.
3. Close the Alarm Test Valve. All local alarms stop sounding and pressure switch is reset. All remote station alarms reset.
4. Verify that supply piping to alarm drains properly.

Low Air Pressure Alarm

1. Close the Water Supply Valve.
2. Partially open the release valve on the pneumatic pilot system to reduce the pressure to the predetermined alarm level (but not below that level as this may inadvertently activate Deluge Trim Testing).
3. Verify that the Low Air Pressure Alarm operates properly.
4. Close the inspector's test valve. Verify that normal pneumatic pressure is restored and that the Low Air Pressure Alarm and Air Pressure Supervisory Switch are reset.
5. Open the Water Supply Valve.

Deluge Trim Testing

A *semi-annual* Deluge Trim Testing is recommended. Testing of the control trim is conducted with no flow of water to the system.

1. Close the Water Supply Valve installed in the inlet of the Deluge Valve.
2. Open the Remote Release Valve.
   Verify that water is drained from the deluge trim which simulates an open position of the Deluge Valve. The Low Air Pressure Alarm should operate.
3. Reset the valve by following the Resetting procedure.
4. Open the Water Supply Valve.

Trip Testing

An annual Trip Testing is recommended.

Performing the Trip Testing will cause water to flow from all open sprinklers and/or nozzles. Prevent damage by taking the necessary precautions.

1. Trip the Deluge Valve to open by actuation of either:
   a) Remote Release valve
   b) Emergency Release Valve.

All the water in the Valve Control Chamber is allowed to vent to the atmosphere. The Deluge Valve will open and water will flow to the system.

2. All the alarms should operate. Verify that the whole system is working properly.
3. Reset the system by performing the instructions in Resetting.
4. Verify that water supply pressure and air pressure have been restored to the normal level.

Removal

To remove the Deluge Valve:

1. Close all the pressure supply valves:
   a) Water Supply Valve.
   b) Trim Shutoff Valve.
   c) Air supply valve.
2. Open the Emergency Release Valve to release the water pressure from the Valve Control Chamber.
3. Open the Drain Valve to allow all the water to drain.
4. Disconnect the union and remove the trim from the valve.
5. Remove the Valve from the line for inspection.
6. To reinstall, follow the Installation procedure section (use new gaskets for flanged or wafer valve).

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Deluge Valve, Hydraulic Actuation Series 700D/DX

doc. nr. A02009A 19_07_2017

Model 799D- 03A01

General description

The Remote Resetting Hydraulically Actuated Deluge Valve is specifically designed for use in fire protection systems actuated by a remote resetting, hydraulic release system. The Automatic Water Control Valve used in this deluge system is a pressure operated, sleeve actuated, axial valve designed for use in fire protection systems.
The Remote Resetting, Hydraulically Actuated Deluge Valve is primarily used for manual operation. The wet pilot line, which is pressurized with water, is equipped with remote release valves. When one or more of the remote release valves is manually actuated, the wet pilot line pressure drops and the Deluge Valve opens to allow water to flow from all open sprinklers and/or nozzles on the system.
The Hydraulically Actuated Deluge Valve is used for local and/or 2 way or 3 way remote operations. The Hydraulic Actuator enables remote hydraulic control with low pressure. The Deluge Valve with Hydraulic Actuator model 284-08 closes, and could be held closed, with approximately 50 psi (3.5 bar) remote control pressure up to 300 psi (21 bar) line pressure.
However, in installation with exceptional long distance pilot lines or if the remote control valve is located in considerable higher altitude than the Valve and the residual pressure in the pilot line, when the Valve is activated to open, is higher than 25 psi (1.7 bar), an adjustable Hydraulic Actuator model 288-08 should be used.
After operation, the Deluge Valve can be hydraulically reset by remote, saving the need to approach the valve for resetting.
The control trim includes all the actuators, accessories, fittings, and pressure gauge to provide for proper operation, either at vertical or horizontal installation. The series 700DX-03A includes a Drain Valve installed in the Drain End.
The standard material Deluge Valves are rated to 300 psi (21 bar) working pressure and are available in sizes 1½" (40 mm) to 12" (300 mm). The valves have threaded, flanged, or wafer inlet ends and threaded flanged, grooved, or wafer outlet ends.
The only moving part in the Deluge Valve, when it operates, is the reinforced sleeve which forms a driptight seal with the corrosion resistant core. It has a smooth opening to prevent any water hammer in the piping system.
The unique design and variety of materials and coatings make the Deluge Valve suitable for use with brackish or sea water similar to those found in chemical and petrochemical facilities or in offshore platforms.

Technical Data

Approvals

The Hydraulically Controlled, Remote Resetting Deluge System includes FM approved components.
The Deluge Valve has Lloyd's, DNV, and ABS Type Approvals for all sizes.

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711DX-03A01
Threaded	Grooved	716DX-03A01
Flanged	Flanged	733DX-03A01
Flanged	Grooved	736DX-03A01
Wafer	Wafer	799DX-03A01

"1" can be replaced with "2", "3", or "4" ;
"1" - 3 way remote operation, non-adjustable ;
"2" - 2 way remote operation, non-adjustable ;
"3" - 3 way remote operation, adjustable ;
"4" - 2 way remote operation, adjustable.

"DX" can be replaced with "D" depends on the Automatic Water Control Valve series in use. See bulletins F02-01-01 and F02-03-01. The above model numbers refer to fully trimmed valves. For basic trim replace "03" with "13". (See also bulletin F01-03-01 for control trims "23" & "33"). For example: 711D-13A01 is a threaded ends valve with a basic, remote resetting, 3 way, non-adjustable, hydraulically actuated trim.

Sizes

Threaded and Grooved Ends:
1½", 2", 2½", & 3" (40, 50, 65, & 80mm).
Flanged and Grooved Ends:
2", 2 ½", 3", 4", 6", 8", 10", & 12" (50, 65, 80, 100, 150, 200, 250, & 300 mm).
Wafer End:
3", 4", 6", 8", 10", & 12" (80, 100, 150, 200, 250, & 300 mm).

Manufacturer: MIL Valves

Deluge Valve, Hydraulic Actuation Series 700D/DX

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End Standards
Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN10, 16 & 25 ;
BS 10 tables D & E ;
AS 2129 tables D & E ;
JIS B 2212, 2213 & 2214.
Wafer End:
Fits most of the above standards.
Grooved End:
ANSI/AWWA C606-87.

Pressure Rating
Maximum working pressure*: 300 psi (21 bar).

* Standard material valve.

Temperature Range
Water: Max. +1500F (+650C).

Installation Position
Vertical or horizontal.

Materials
Standard
Valve Housing:
Carbon steel (SAE 1021).
Valve Ends and Wafer Drain End:
Ductile Iron (ASTM A536 65-45-12).
Threaded, Flanged, and Grooved Drain Ends:
Carbon Steel (SAE 1020).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel, and Galvanized Steel.

Optional
Cast Steel ;
Bronze ;
Nickel Aluminum Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

Coating
Standard
Powder epoxy coated. Thickness: 0.004" (0.1 mm) external and internal surfaces.

Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01" (0.3 mm).
Halar® coated. Thickness: 0.02" (0.5 mm).

Halar® is a registered trade mark of Ausimont USA Inc

Control Trim
On standard, the control trim is supplied preassembled in sections. If self assembly is required, all the trim components are supplied in loose form.
The complete control trim includes the following components:
- Hydraulic Actuator.
- Trim Shutoff valve and Drain Valve are quarter turn, ball valves.
- Y-Strainer with stainless steel screen.
- Alarm Test Valve - 3 way, L-port, quarter turn ball valve.
- Check Valve - spring loaded, soft seat.
- Supply Pressure Gauge with dual scale (psi and bar).
- Pressure Gauge Valve - 3 way, quarter turn ball valve.
- Drain Cup and Drain Tubes.
- Automatic Drain Valve.
- Emergency Release Stations.

Features
- Hydraulically operated and reset by remote enables efficient control of the whole area.
- The same deluge valve can be operated by several remote control stations.
- No Moving Mechanical Parts (N.M.M.P.) construction ensures a long life of dependable operation, reducing the cost of maintenance.
- Quick, yet soft opening performanceeliminates water hammer and consequent damages.
- The line pressure is sufficient to close the Valve tightly. Can perform also, when water supply valve is not in use.
- Optional opening and/or closing speed control is available.
- Fast and easy reset - no need to approach the valve.
- Supplied as standard preassembled in sections - saves the self assembly cost.
- Can be installed vertically or horizontally.
- Compact design - minimum space for valve and trim.
- Unique principle of operation prevents false operation due to water surges.
- Pressure rating of 300 psi (21 bar) for standard material valve.
- Wide range of sizes for an ideal system design.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard - ensures excellent corrosion resistence.
- Variety of available materials - to ensure corrosion-free service even under severe conditions.
- Additional functions such as pressure control or another release system, could be added on the same valve body.

Operation
The Control Chamber of the Automatic Water Control Valve is the annular space between the valve Housing and the Sleeve. The valve is held in a closed position as long as the inlet pressure is maintained in the Control Chamber of the Valve.
The wet pilot line equipped with release valves is located in conveniently accessible areas, and is pressurized with water either from the control trim through an orifice (2-way remote control system) or independently by the supply system with a tube connected to the control trim (3-way remote control system).
In the set position, the water pressure is applied to the Valve Control Chamber and to the Hydraulic Actuator from the upstream of the Water Supply Valve. The pressurized dry pilot line keeps the Hydraulic Actuator closed.
The Deluge Valve opens wide when any of the release valves located on the wet pilot line operates. This operation releases the water pressure from the Hydraulic Actuator diaphragm which opens to release the water from the Valve Control Chamber and simultaneously isolates the water supply from the Control Chamber. The Deluge Valve opens wide, introducing a flow of water to the system while activating the alarm devices. Water will flow from any open sprinklers and/or spray nozzles on the system. The valve remains in a wide open position until the Resetting procedure is followed.
The Emergency Release Valve is used for emergency actuation of the Deluge Valve and for routine testing.

Installation

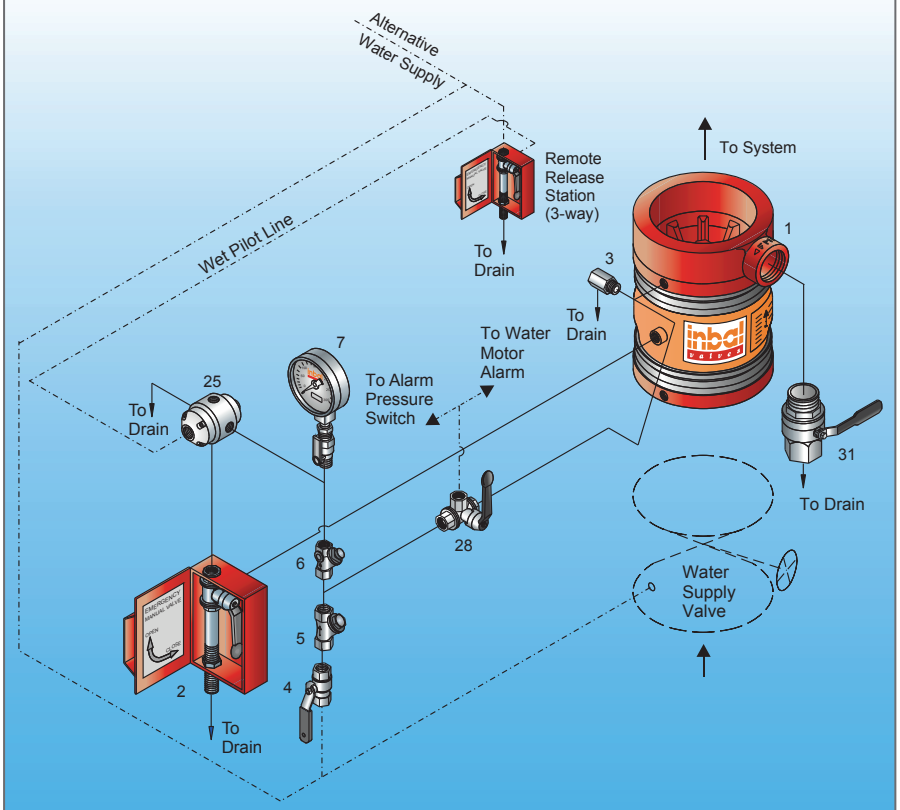
Refer to the Trim Chart according to the specific Deluge Valve model in use.

1. When the Deluge Valve is delivered, carefully unpack and check that there has been no damage to the operating components, piping, and fittings.
2. Always flush the pipelines before installing the Valve.
3. Place the Valve in the piping at the outlet of the Water Supply Valve.
   Verify that the arrow on the valve Housing matches the actual flow direction. Determine which side the system will be accessed from and locate the Valve on the piping system accordingly.
4. Install the Deluge Valve in the pipeline. Use gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the valve ends.
5. Complete the trim assembly by connecting the preassembled sections, or assemble the trim if ordered in loose component form.
   Refer to the applicable Trim Chart and Installation Guide.
6. The water pressure supply to the control trim must always be sourced from the inlet of the Water Supply Valve through a ½" pipe.
7. For 2-way remote control systems: Connect the pilot line to the control trim. The trim includes a restriction to ensure that the water pressure in the wet pilot line drops sufficiently in case of release valve operation.
   For 3-way remote control systems: Connect the 3-way release valve to a constant water pressure source. The pilot line connects the control trim and the release valve. If more than a single remote control valve is used, the water pressure source(s) should be restricted.
   See Graph (1) in bulletin F32-06-01 for the minimum hydraulic control pressure required to hold the Valve closed and for the maximum residual control pressure still allowed to ensure smooth opening.
8. The Remote Emergency Release Stations should be installed in accessible locations. The piping to the Emergency Release Station should be securely mounted at a recommended height above ground level between 4½ and 5½ ft. (140 and 170 cm.).
9. Set the Deluge Valve by following the Resetting procedure.
10. Test the Valve, the trim, and the alarms according to the Testing procedure.

Resetting

The Deluge valve system must be reset and restored to service as soon as possible after automatic, emergency, or manual actuation.

Schematic Control Diagram – 700DX-03A01/03



1 **Inbal** Automatic Water Control Valve
2 Emergency Release Station
3 Automatic Drain Valve
4 Trim Shutoff Valve
5 Y-Strainer
6 Check Valve
7 Supply Pressure Gauge
25 Hydraulic Actuator
28 Alarm Test Valve
31 Drain Valve

1. After operation, close the Remote Control Valve. The Deluge Valve will close drip tight and water flow alarms are reset. Verify that the supply pressure has been restored to the normal level.
2. After a manual emergency operation - close the Emergency Release Valve.
   The Deluge Valve will close drip tight and water flow alarms are reset. Verify that the supply pressure has been restored to the normal level. In either one of the operations exercised, the system piping should be drained.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Deluge Valve and related equipment are in good operating condition. The inspection and testing activities should be done according to NFPA Standards, the guidelines and regulations of the authorities having jurisdiction, and the following instructions. It is recommended that the Deluge Valve be tested, operated, cleaned, and inspected at least on a routine basis.

Inspection

A *weekly* Inspection is recommended:

1. Verify that the Water Supply Valve is sealed in a fully open position.
2. Verify that the required water pressure is being applied to the Deluge Valve inlet, the trim, and to the Hydraulic Actuator.
3. Verify that the Trim Shutoff Valve, Emergency Release Valve, Pressure Gauge Valve, Hydraulic Actuator, and Drain Valve (if in use) are in set position.
4. The Supply Pressure Gauge should be checked for accuracy.
5. Visually inspect for broken or missing parts, or other evidence of impaired protection.

Deluge Valve, Hydraulic Actuation Series 700D/DX

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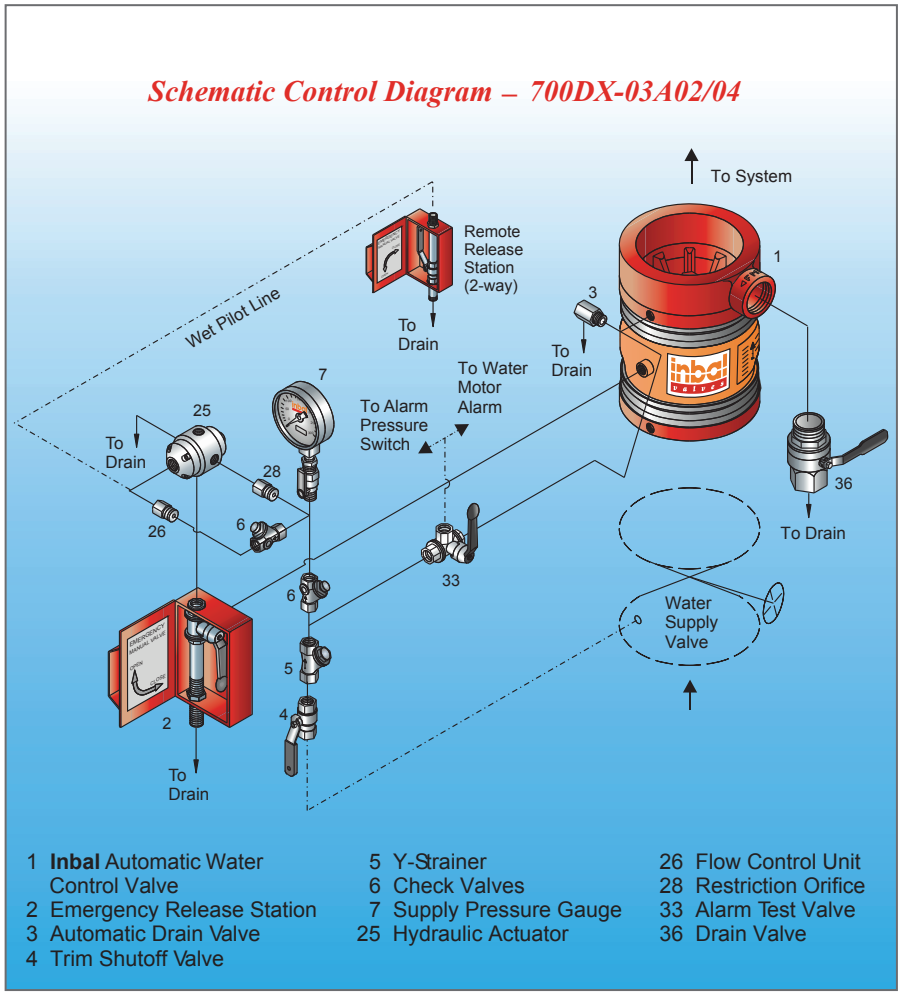

Strainer Cleaning
A *quarterly* Strainer Cleaning is recommended:
1. Close the Trim Shutoff Valve.
2. Remove the covers of the trim and alarm Y-Strainers. Clean if necessary.
3. Open the Trim Shutoff Valve.

Alarm Testing
A quarterly Alarm Testing is recommended:
1. Test the Water Motor Alarm or Alarm Pressure Switch by opening the Alarm Test Valve.
2. Water Motor Alarm should be audible. Alarm Pressure Switch should activate. Verify that remote alarm signals are properly received.
3. Close the Alarm Test Valve. All local alarms stop sounding and pressure switch is reset. All remote station alarms reset.
4. Verify that supply piping to alarm drains properly.

Deluge Trim Testing
A *semi-annual* Deluge Trim Testing is recommended. Testing of the control trim is conducted with no flow of water to the system.
1. Close the Water Supply Valve installed in the inlet of the Deluge Valve.
2. Open the Remote Release Valve. Verify that water is drained from the deluge trim which simulates an open position of the Deluge Valve.
3. Reset the valve by following the Resetting procedure.
4. Open the Water Supply Valve.

Trip Testing
An *annual* Trip Testing is recommended. Performing the Trip Testing will cause water to flow from all open sprin- klers and/or nozzles. Prevent damage by taking the necessary precautions.
1. Trip the Deluge Valve to open by actuation of either:
   a) Remote Release valve
   b) Emergency Release Valve.
   All the water in the Valve Control Chamber is allowed to vent to the atmosphere. The Deluge Valve will open and water will flow to the system.
2. All the water flow alarms should operate. Verify that the whole system is working properly.
3. Reset the system by performing the instructions in Resetting.
4. Verify that water supply pressure and air pressure have been restored to the normal level.

Removal
To remove the Deluge Valve:
1. Close all the pressure supply valves:
   a) Water Supply Valve.
   b) Trim Shutoff Valve.
2. Open the Emergency Release Valve to release the water pressure from the Valve Control Chamber.
3. Open the Drain Valve to allow all the water to drain.
4. Disconnect the union and remove the trim from the valve.
5. Remove the Valve from the line for inspection.
6. To reinstall, follow the Installation procedure section (use new gaskets for flanged or wafer valve).

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Preaction Systems

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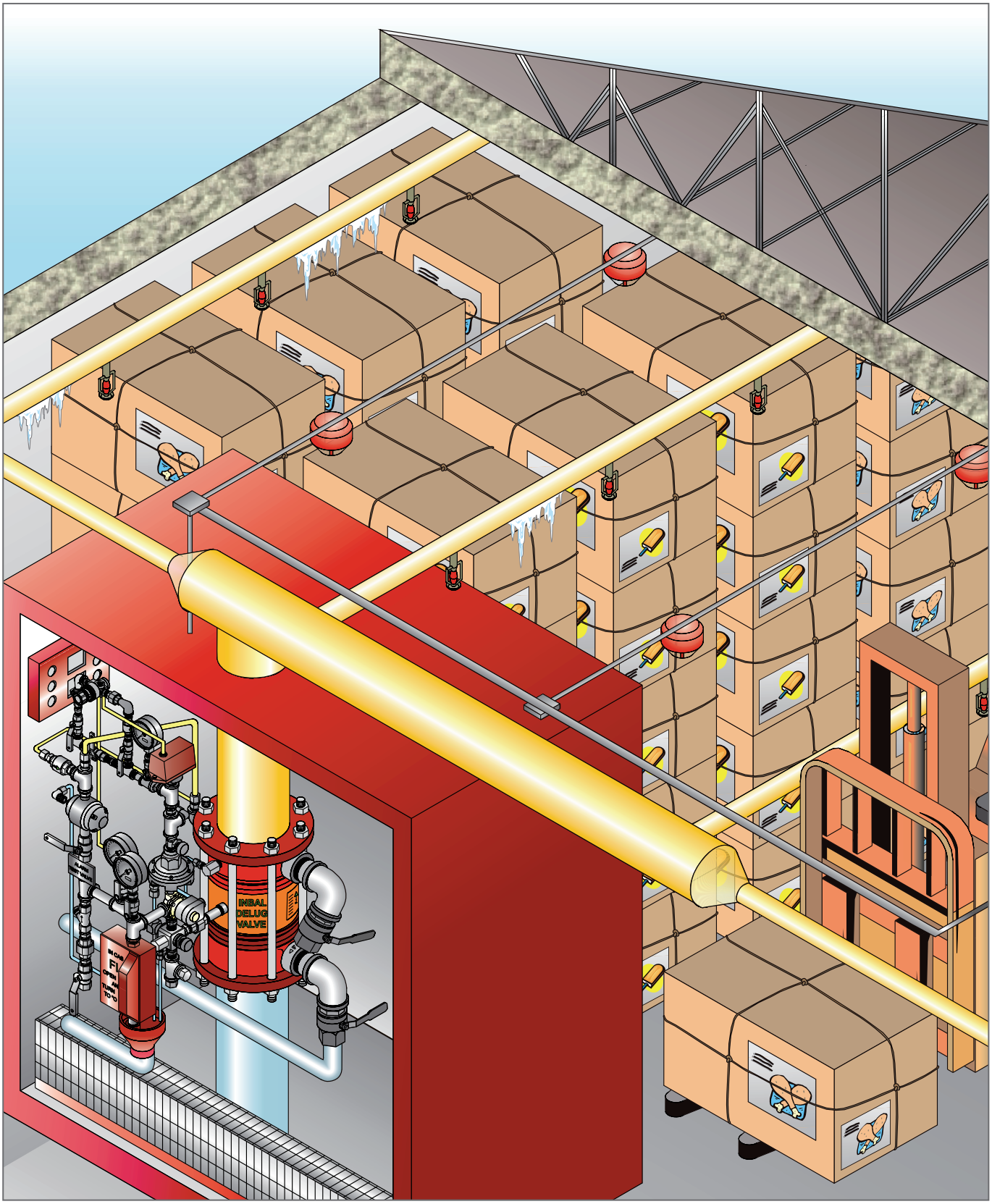

A02

A preaction system employs a piping system with closed sprinklers pressurized with supervisory air or gas pressure.
The water supply is held back by means of a preaction valve.
The system is equipped with a supplemental detection system, whose function varies depending on the type of preaction system. The types of detection - release systems most commonly used are pneumatic and electrical actuation.
Hydraulic detection - release systems are much less in use since preaction systems are often used in freezing areas.
The supervisory air / gas pressure maintained in the sprinkler piping system is used to monitor the integrity of the pipe. If the pipe develops a leak or a sprinkler head is broken, the air pressure is reduced and an alarm is given to indicate a low air pressure condition in the sprinkler piping system.
Preaction systems are used where it is important to prevent an accidental discharge of water, when an alarm is desired in advance of sprinkler operation, or when it is desired to reduce the water delivery delay inherent in a dry pipe system.
Preaction systems operate in several types of actuation and perform a variety of functions.
Inbal Preaction Systems are available in the following configurations:
Non-Interlock Type - Utilizes a dry pipe valve and a supplemental pneumatic or electric detection - release system. The valve may be opened either by operation of a sprinkler in the sprinkler piping or by operation of the detection - release system. If the release system does not operate, the sprinkler piping system will operate as a dry pipe valve. Fusing of an automatic sprinkler on the piping system operates the valve to open and water will be discharged from any sprinkler(s) that have operated. If the detection - release system operates, the valve is opened to allow water to flow into the sprinkler piping in readiness for possible subsequent operation of the sprinkler piping system to be discharged immediately. In large dry pipe systems, the disadvantage of delayed action due to the large volume of air contained in the piping system is eliminated with this non-interlocked preaction system.
Single Interlock Type - Utilizes a deluge valve and a supervisory air pressure system. Loss of air in the sprinkler piping system due to damaged piping or broken sprinklers will not cause water to flow through the deluge valve and into the system; it will merely operate the alarm systems. The valve will open only if the electric or pneumatic detection system operates. The single interlocked preaction system is typically used in environments that house computers or communication equipment, museums, libraries, and other facilities where inadvertent water discharge is a major concern.
Double Interlock Type - Utilizes an automatic water control valve, an electric or pneumatic detection - release system, and a pressurized (air or gas) sprinkler piping system. Only operation of both detection - release and sprinkler piping systems will allow water to enter the sprinkler system and be discharged through the fused sprinkler(s). Operation of only a single system (either the detection - release system or the sprinkler piping system) will merely activate the alarm, but the valve will not open. The double interlocked preaction system is most common in deep freeze facilities where accidental valve operation may result in the freezing of the pipe in a matter of minutes.

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Preaction Valve, Single Interlock Series 700D/DG/DX

doc. nr. A02011A 19_07_2017

General description

The Electrically Actuated, Single Interlocked, Preaction Valve utilizes an Deluge Valve with an electric detection and release system. The sprinkler piping system is effectively supervised by pneumatic pressure. Loss of the supervising pneumatic pressure due to a damaged sprinkler or pipe line system will not cause water to flow through the Valve into the piping system; it will merely activate the low air alarm. The electric system consists of heat, smoke, or flame detectors, a control (fire alarm & releasing) panel, and a solenoid valve. The Automatic Water Control Valve, used in this preaction system, is a pressure operated, sleeve actuated, axial valve designed for use in fire protection systems.
The Preaction Valve is used for automatic or manual operation. When one (or two-if electrically arranged in such a pattern) detector senses the presence of fire and operates, the control panel activates the alarm devices and energizes the Solenoid Valve to open, causing the Preaction Valve to open. Water will flow into the sprinkler piping in readiness for possible subsequent opening of one or more sprinklers. Upon fusing of one or more sprinklers, water will start to spray instantaneously, thus the delay caused by a pipe filling is eliminated. As soon as the releasing system and the sprinkler piping are reset, the Single Interlocked, Preaction Valve resetting is merely done by activating the reset knob.

The control trim includes pilot valves, actuators, accessories, fittings, and gauges to provide for proper operation in either vertical or horizontal installation.
The standard material Preaction Valve is rated to 300 psi (21 bar), but due to the Solenoid Valve's lower pressure rating it is limited to 175 psi (12 bar). It is available in sizes 1½" (40 mm) to 12" (300 mm) with threaded, flanged, grooved, or wafer inlet and outlet ends.
The only moving part in the Automatic Water Control Valve, when it operates, is the reinforced sleeve which forms a drip-tight seal with the corrosion resistant core. It has a smooth opening to prevent any water hammer in the piping system.
The unique design and variety of materials and coatings make the Single Interlocked Preaction Valve dependable for prolonged periods of service, unaffected by various water qualities.

Technical Data

Approvals

The Electrically Controlled Single Interlocked Preaction System consists of an Deluge Valve which is FM Approved in sizes 3", 4", 6", and 8" (80, 100, 150, and 200 mm) to 175 psi (12 bar) and a hydraulic Actuator which is also FM Approved.
Inbal Valves have Lloyd's , DNV, and ABS Type Approvals for all sizes.

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711DG-04I01
Threaded	Grooved	716DG-04I01
Flanged	Flanged	733DG-04I01
Flanged	Grooved	736DG-04I01
Grooved	Grooved	766DG-04I01
Wafer	Wafer	799DG-04I01

"DG" can be replaced with "D" or "DX" depends on the Automatic Water Control Valve series in use. See bulletins F02-01-01, F02-02-01, and F02-03-01.
The above model numbers refer to fully trimmed valves. For basic trim replace "04" with "14". For example: 799D-14I is a wafer type valve with basic electrically actuated, single interlocked, preaction trim.

Sizes

Threaded End:
1½", 2", 2½", & 3" (40, 50, 65, & 80 mm).
Flanged and Grooved Ends:
1½", 2", 2½", 3", 4", 6", 8", 10", & 12" (40, 50, 65, 80, 100, 150, 200, 250, & 300 mm).
Wafer End:
3", 4", 6", 8", 10", & 12" (80, 100, 150, 200, 250, & 300 mm).

Manufacturer: MIL Valves

End Standards
Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN10, 16 & 25 ;
BS 10 Table D & E ;
AS 2129 Table D & E ;
Jis B 2212, 2213, 2214.
Wafer End:
Fits most of the above standards.
Grooved End:
ANSI/AWWA C606-87.

Pressure Rating
Maximum working pressure: 175 psi (12 bar). Higher working pressure is available depends on the specific solenoid valve in use.

Temperature Range
Water: Max. +1500F (+650C).

Installation Position
Vertical or horizontal.

Solenoid Valve
Standard
2-way, normally closed, 24 V DC, model 157-42 or 157-52. See bulletin F30-11-01.
Optional
Energized to open, energized to close, and magnetic latch (impulse) types in various voltages, frequencies, enclosures, and pressure ratings. See bulletins F30-10-01 and F30-12-01.

Materials
Standard
Valve Housing:
Forged Steel (SAE 1021).
Valve Ends and Wafer Flow Test & Drain Ends:
Ductile Iron (ASTM A536 65-45-12).
Threaded, Flanged, and Grooved Flow Test & Drain Ends:
Carbon Steel (SAE 1020).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel, and Galvanized Steel.
Optional
Cast Steel ;
Bronze ;
Nickel Aluminium Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

Coating
Standard
Powder epoxy coated. Thickness: 0.004" (0.1 mm) external and internal surfaces.
Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01" (0.3 mm).
Halar® coated. Thickness: 0.02" (0.5 mm)

Control Trim
On standard, the control trim is supplied preassembled in sections. If self assembly is required, all the trim components are supplied in loose form.
See the applicable Trim Chart for complete components list.

Features
- The unique design eliminates the need for a check valve
- No Moving Mechanical Parts (N.M.M.P.) construction ensures a long life of dependable operation, reducing the cost of maintenance.
- Quick, yet soft opening performance - eliminates water hammer and consequent damages.
- Optional opening and/or closing speed control is available.
- Fast and easy reset by thumb activated knob.
- Supplied as standard preassembled in sections - saves the self assembly cost.
- Can be installed vertically or horizontally.
- Compact design - minimum space for valve and trim.
- Unique principle of operation prevents false operation due to water surges.
- Pressure rating to 300 psi (21 bar) provided compatible solenoid valve is used.
- Wide selection of solenoid valves to meet various requirements for type of operation, voltage, frequency, protection and enclosure.
- Wide range of sizes for an ideal system design.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard - ensures excellent corrosion resistence.
- Variety of available materials - to ensure corrosion-free service even under severe conditions.

Operation
The Control Chamber of the Automatic Water Control Valve is the annular space between the valve Housing and the Sleeve. The valve is held in a closed position as long as inlet pressure is maintained in the Control Chamber.

The electric actuation trim consists of a Solenoid Valve connected to the wet pilot line and is controlled by the detection system and the control (Fire Alarm & Releasing) panel.
In the set position, the water pressure is applied to the Control Chamber of the Valve and to the Solenoid Valve from the upstream of the Water Supply Valve. The de-energized Solenoid Valve is closed. Consequently, the Valve stays closed, keeping the piping system dry.
When the detection system operates, the Fire Alarm & Releasing Panel activates an alarm and energizes the Solenoid Valve to open. Pressure in the Valve Control Chamber is released. The Valve opens to allow water to flow into the piping system and to the Alarm Pressure Switch and/or Water Motor Alarm. When a sprinkler head opens, water will flow from the system.
The operation of the Preaction Valve and the flow released from the Control Chamber activate the Flow Release Pilot (F.R.P.) to latch in an open position, isolating the Control Chamber from the inlet water supply. The F.R.P. operation prevents the Deluge Valve from closing even if the open releasing device closes. The Valve will close only when the Resetting procedure is followed.
If a sprinkler in the piping system opens prior to operation of the electric release system or if a sprinkler on the pipe line is damaged, the supervisory pressure in the sprinkler piping is lost, Low Air Pressure Alarm sounds, but the Valve stays closed.
The Emergency Release Valve is used for emergency actuation of the Preaction Valve and for routine testing.

Installation
Refer to the Trim Chart applicable to the specific Single Interlocked, Preaction Valve model in use.
1. When the Single Interlocked Preaction Valve is delivered, carefully unpack and visually check that there has been no damage to the operating components, piping and fittings.
2. Always flush the pipelines before installing the Valve.
3. Place the Valve in the piping at the outlet of the Water Supply Valve. Verify that the arrow on the valve Housing matches the actual flow direction. Determine which side the system will be accessed from and locate the Valve accordingly.
4. Install the Valve in the pipeline. Use gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the valve ends.

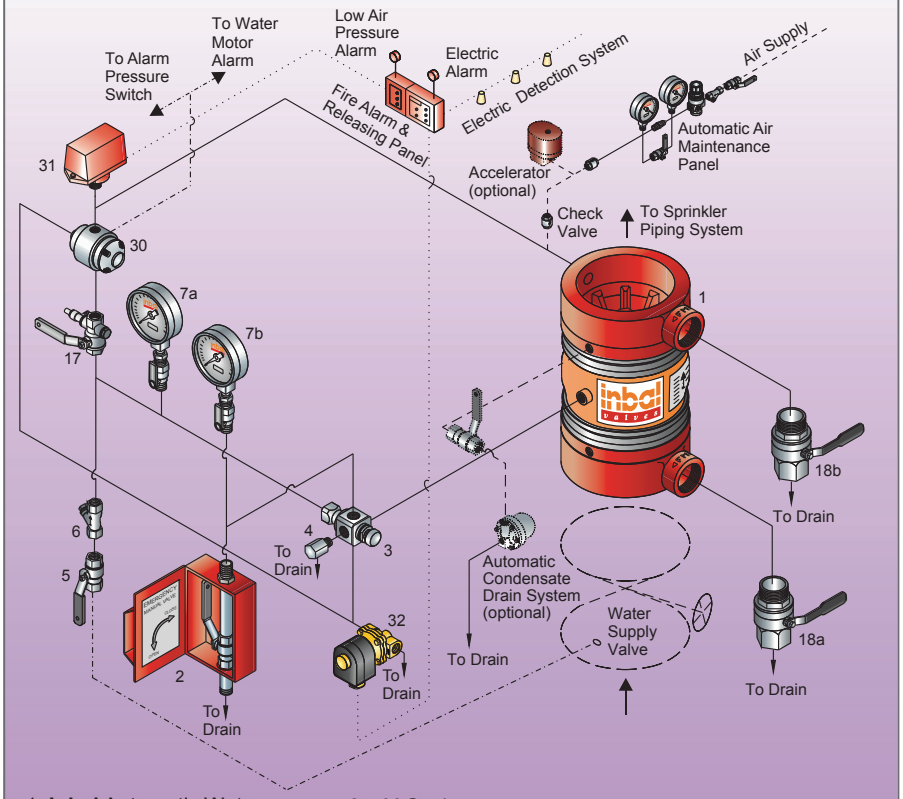
5. Complete the trim assembly by connecting the preassembled sections, or assemble the trim if ordered in loose component form. Refer to the applicable Trim Chart and Installation Guide.
6. The water pressure supply to the control trim must always be sourced from the inlet of the system's Water Supply Valve through a ½" pipe.
7. Assemble the Solenoid Valve according to the drawing, the applicable bulletin of the Solenoid Valve, and direction of flow. The Solenoid Valve must be wired in accordance with the requirements of the authorities having jurisdiction and/or NEC, IEC, or CENELEC standards and codes. Wiring should be done by a licensed electrician.
8. Connect the air supply through the Automatic Air Maintenance Panel to the sprinklers piping system. The air supply must be regulated and maintained automatically. It is recommended to preset the Automatic Air Maintenance Panel to maintain a constant air supply of 15 psi (1.0 bar). The Air Pressure Supervisory Switch should be set to activate at a pressure drop of 5 psi (0.35 bar).
9. The air supply must be restricted to ensure that the automatic air supply cannot replace air as fast as it escapes when a sprinkler operates.
10. It is recommended to install an inspector's test valve on the sprinkler piping system. The inspector's test valve is a locked closed ball valve with an outlet end orifice equivalent to the smallest orifice of releasing device provided on the system .The inspector's test valve may be used to verify adequate loss of air pressure when the sprinkler piping system operates.
11. Set the Single Interlocked Preaction Valve by following the Resetting procedure.
12. Test the Valve, the trim, and the alarm according to the Testing procedure.

Resetting

The Single Interlocked Preaction Valve must be reset and restored to service as soon as possible after automatic, emergency, or manual actuation.

1. Close the Water Supply Valve. The water flow alarms are reset.
2. Close the Trim Shutoff Valve.
3. Close the air supply valve.
4. De-energize the Solenoid Valve by resetting the detection system and the Fire Alarm Releasing panel. Verify that the Solenoid Valve is in a closed position and the Electric Alarm is reset.
5. Open the Flow Test Valve, Drain Valve, and the Drain Cock on the Alarm Test Valve, allowing all the water to drain.

Schematic Control Diagram – 700DG-04I01



1 **Inbal** Automatic Water Control Valve
2 Emergency Release Station
3 Flow Release Pilot (F.R.P.)
4 Automatic Drain Valve
5 Trim Shutoff Valve
6 Y-Strainer
7a Supply Pressure Gauge
7b System Pressure Gauge
17 Alarm Test Valve
18a Flow Test Valve
18b Drain Valve
30 Hydraulic Actuator
31 Air Pressure Supervisory Switch
32 Solenoid Valve

6. Inspect and replace any sprinklers that have operated, been damaged, or been exposed to fire conditions.
7. Inspect the trim and alarm YStrainers. Clean if necessary.
8. Verify that the Emergency Release Valve is in a closed position.
9. Close the inspector's test valve if it was in operation.
10. Open the Trim Shutoff Valve. Push and hold the reset knob on the Flow Release Pilot Pilot (F.R.P) and allow water pressure to build up in the trim and in the Valve Control Chamber. Verify that the pressure readings on both pressure gauges are equal.
11. Release the reset knob on the Flow Release Pilot.
12. Close the Drain Cock on the Alarm Test Valve.
13. Slightly open the Water Supply Valve, allow the air that might be trapped in the section of pipe between the Valve and the Water Supply Valve to escape through the Flow Test Valve.
14. Close the Flow Test Valve.
15. Fully open the Water Supply Valve. Verify that there is no flow from the Drain Valve, downstream of the Valve.
16. Close the Drain Valve .
17. Open the air supply to fill the sprinkler piping system with air/gas. Use the air by-pass valve in the Automatic Air Maintenance Panel to accelerate the filling rate. Verify that the Supervisory Pressure Switch and Low Air Pressure Alarm are reset

Maintenance, Inspection, & Testing

It is recommended that periodic inspection and tests be conducted by qualified personnel to ensure that the Single Interlocked Preaction Valve and related equipment are in good operating condition. The inspection and testing activities should be done according to NFPA Standards, the guidelines and regulations of the authorities having jurisdiction, and the following instructions. It is recommended that the Valve be tested, operated, cleaned, and inspected at least on a routine basis.

A02

Inspection

A weekly Inspection is recommended:

1. Verify that the Water Supply Valve and the air system valve are sealed in fully open position.
2. Verify that the required water and air pressures are being applied to the Valve inlet and trim.
3. Verify that the Trim Shutoff Valve, Alarm Test Valve, Emergency Release Valve, Pressure Gauge Valves, Condensate Valve (if in use), Flow Test Valve, and Drain Valve are in set position.
4. The Supply, System, and Air Pressure Gauges should be checked for accuracy.
5. Visually inspect for disconnected wires, broken or missing parts, or other evidence of impaired protection.

Strainer Cleaning

A quarterly Strainer Cleaning is recommended:

1. Close the Trim Shutoff Valve.
2. Remove the covers of the trim and alarm Y-Strainers. Clean if necessary.
3. Open the Trim Shutoff Valve.

Alarm Testing

A *quarterly* Alarm Testing is recommended:

Water Flow Alarm

1. Test the Water Motor Alarm or Alarm Pressure Switch by opening the Alarm Test Valve.
2. Water Motor Alarm should be audible. Alarm Pressure Switch should activate.
3. Close the Alarm Test Valve. All local alarms should stop sounding and pressure switch is reset.
4. Verify that the supply piping to the alarm drains properly.

Low Air Pressure Alarm

1. Open the inspector's test valve on the sprinkler system. Verify that the Low Air Pressure Alarm operates properly.
2. Close the inspector's test valve. Verify that normal pneumatic pressure is restored and that the Low Air Pressure Alarm and Air Pressure Supervisory Switch are reset.

Preaction Trim Testing

A *semi-annual* Preaction Trim Testing is recommended. Testing of the control trim is conducted with no flow of water to the system.

1. Open the Flow Test Valve to flush away debris or foreign particles which may have accumulated in the Valve inlet.
2. Close the Flow Test Valve.
3. Close the Water Supply Valve installed in the inlet of the Valve.
4. Energize the Solenoid Valve by manually operating the Fire Alarm & Releasing Panel. The Electric Alarm should operate and a trickle of water should be drained from the deluge trim. Wait and verify that the pressure reading on the System Pressure Gauge drops to zero which simulates an open position of the Valve.
5. Reset the valve by performing the instructions in Resetting.

Trip Testing

By performing the Trip Test, the sprinkler piping system will be flooded with water, and water will flow from any open release in the system. The Preaction Valve should be trip tested *annually* with the Water Supply Valve partially open, and *every 3 years* with the Water Supply Valve fully open. The Trip Testing should be done during warm weather.

1. Open the Flow Test Valve to flush away debris or foreign particles which may have accumulated in the Valve inlet.
2. Close the Flow Test Valve.
3. Record water supply pressure and pneumatic system pressure .
4. Trip the Valve to open by operation of either:
   a) The electric detection system according to the manufacturers instructions.
   b) Emergency Release Valve. Opening of the inspector's test valve on the sprinkler's piping would be required to verify flow.
5. The Valve should open, filling the sprinkler system with water.
   Record the elapsed time for the development of a full flow of water from the inspector's test valve.
6. Verify that all the alarms operate properly.
7. Reset the valve by performing the instructions in Resetting.
8. Verify that the water supply pressure and pneumatic system pressure have restored to the level as recorded in (3) above.

Removal

To remove the Preaction Valve:

1. Close all the pressure supply valves:
   a) Water Supply Valve.
   b) Trim Shutoff Valve.
   c) Air supply valve.
2. Disconnect the electric wires from the Solenoid Valve. The electric work should be done by a licensed electrician.
3. Open the Emergency Release Valve to release the water pressure from the **Inbal-** Valve Control Chamber.
4. Open the Flow Test Valve and Drain Valve to allow all the water and air to drain.
5. Disconnect the union and remove the trim from the valve.
6. Remove the Valve from the line for inspection.
7. To reinstall, follow the Installation procedure (use new gaskets for flanged or wafer valve).

NOTA GENERALE:

L'attrezzatura presentata in questo bollettino deve essere installata in conformità agli ultimi standard pubblicati dalle Norme UNI EN 12845, National Fire Protection Association, Factory Mutual Research Corporation o altre organizzazioni simili e anche con le disposizioni dei codici governativi o delle ordinanze laddove applicabili.
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Pressure Relief / Sustaining Valves

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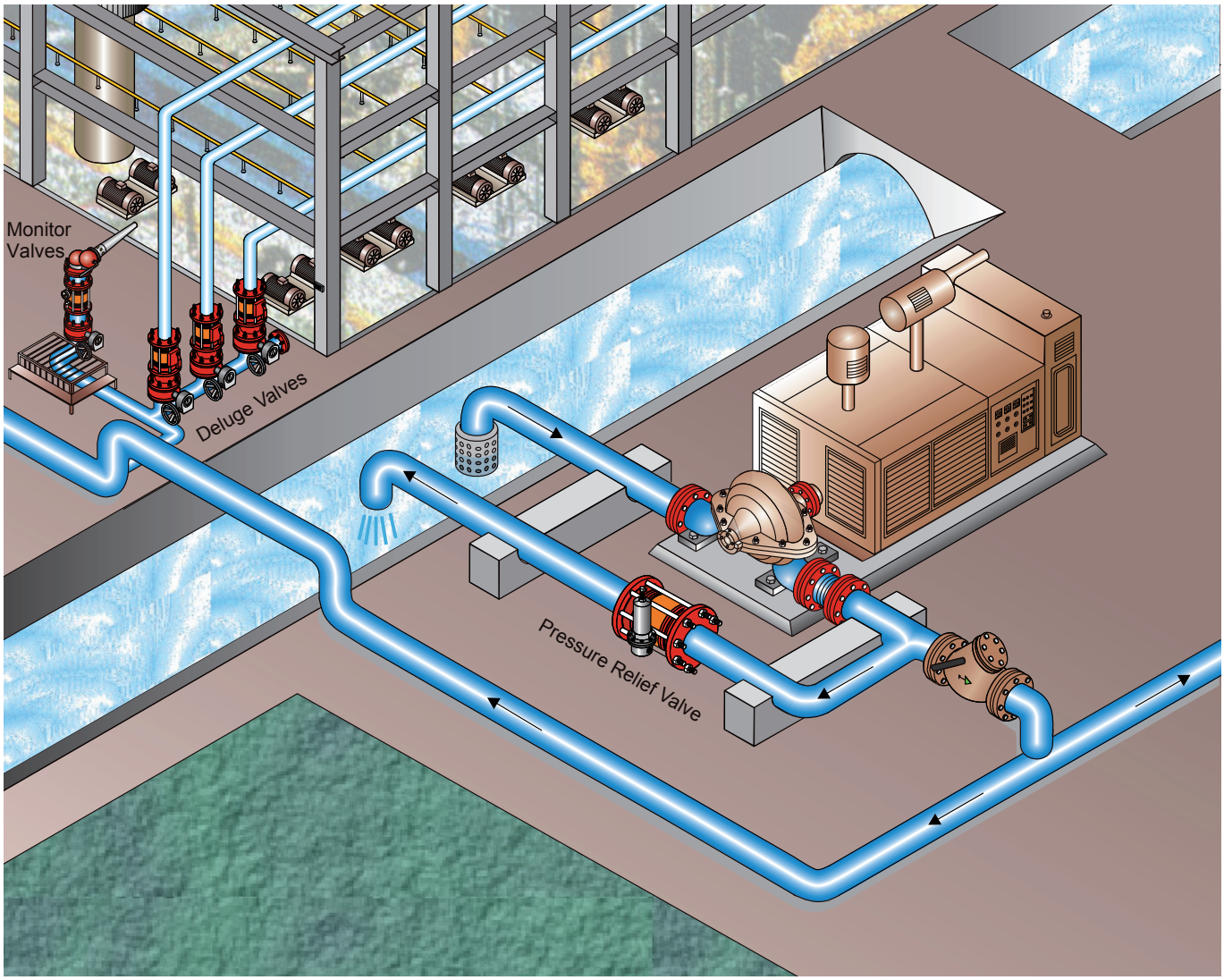
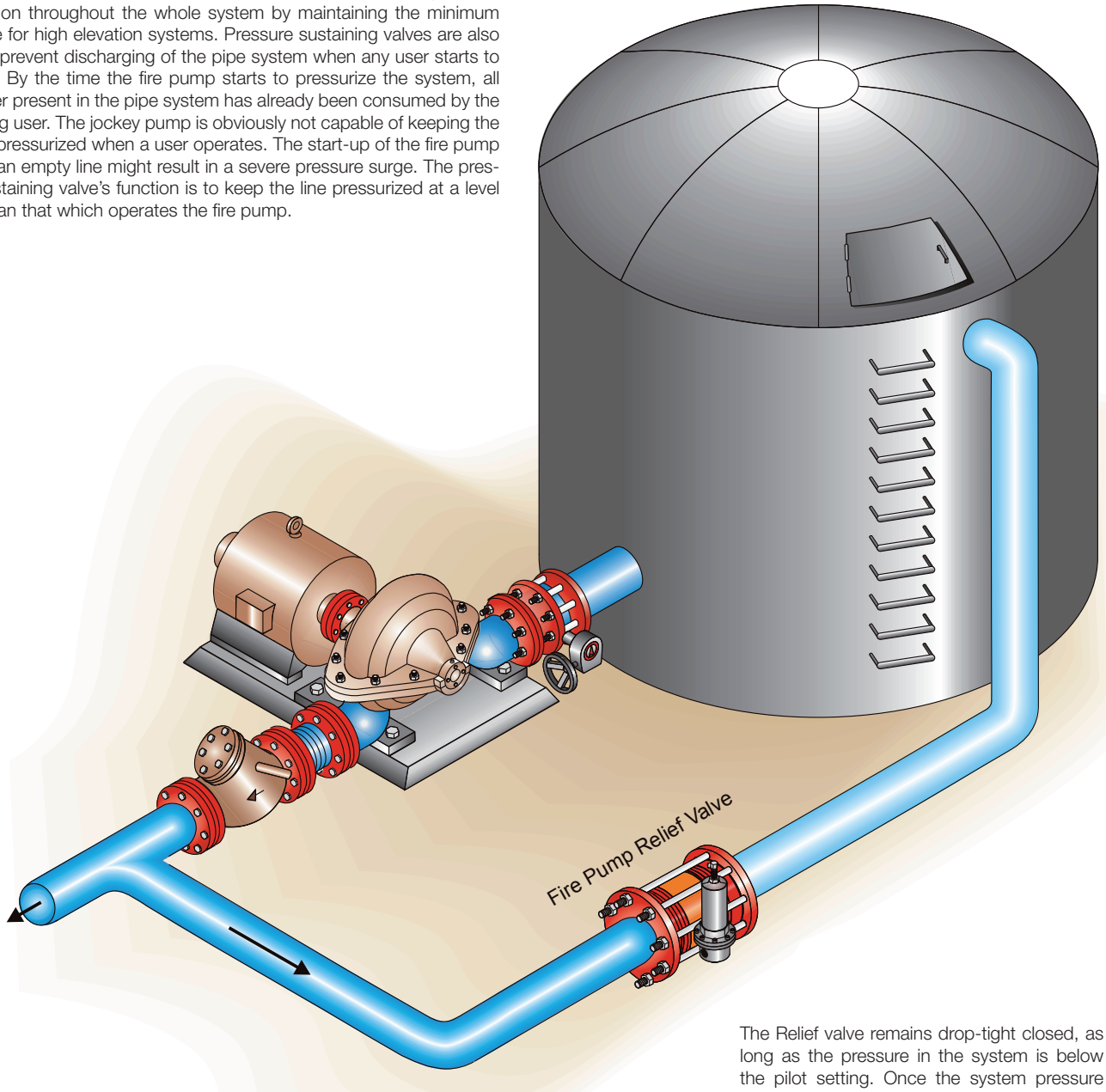
A water pressure relief valve is designed to relieve excess pressure in a water supply system. It is also used in the discharge line of a fire pump to limit, to the predetermined level, the pressure developed by the pump. Another function of the pressure relief valve is to sustain the inlet pressure to a predetermined maximum level.
There are two major types of pressure relief valves: direct acting and pilot operated.
The direct acting pressure relief valve is an adjustable spring loaded valve, particularly used in the small sizes. It has a fast response to relieve excess pressure quickly; but when the line pressure drops to the set level, the direct acting pressure relief valve closes quickly. This quick closure often results in the development of a secondary surge in the pipe system.

The pilot operated pressure relief valve is commonly used in the larger sizes, but often used in small sizes such as 1½" (40 mm) and 2" (50 mm), particularly in foam systems.
There are two different applications for pilot operated valves: pressure relief and pressure sustaining.
Pressure relief valves are used to release excess pressure that may develop as a result of a sudden change in the velocity of the water flowing in the pipe. Pressure surges may be initiated by the closing of a valve, at pump start-up or stoppage, or by deluge system operation. Pressure relief valves respond to pressure increase fairly quickly, while the closure speed is gradual as predetermined. Pressure relief valves are installed in the by-pass system, and the water is discharged to the drain system.



Pressure sustaining valves are used to sustain the upstream pressure to a predetermined maximum level. The function is to balance the pressure distribution throughout the whole system by maintaining the minimum pressure for high elevation systems. Pressure sustaining valves are also used to prevent discharging of the pipe system when any user starts to operate. By the time the fire pump starts to pressurize the system, all the water present in the pipe system has already been consumed by the operating user. The jockey pump is obviously not capable of keeping the system pressurized when a user operates. The start-up of the fire pump against an empty line might result in a severe pressure surge. The pressure sustaining valve's function is to keep the line pressurized at a level lower than that which operates the fire pump.



The Relief valve remains drop-tight closed, as long as the pressure in the system is below the pilot setting. Once the system pressure exceeds the pilot setting, obviously due to descending demand, the Pressure Relief opens quickly to maintain accurately a maximum preset line pressure. Pressure adjustment is made with a single adjusting screw on the pilot control.

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Fire Pump Pressure Relief Valve Series 700D

doc. nr. A02013A 19_07_2017

Model 799D- 01S02

General description

The series 700D-01S02 is specifically designed for pressure relief in fire protection systems including the Fire Pump Pressure Relief Valve. The Fire Pump Pressure Relief Valve automatically relieves excess pressure and accurately maintains a predetermined maximum pressure, regardless of fluctuations in the upstream potential and/or changes in demand. The series 700D-01S02 consists of the Valve, which is a pressure operated, sleeve actuated, axial valve, and a pressure relief pilot control. The Valve utilizes no moving mechanical parts, which makes the valve response to be very fast upon rapid increase in the system pressure. The instantaneous action of the Pressure Relief Valve virtually eliminates the development of surge conditions. On the other hand, the closure performance of the valve is gradual to prevent any secondary surge evolvement in the pipeline. The pilot control enables a reliable modulating pressure relief service to maintain the system pressure accurately at a predetermined maximum constant level, protecting the system from excess pressure.
The standard material Fire Pump Pressure Relief Valve series 700D-01S02 is rated to a working pressure of 300 psi (21 bar), capable of withstanding severe surges caused by pump start-up or stoppage. Valves are available in sizes 1½" (40 mm) to 12" (300 mm), with threaded, flanged, and wafer ends.

The Control Valve has an excellent operating characteristic: the only moving part is the reinforced sleeve which actuates without delay due to frictionless motion. The closure of the Valve is achieved when the heavy-duty sleeve forms a drip-tight seal with the corrosion resistant core.
The unique design and the variety of materials and coatings make the Pressure Relief Valve suitable for use in brackish or sea water, similar to those found in chemical and petrochemical facilities or in offshore platforms.

Technical Data

Approvals

The basic Valve is FM Approved as an Automatic Water Control Valve to 300 psi (21 bar)in sizes 3" (80 mm) to 8" (200 mm) .
Inbal Pressure Relief Valves have ABS and DNV Type Approval in sizes 1½" (40 mm) to 12" (300 mm) to 300 psi (21 bar).

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711D-01S02
Flanged	Flanged	733D-04I01
Wafer	Wafer	799D-04I01

Sizes

Threaded End:
1½", 2", 2½", & 3" (40, 50, 65, & 80 mm).
Flanged end:
2", 2 ½", 3", 4", 6", 8", 10", & 12" (50, 65, 80, 100, 150, 200, 250, & 300 mm).
Wafer End:
3", 4", 6", 8", 10", & 12" (80, 100, 150, 200, 250, & 300 mm).

End Standards

Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN 10, 16 & 25 ;
BS 10 Tables D & E ;
AS 2129 Tables D & E ;
Jis B 2212, 2213, & 2214.
Wafer End:
Fits most of the above standards.

Pressure Rating

Maximum working pressure*: 300 psi (21 bar).

** Standard material valve.*

Manufacturer: MIL Valves

Adjustment Range
Standard:
Sizes 2" to 4" (50 to 100 mm) - 45 to 190 psi (3 to 13 bar).*
Sizes 6" to 12" (150 to 300 mm) - 60 to 270 psi (4 to 19 bar).**
Heavy:
Sizes 2" to 4" (50 to 100 mm) 130 to 270 psi (9 to 19 bar).***

** Marked blue.*
*** Marked yellow.*
**** Marked white.*

Temperature Range
Water: Max. +150oF (+65oC).

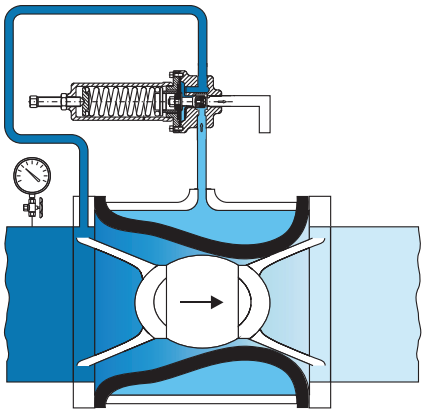
Installation Position
Vertical or horizontal.

Materials
Standard
Valve Housing:
Carbon Steel (SAE 1021).
Valve Ends :
Ductile Iron (ASTM A536-65 45 12).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel.
Optional
Cast Steel ;
Bronze ;
Nickel Aluminum Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

Coating
Standard
Powder epoxy coated. Thickness: 0.004" (0.1 mm) external and internal surfaces.
Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01" (0.3 mm).
Halar® coated. Thickness: 0.02" (0.5 mm).

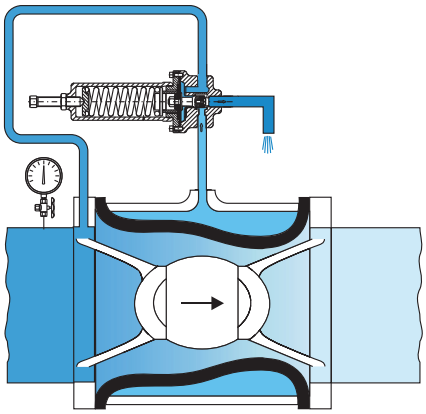
Halar® is a registered trade mark of Ausimont USA Inc.

Features
- No Moving Mechanical Parts (N.M.M.P.) design provides a very fast response for effective protection of the system from surge damage.
- Accurate modulating action to maintain the system pressure within a close limit.
- Advanced design of the pilot control eliminates the need for a needle valve and provides fast removal of the Inbal Valve Control Chamber pressure for faster pressure relief operation.
- Easily adjustable to the desired maximum system pressure.
- Long spring design for sensitive setting and the maintaining of accurate set pressure.
- Excellent Valve regulating performance ensures soft, gradual closure to prevent secondary surge development.
- Hydrodynamically designed Valve with streamline flow path provides increased flow capacity.
- Pressure rating of 300 psi (21 bar) for standard material valve.
- Emergency Release Valve, Strainer, Shutoff Valve, and Check Valve are standard items.
- Water Supply Unit provides for neat, space saving control trim.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard ensures excellent corrosion resistance.
- Variety of available materials to ensure corrosion-free service, even under severe conditions.



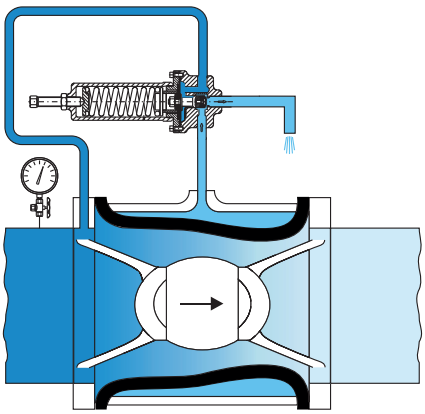
"Under Satisfied" Position
The upstream pressure drops below the setting. The Pilot Valve increases the pressure at the Control Chamber. The **Inbal** *Valve closes to increase the upstream pressure.*

Figure (1)



"Satisfied" Position
The upstream pressure is precisely as preset. The Pilot Valve isolates the Control Chamber thus no flow goes in or out. The **Inbal** *Valve stays in a stable throttling position.*

Figure (2)



"Over Satisfied" Position
The upstream pressure exceeds the setting. The Pilot Valve opens wider to decrease the Control Chamber pressure. The **Inbal** *Valve opens further to decrease the upstream pressure.*

Figure (3)

Fire Pump Pressure Relief Valve Series 700D

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Operation

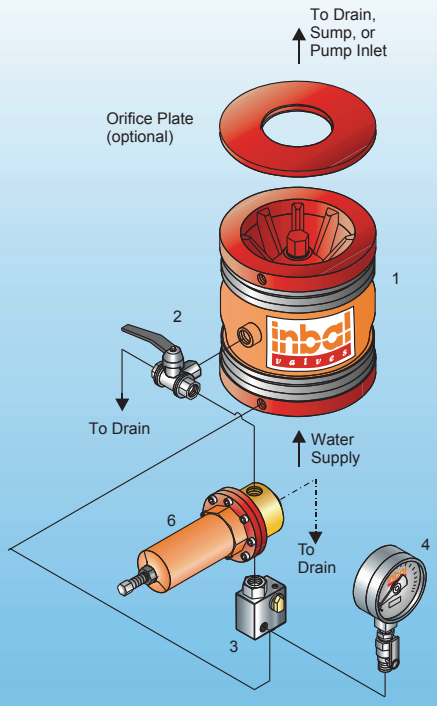
The series 700D-01S02 Fire Pump Pressure Relief Valve is designed to be installed on a tee off the pipeline system between the fire pump and the check valve, relieving excess pressure to sump or drain system. The Pressure Relief Valve is installed on a by-pass at any location in the system, subject to developing surge conditions.

The Control Chamber of the Valve is the annular space between the valve Housing and the Sleeve. The valve is held in a closed position as long as the system pressure does not exceed the setting of the pilot valve. Should the system pressure exceed the set point, the Pilot Valve will open to vent the Control Chamber pressure, thus the Valve will open, relieving all excess pressure and flow to sump or atmosphere [see Figure (3)]. As pipe line pressure drops, the Pilot Valve and the Valve start to close gradually while monitoring that the system pressure does not exceed the preset pressure at any time [see Figure (1)]. Once the system pressure exceeds the set point, during the closure process, the Valve starts to regulate and accurately maintains the preset system pressure [see Figure (2)]. When the fire system demand ceases, the Fire Pump Pressure Relief Valve opens to relieve all of the pump pressure and flow.

The check valve then closes, isolating the fire system. The pump may now safely be stopped without generating any system surges. When the pump is idle, the series 700D-01S2 Valve slowly closes, automatically resetting for the next cycle.

The Emergency Release Valve enables overriding of the pilot control to open the Valve when the fire pump operates but irrespective of line pressure exceeding the set point.

Schematic Control Diagrams – 799D- 01S02



1 **Inbal** Control Valve
2 Emergency Release Valve
3 Water Supply Unit
4 Supply Pressure Gauge
5 Pressure Relief Pilot Valve

Control Trim

The control trim includes all the components, nipples, fittings, and tubing. On standard the control trim supplied preassembled in sections. The 700D-01S02 is supplied after passing comprehensive hydraulic tests and being set, on standard (unless otherwise required), to 150 psi (10 bar). The control trim includes the following components:

- Pressure Relief Pilot Valve.
- Water Supply Unit.
- Emergency Release Valve.
- Supply Pressure Gauge and Pressure Gauge Valve.

Valve Sizing

To extend the life span of the Pressure Relief Valve, it is recommended to calculate cavitation conditions at the given pressures and flow rates. Refer to InbalValve Sizing bulletin F50-01-01.

Capacity Chart

Inbal Valve Size *(Inch)*	Maximum Recommended Flow Rate NFPA 20 *(gpm)*	Maximum Intermittent Flow Rate *(gpm)*
1½"	100	200
2"	250	310
2½"	300	530
3"	500	700
4"	1000	1250
6"	2500	2800
8"	5000	5000
10"	-------	7700
12"	-------	11 200
(mm)	*(m^3 / h)*	*(m^3 / h)*
40	23	45
50	57	70
65	68	120
80	114	160
100	227	285
150	568	640
200	1135	1135
250	-------	1750
300	-------	2550

Installation

Refer to the Trim Chart applicable to the Pressure Relief Valve model in use. The valve must be installed in an area not subject to freezing temperatures or physical damage. The Valve series 700D-01S02 can be installed horizontally or vertically.

1. When the Pressure Relief Valve is delivered, carefully unpack and check that there has been no damage to the operating components, piping, and fittings.
2. Always flush the pipeline before installing the Valve.
3. Place the Valve in the piping at the outlet of the tee. Verify that the arrow on the Pressure Relief Valve matches the actual flow direction. Determine from which side the system will be accessed, and locate the Valve on the piping system accordingly.
4. Install the Pressure Relief Valve in the pipeline. Use tape, gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the specific Valve model in use.
5. Complete the trim assembly by mounting the preassembled sections.
   Refer to the applicable Trim Chart and Instructions
6. Connect the drain port of the Pressure Relief Pilot Valve to the drainage system.
7. Open the shutoff valve. To ensure smooth operation, all air must be expelled from the Valve Control Chamber and pilot control system.
8. If adjustment is required see (3) in Resetting
9. Test the Pressure Relief Valve according to the Testing procedure.

Resetting

1. During normal course of operation, the Pressure Relief Valve is automatically reset after operation.
2. If the Valve was actuated by the Emergency Release Valve, the handle of the valve should be returned to SET position.
3. If the relieved set point pressure is to be adjusted, turn the Pilot Valve adjusting screw clockwise to increase and counter-clockwise to reduce the pressure setting.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Pressure Relief Valve is in good operating condition. The inspection and testing activities should be done according to NFPA standards, the guidelines and regulations of the authorities having jurisdiction, and the following instructions. It is recommended that the Pressure Relief Valve be tested, operated, cleaned, and inspected on a routine basis.

Inspection

A *monthly* inspection is recommended:

1. Check the Supply Pressure Gauge reading.
2. Verify that the Shutoff Valve device is in SET position.
3. Verify that the Emergency Release Valve is in SET position.
4. Verify that the Pilot Valve and the Valve are tightly closed.
5. Visually inspect for broken or missing parts, or other evidence of impaired protection.

Strainer Cleaning

A *quarterly* strainer cleaning is recommended:

1. Close the Shutoff Valve device (turn the Rotor to MAINTENANCE position).
2. Remove the cover of the strainer device in the Water Supply Unit, clean if necessary. Reinstall the screen and the cover.
3. Open the Shutoff Valve device (return the Rotor to SET position).

Pressure Relief Valve Testing

A *semi-annual* Pressure Relief Valve Testing is recommended:

1. The testing of the valve involves the operation of the Fire Pump. If testing of the entire system is not feasible, then the Main Shutoff Valve should be closed before the pump is activated.
   The Pressure Relief Valve is sized to have the capability of relieving the full pump capacity at the predetermined system pressure.
2. When the pump is on, verify that the Pilot Valve and the Valve are open and that the pump delivery pressure is maintained at the preset level.
3. When the pump is stopped verify that both the Pilot Valve and the Valve gradually close to a drip tight position.

Pilot Valve Testing

Operation of the Pilot Valve should be done quarterly. If operation of the entire system is not feasible, then an individual pilot testing should be performed.
Testing of the Pilot Valve should be done by following the instructions in bulletin F36-05-01 - “Pressure Relief Pilot Valve models PN2 & PO2”.

Removal

To remove the Pressure Relief Valve:

1. Close the Main Shutoff Valve.
2. Open the Emergency Release Valve to release the water pressure from the Valve Control Chamber.
3. Remove the Pressure Relief Valve from the line for inspection.
4. To reinstall, follow the installation procedure (use new gaskets for flanged or wafer valve).

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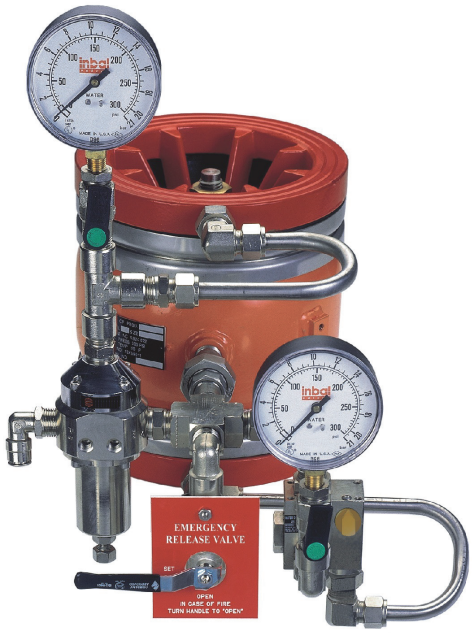
Pressure Reducing Valve Series 700D

doc. nr. A02014A 19_07_2017

Model 799D- 01R01



General description

The Pressure Reducing Valve series 700D-01R01 is specifically designed for pressure regulating applications in fire protection systems.
The 700D-01R01 Valve automatically reduces a higher inlet pressure to a preset delivery pressure, which remains steady and unaffected by the variations or fluctuations in the inlet line pressure.
The series 700D-01R01 consists of the Valve which is a pressure operated, sleeve actuated, axial valve and a pressure reducing pilot control.
The Pressure Reducing Valve maintains the downstream pressure within a narrow pressure range. If the downstream pressure changes slightly the pilot control responds immediately to modulate the Valve for the preset pressure.
The use of the Pressure Reducing Valve balances the distribution of the water capacity available throughout the system and prevents a higher demand from the areas which are of lower altitude or are located closer to the pressure source. Thus, the total system demand is balanced and the excess flow through the system with high pressure water supplies is reduced to the desired level. The adjustment of the delivery pressure could be easily modified at the site.
Standard material Pressure Reducing Valves are rated to 300 psi and are available in sizes 1½" (40 mm) to 12" (300 mm) with threaded, flanged, and wafer ends.
The only moving part in the Valve, when it operates, is the reinforced sleeve which forms a drip tight seal with the corrosion resistant core. The unique design of the Valve and the pilot control, as well as the variety of materials and coatings make the Pressure Reducing Valve suitable for use with brackish or sea water similar to those found in chemical and petrochemical facilities or in offshore platforms.

Technical Data

Approvals

The basic Valve is approved in sizes 3" (80 mm) to 8" (200 mm) by FM as an automatic water control valve to 300 psi (21 bar). Valves series 700 are Lloyd's, DNV, and ABS Type approved in sizes 1½" (40 mm) to 12" (300 mm) to 300 psi (21 bar) .

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711D-01R01
Flanged	Flanged	733D-01R01
Wafer	Wafer	799D-01R01

Sizes

Threaded End:
1½", 2", 2½", & 3" (40, 50, 65, &80mm)..
Flanged End:
2", 3", 4", 6", 8", 10", & 12" (50, 80, 100, 150, 200, 250, & 300 mm).
Wafer End:
3", 4", 6", 8", 10", & 12" (80, 100, 150, 200, 250, & 300 mm).

End Standards

Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN 10, 16 & 25 ;
BS 10 Table D & E ;
AS 2129 Table D & E ;
Jis B2212, 2213 & 2214.
Wafer End:
Fits most of the above standards.

Pressure Rating

Maximum working pressure*: 300 psi (21 bar).

* *Standard material valve.*

Adjustment Range

Standard:*
30 to 300 psi (2 to 21 bar).

* *Marked red.*

Temperature Range

Water: Max. +150°F (+65°C).

Manufacturer: MIL Valves

Installation Position
Vertical or horizontal.

Materials
Standard
Valve Housing:
Carbon Steel (SAE 1021).
Valve Ends:
Ductile Iron (ASTM A536-65 45 12).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel.
Optional
Cast Steel ;
Bronze ;
Nickel Aluminum Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

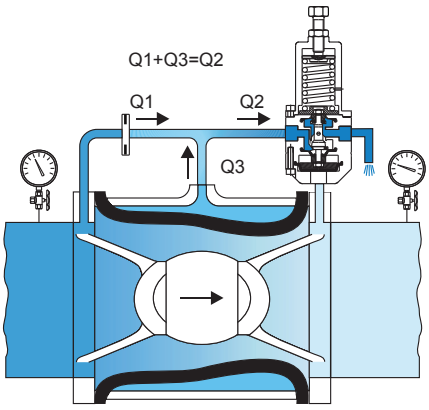
* *The standard for each optional material is available upon request.*

Coating
Standard
Powder epoxy coated. Thickness: 0.004" (0.1 mm) external and internal surfaces.
Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01" (0.3 mm).
Halar® coated. Thickness: 0.02" (0.5 mm) .

Halar® is a registered trade mark of Ausimont USA Inc.

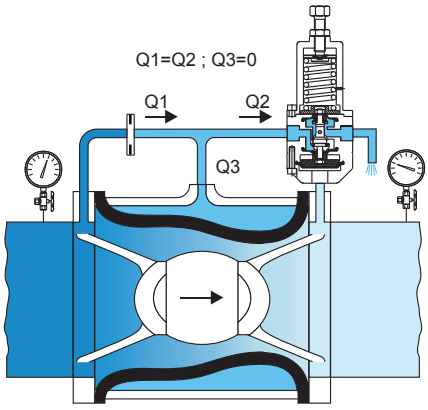
Features
- No Moving Mechanical Parts (N.M.M.P.) design provides immediate and accurate response to small pressure changes.
- The Valve has excellent regulating performance, provides stable delivery pressure even at the demand of a single fused sprinkler head, and a gradual closure in case of increasing delivery pressure to eliminate surges.
- Balanced single seat design pilot control for very accurate performancenot affected, even slightly, by inlet pressure fluctuations.
- Long spring design pilot valve for sensitive setting and maintaining precise delivery pressure.
- Easily adjusted to the desired maximum system pressure.
- Hydrodynamically designed Valve with streamline flow path provides increased flow capacity.
- Pressure rating to 300 psi (21 bar) for standard material valve.
- Wide range of sizes for an optimal system design.
- Emergency Release Valve, Strainer, Shutoff Valve, and Check Valve are standard items.
- Water Supply Unit provides for neat, space saving control trim.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standardensures excellent corrosion resistance.
- Variety of available materials to ensure corrosion-free service even under severe conditions.
- Additional functions of various types of deluge control could be easily added on the same valve body.

Operation
The Pressure Reducing Valve series 700D-01R01 is a pilot operated hydraulic valve. The pilot system controls the Valve Control Chamber which is the annular space between the valve Housing and the Sleeve. The Pilot Valve controls the pressure in the Valve Control Chamber in response to changes in the downstream pressure.
When the delivery pressure decreases, the Pilot Valve and the Valve open wider to increase the pressure [See Figure (1)]. When the delivery pressure increases, the Pilot Valve and the Valve close to throttle further the flow and consequently the delivery pressure is decreased [See Figure (3)]. Thus, the outlet pressure is maintained within a close limit. If the inlet pressure drops to the preset outlet pressure level, the pilot control allows the Valve to open wide for a minimal pressure drop across the valve. The adjustment of the delivery pressure is made by the adjustment screw on the Pilot Valve.



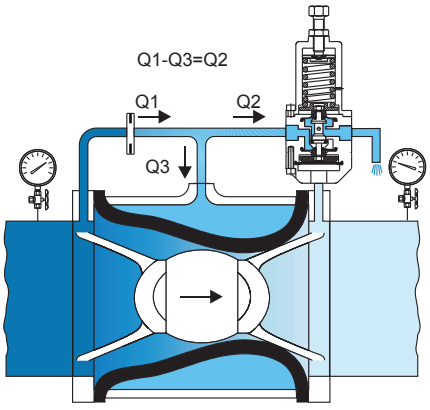
"Under Satisfied" Position
The system pressure drops below the setting. The Pilot Valve opens wider to decrease the Control Chamber pressure. The **Inbal** *Valve opens wider to increase the delivery pressure.*

Figure (1)



"Satisfied" Position
The system pressure is precisely as preset. The Pilot Valve releases the exact same flow rate which is introduced through the orifice. The **Inbal** *Valve stays in a stable throttling position.*

Figure (2)



"Over Satisfied" Position
The system pressure exceeds the setting. The Pilot Valve is closing to increase the Control Chamber pressure. The **Inbal** *Valve is closing to reduce the delivery pressure.*

Figure (3)

Control Trim

The control trim includes Pilot Valve, accessories, gauges, fittings, and tubing.
The trim is supplied preassembled in sections. The system is fully hydraulically tested and set on standard (unless otherwise required) to 100 psi (7 bar).
The control trim includes the following components:

- Pressure Reducing Pilot Valve
- Water Supply Unit
- Restriction Orifice
- Emergency Release Valve
- Pressure Gauges and Pressure Gauge Valves

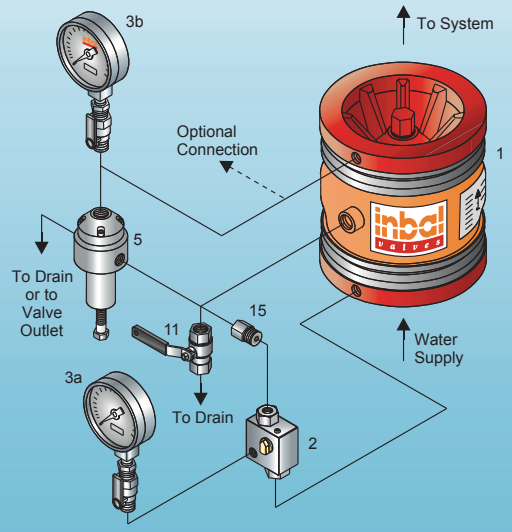
Valve Sizing

To extend the life span of the Pressure Reducing Valve it is recommended to calculate cavitation conditions at the given outlet / inlet pressure ratio.
Refer to the Valve Sizing bulletin F50-01-01.

Capacity Chart

Inbal Valve Size		Maximum Intermittent Flow Rate	
(Inch)	*(mm)*	*(gpm)*	*(m^3/h)*
1½"	40	290	65
2"	50	350	80
2½"	65	530	120
3"	80	660	150
4"	100	1100	250
6"	150	2460	560
8"	200	3870	880
10"	250	6160	1400
12"	300	8800	2000

Schematic Control Diagrams – 700D-01R01



1 **Inbal** Control Valve
2 Water Supply Unit
3a Upstream Pressure Gauge
3b Downstream Pressure Gauge
5 Pressure Reducing Pilot Valve
11 Emergency Release Valve
15 Restriction Orifice

Installation

Refer to the Trim Chart applicable to the Pressure Reducing Valve model in use. The valve must be installed in an area not subject to freezing temperatures or physical damage. The Valve series 700D-01R01 can be installed horizontally or vertically.

1. When the Pressure Reducing Valve is delivered, carefully unpack and check that there has been no damage to the operating components, piping, and fittings.
2. Verify that the factory presetting is correct or alternatively that the spring type is within the desired pressure setting. See Adjustment Range in Technical Data.
3. Always flush the pipeline before installing the Valve.
4. Place the Valve in the piping. Verify that the arrow on the Pressure Reducing Valve matches the actual flow direction. Determine which side the system will be accessed from and locate the valve accordingly.
5. Install the Valve in the pipeline. Use tape, gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the specific Valve model.
6. Complete the trim assembly by mounting the preassembled sections. Refer to the applicable Trim Chart and Installation Guide.
7. Connect the drain port of the Pressure Reducing Pilot Valve to the drainage system.
8. Open the Shutoff Valve. To ensure smooth operation, all air must be expelled from the Valve Control Chamber and Pilot Control System.
9. A pressure relief valve not less than ½" in size shall be installed downstream of the Pressure Reducing Valve. The pressure relief valve shall be set to 15 psi (1 bar) higher than the Pressure Reducing Valve's setting.
10. The downstream pressure adjustment is recommended at a minimum flow velocity of 1.5 ft/sec (0.5 m/sec). For preaction and wet systems, open the main drain. For deluge systems, when it is not feasible to flow the system, close the system shutoff valve and open the drain valve.
11. Operate the system to establish the minimum flow. Check the Downstream Pressure Gauge reading. If adjustment is required, turn the Pilot Valve adjustment screw clockwise to increase pressure or counter clockwise to decrease the pressure setting.
12. For a wet system, close the main drain. For a preaction system close the Water Supply Valve, verify that the system is properly drained, and close the main drain. For a deluge system, open the system shutoff valve and close the drain valve.

Resetting

1. In a normal course of operation, the Pressure Reducing Valve is automatically reset after operation.
2. If the Valve was actuated by the Emergency Release Valve, the handle of the L-port ball valve should be returned the SET position.
3. If the delivery pressure should be adjusted, turn the Pilot Valve adjusting screw clockwise to increase the setting and counter clockwise to reduce the delivery pressure setting.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Pressure Reducing Valve is in good operating condition.
The inspections and testing activities should be done according to NFPA standards, the guidelines and regulations of the authorities having jurisdiction, and the following instructions. It is recommended that the Pressure Reducing Valve be tested, operated, cleaned, and inspected at least on a routine basis.

Inspection

A *monthly* Inspection is recommended:

1. Check the Upstream and Downstream Pressure Gauge readings.
2. Verify that the Emergency Release Valve is in SET position.
3. Verify that the Shutoff Valve device in the Water Supply Unit is in SET position.
4. Visually inspect for broken or missing parts or other evidence of impaired protection.

Strainer Cleaning

A *quarterly* Strainer Cleaning is recommended:

1. Close the Shutoff Valve device in the Water Supply Unit by turning the Rotor to MAINTENANCE position.
2. Remove the cover of the strainer device in the Water Supply Unit, clean if necessary. Reinstall the screen and the cover.
3. Open the Shutoff Valve device by returning the Rotor to SET position.

Valve Testing

A *semi-annual* Pressure Reducing Valve Testing is recommended:
If the Pressure Reducing Valve Testing is combined with the periodical testing of the whole system:

1. Check the Upstream and Downstream Pressure Gauge readings. Verify that the delivery pressure is as predetermined.
2. Record the actual flow rate and upstream and downstream pressures.

For an independent Pressure Reducing Valve Testing:

1. Perform steps (11), (12), and (13) in Installation. Verify that the delivery pressure is as predetermined.
2. Record the actual flow rate and upstream and downstream pressures.

Pilot Valve Testing

Operation of the Pilot Valve should be made *quarterly*. If operation of the whole system is not feasible, then an individual Pilot Valve Testing should be performed.
Testing of the Pilot Valve should be done according to the instructions in bulletin F36-02-01 - Pressure Reducing Pilot Valve models PA1 and PB1.

Removal

To remove the Pressure Reducing valve:

1. Close the Water Supply Valve.
2. Close the Shutoff Valve device in the Water Supply Unit (turn the Rotor to MAINTENANCE position).
3. Open the Emergency Release Valve to release the water pressure from the Valve Control Chamber.
4. Remove the Pressure Reducing Valve from the line for inspection.
5. To reinstall, follow the installation procedure (use new gaskets for flanged or wafer valve).

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Control Valve, Electric Actuation Series 700D

doc. nr. A02015A 19_07_2017

General description

The Electrically Actuated Control Valve is specifically designed for use in fire protection systems controlled electrically by automatic or manual release. The series 700D-02C01/2/3/4 consists of Automatic Water Control Valve series 700D and an Electric Actuator. The Valve is an automatic streamline sleeve control valve which utilizes only the line pressure as a source of energy to operate.
The sleeve actuator is an integral part of the Valve and there are No Moving Mechanical Parts (N.M.M.P.) when the Valve operates. The Electric Actuator is an integrated multifunctional unit. It consists of a built-in Strainer, Shutoff Valve, Check Valve, and Solenoid Valve. The Electric Actuator is purposely designed for compact, simple, and sturdy control trim.
The Electric Actuator utilizes a "dry" concept design and it is easily maintained allowing free, independent access to each device.
The Electrically Actuated Control Valve is used for local and/or remote operations. The Electric Actuator enables remote electric control with low energy consumption. After operation, the Control Valve can be remotely reset, saving the need to approach the valve for resetting.
The unique Electrically Actuated Control Valve can be mounted in any required position with no need to specify the type of installation in advance. The inline shape of the Valve, together with the integrated Electric Actuator, permits a compact, space saving configuration, protruding only slightly from the pipe lineation. The series 700D-02C01 complies with weather-proof and explosion-proof requirements (an Ex. Pf. coil should be used). An electric flow indicator, an opening speed control, and/or closing speed control are options.
The Control Valve is available in sizes 1½" (40 mm) to 4" (100 mm). The valves are available in threaded, wafer, and flanged ends.
The Control Valve has an excellent operating characteristic. The only moving part is the reinforced sleeve which actuates without delay due to frictionless motion, but at the same time responds to the pressure differential across the valve versus the control pressure, thus moving gradually to prevent any rapid changes in velocity of flow and line pressure. The closure of the Valve is achieved when the heavy duty sleeve forms a drip-tight seal with the corrosion resistant core.
The standard material Control Valve is rated to a working pressure of 300 psi (21 bar) but is capable of withstanding severe surges often found in many installations due to pump startons or stoppages or other valve operations. The reset of the series 700D-02C, whether it was operated locally or by remote control, is simply done by restoring the operated release device to set position.
The unique design and variety of materials and coatings make the Control Valve suitable for use with brackish or sea water similar to those found in chemical and petrochemical facilities or in offshore platforms. It can also be used as a foam concentrate valve in foam / water systems.
The basic Valve was tested by FM and UL (3" & 4", 80 & 100 mm) for 300 psi (21 bar) service at 1200 psi (84 bar) hydrostatic pressure and it is part of the FM Approved Deluge Valve and UL Listed Pump Pressure Relief Valve. A wide range of various pilot valves and accessories are available when additional duties such as pressure regulating, flow control, or others are required.

Technical Data

Approvals
The Control Valve series 700D- 02C is based on the FM Approved and UL Listed (3" & 4", 80 & 100 mm).
Inbal Valves series 700 have Lloyd's, DNV, and ABS Type Approvals for all sizes.

Model Numbers

Inlet End	Outlet End	Model No.
Threaded	Threaded	711D-02C01
Flanged	Flanged	733D-02C01
Wafer	Wafer	799D-02C01

Model Number terminates with "01" utilizes Electric Actuator model 441-01, "02" 441-02, "03" 441-03, "04" 441-04. See bulletins F35-04-01, F30-01-01, and F30-02-01.
For sea water trim replace "02" with "22".

Sizes
Threaded End:
1½", 2", 2½",&3" (40, 50, 65, & 80mm).
Flanged End:
2", 2½", 3", & 4" (50, 65, 80, & 100 mm).
Wafer End:
3" & 4" (80 & 100 mm).

End Standards
Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN10, 16 & 25 ;
BS 10 Table D & E ;
AS 2129 Table D & E ;
Jis B 2212; 2213; 2214.
Wafer End:
Fits most of the above standards.

Pressure Rating
Maximum working pressure: 230 psi (16 bar). Minimum working pressure: 30 psi (2.1 bar). Actual pressure rating is limited by the Electric Actuator. Rating to 300 psi (21 bar) is available upon request.

Temperature Range
Water: Max + 1500F(+650C).

Manufacturer: MIL Valves

Installation Position
Available in:
Energized to open , energized to close, and magnetic latch (impulse) types.
Standard voltages:
AC 50Hz: 24, 48, 110, 220, & 380 volt ; AC 60Hz: 24, 120, & 240 volt ; DC: 12, 24, 48, 110, 120, & 220 volt.
Other voltages are available on request.
Protection type Enclosure:
Conforms to NEMA (1 to 9), IEC (79 & 529), or CENELEC (50014 to 50019) standards.
See bulletins F30-01-01 and F30-02-01 for further information.

Installation Position
Vertical or horizontal.

Materials
Standard
Valve Housing:
Carbon Steel (SAE 1021).
Valve Ends:
Ductile Iron (ASTM A536 65-45-12).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel.

Optional
Cast Steel ;
Bronze ;
Nickel Aluminium Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

Coating
Standard
Powder epoxy coated. Thickness: 0.004” (0.1 mm) external and internal surfaces.
Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01” (0.3 mm).
Halar® coated. Thickness: 0.02” (0.5 mm).

Halar® is a registered trade mark of Ausimont USA Inc.

Control Trim
The complete control trim includes an Electric Actuator, Emergency Release Valve, Supply Pressure Gauge, Pressure Gauge Valve, fittings, and tubing. On standard the control trim is supplied preassembled in sections.
See the applicable Trim Chart for complete components list.

Features
- Any line pressure, either very low or high, is sufficient to close the Control Valve and keep it closed tightly.
- The Valve, designed for control valve service from basic concepts, utilizes a built-in sleeve actuator.
- The same control valve can be operated and reset from the control room as well as from field contro l panel.
- No Moving Mechanical Parts (N.M.M.P.) construction ensures a long life of dependable operation, reducing the cost of maintenance.
- Very simple trim, virtually consists of only two components.
- Integrated multi-function Electric Actuator (E,A) permits a compact, space saving shape.
- Emergency Release Valve, strainer, shutoff valve, and check valve are standard devices.
- The Control Valve will not open falsely, not even slightly or momentarily, due to fluctuations in the line pressure.
- Quick, yet soft opening performance - eliminates water hammer and consequent damages.
- Wide range of voltages and enclosure protections for the Solenoid Valve device in the Electric Actuator.
- Pressure rating of 230 psi (16 bar) for standard Control Valve. Rating to 300 psi (21 bar) is available upon request.
- Wide range of sizes for an ideal system design.
- Can be installed vertically or horizontally. No need to specify in advance the type of installation.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard - ensures excellent corrosion resistance.
- Variety of available materials - to ensure corrosion-free service even under severe conditions.
- Ideally suitable for use with brackish and sea water.
- Complies with weather-proof requirements as standard. Explosionproof enclosure upon request.
- High flow capabilities due to linear flow pattern.
- Opening speed control, closing speed control, and flow indicator are optional.
- Additional functions such as pressure control, could be added on the same valve body.

Operation

The Valve Control Chamber is the annular space between the Housing and the Sleeve. The valve is held in a closed position as long as the inlet water pressure is maintained in the Control Chamber.

In the set position, water control pressure is applied to the Electric Actuator. The Electric Actuator inter-connects the water pressure from the upstream of the Valve to the Control Chamber and the valve stays closed.

The Electric Actuator is available in types of "energized to open" and "energized to close" the Valve. The Valve 700D-02C01/3 opens wide when the Solenoid Valve is energized ; Valve 700D-02C02/4 - when the Solenoid Valve is de-energized. This operation is followed by a release of water from the Valve Control Chamber, simultaneously isolating the Control Chamber from the water supply.

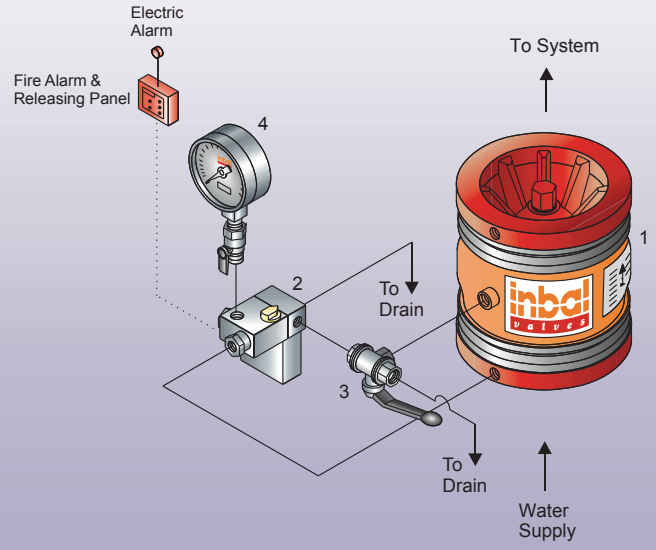
Consequently, the Control Valve opens wide introducing a flow of water to the system. The Valve 700D-02C01/3 remains open unless the electric power ceases; Valve 700D- 02C02/4 - electric power restored, and then it closes tight to be in a set position again. The Electric Actuator is also available with magnetic latch type solenoid valve. When the Solenoid Valve is pulsed, it is latched and holds the Control Valve in an open position until resetting.

Opening and/or closing speed controls, when added, control the pace of water relieved from, or introduced to, the Valve Control Chamber, thus slowing down the speed of opening and/or closing the Control Valve. Such features would be required when the pipe line system is fairly long and/or going downhill and there is a danger of water hammer due to abrupt changes of water flow velocity.

A Flow Pressure Switch is a compact unit that provides, when connected to the piping system, both local and remote indications of the valve's position and whether a flow takes place. When the Control Valve opens and flow starts, the pressure built in the outlet of the valve is detected by the pressure switch. The basic pressure switch contains a single SPDT switching element in a NEMA rated water tight enclosure (an explosion-proof enclosure is optional).

The Emergency Release Valve enables an opening of the Valve regardless of the electric actuation.

Schematic Control Diagrams – 700D-02C01/2/3/4



1 **Inbal** Automatic Water Control Valve
2 Electric Actuator
3 Emergency Release Valve
4 Supply Pressure Gauge

Installation

1. When the Control Valve is delivered, carefully unpack and check that there has been no damage to the operating components.
2. Always flush the pipelines before installing the Valve.
3. Place the Control Valve in the piping. The valve can be mounted in any position. Verify that the arrow on the Housing matches the actual flow direction. Determine which side the system will be accessed from and locate the Valve on the piping system accordingly.
4. A Water Supply Shutoff Valve, placed upstream to the Control Valve for shutting off when servicing, is considered standard good practice.
5. Install the Control Valve in the pipeline. Use gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the valve ends.
6. Complete the trim assembly by connecting the preassembled sections. Refer to the applicable Trim Chart and Installation Guide.
7. The Solenoid Valve must be wired in accordance with the requirements of the authorities having jurisdiction and/or NEC, IEC, or CENELEC standards and Codes. Wiring should be done by a licensed electrician.
8. Verify that the Shutoff Rotor and the Emergency Release Valve are in SET position.
9. Test the Control Valve according to the Testing procedure.

Resetting

The Control Valve system must be reset and restored to service as soon as possible after automatic, emergency, or manual actuation.

- After electric operation - reset the solenoid valve (de-energize the "energized to open" type, energize the "energized to close" type, or release the "magnetic latch" type). The Control Valve will close drip tight and the Electric Alarm is reset. Verify that the supply pressure has been restored to the normal level.
- After manual emergency operation - restore the Emergency Release Valve to SET position. The Control Valve will close drip tight. Verify that the supply pressure has been restored to the normal level.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Control Valve is in good operating condition. It is recommended that the Control Valve be tested, operated, cleaned, and inspected at least on a routine basis.

Inspection

A *monthly* Inspection is recommended:

1. Verify that the Water Supply Shutoff Valve is sealed in a fully open position.
2. Verify that the Shutoff Valve device in the Electric Actuator is sealed in a fully open position (The Shutoff Rotor should be in SET position).
3. Verify that the Emergency Release Valve is in SET position.
4. The Pressure Gauge should be checked for accuracy.
5. Visually inspect for disconnected wires, broken or missing parts, or other evidence of impaired protection.

Strainer Cleaning

A *quarterly* Strainer Cleaning is recommended:

1. Close the Shutoff Valve device in the Electric Actuator (Turn the Shutoff Rotor to MAINTENANCE position).
2. Unscrew the Strainer Plug in the Electric Actuator, remove the screen and clean. Reinstall the screen and the plug.
3. Open the Shutoff Valve device in the Electric Actuator (Return the Shutoff Rotor to SET position).

Electric Actuation Testing

A *semi-annual* Electric Actuation Testing is recommended. By performing the Electric Actuation Testing, water will flow from all open sprinklers and/or nozzles. Prevent damage by taking the necessary precautions.

1. Operate the Solenoid Valve by energizing ("energized to open" type), de-energizing ("energized to close" type), or by "pulsing" ("magnetic latch" type) the wires leading to the Solenoid Valve. The Electric Actuator allows the water in the Valve Control Chamber to exhaust to the atmosphere. The Electric Alarm should operate and the Control Valve opens and water will flow to the system. Verify that the whole system is working properly.
2. Reset the Solenoid Valve by deenergizing ("energized to open" type), by energizing ("energized to close" type), or by "pulsing" ("magnetic latch" type) the wires leading to the Solenoid Valve. The Electric Actuator interconnects the Valve inlet pressure with the Control Chamber. Verify that the Control Valve closes drip tight and the Electric Alarm is reset.

Emergency Release Testing

An *annual* Emergency Release Testing is recommended. By performing the Emergency Release Testing, water will flow from all open sprinklers and/or nozzles. Prevent damage by taking the necessary precautions.

1. Turn the Emergency Release Valve handle to OPEN position to allow the water in the Valve Control Chamber to exhaust out of the Vent Port of the Emergency Release Valve to the atmosphere. After a trickle of water is relieved, the exhausted flow should stop. The Control Valve opens wide and water will flow to the system. Verify that the whole system is working properly.
2. Return the Emergency Release Valve handle to SET position to introduce water from the Valve inlet to the Control Chamber. Verify that the Control Valve closes drip tight.

Removal

To remove the Inba l Contro l Valve:

1. Close all the pressure supply valves:
   a) Water Supply Shutoff Valve.
   b) Shutoff Valve device in the Electric Actuator.
2. Open the Emergency Release Valve to release the water pressure from the Valve Control Chamber.
3. Disconnect the electric wires from the solenoid coil. The electric work should be done by a licensed electrician.
4. Remove the Control Valve from the line for inspection.
5. To reinstall, follow the Installation procedure (use new gaskets for flanged or wafer valve).

Inquiries/Orders

The Data Sheet For Inquiries/Orders (bulletin F01-05-01) should be submitted.

Control Valve, Electric Actuation Series 700D

doc. nr. A02015A 19_07_2017

Model 799D-02C11

General description

The Electrically Actuated Control Valve is specifically designed for use in fire protection systems controlled electrically by automatic or manual release. The series 700D-02C11/2/3/4 consists of Automatic Water Control Valve series 700D and an Electric Pilot Actuator (E.P.A.). The Valve is an automatic streamline sleeve control valve which utilizes only the line pressure as a source of energy to operate. The sleeve actuator is an integral part of the Valve and there are No Moving Mechanical Parts (N.M.M.P.) when the Valve operates. The Electric Pilot Actuator (E.P.A.) is an integrated multi-functional unit. It consists of a built-in Strainer, Shutoff Valve, Check Valve, Pressure Actuator Valve and Electric Actuator. The Electric Pilot Actuator is purposely designed for a compact, simple, and sturdy control trim. The E.P.A. utilizes a "dry" concept design and it is easily maintained allowing free, independent access to each device.
The Electrically Actuated Control Valve is used for local and/or remote operations. The E.P.A. enables remote electric control with low energy consumption. The Electric Pilot Actuator activates the Control Valve to close or open through fairly large internal orifices. Thus, the 700D-02C11/2/3/4 could be activated quite quickly, while the restrictions due to the standard solenoid's relatively small orifices, are virtually eliminated. After operation, the Control Valve can be remotely reset, saving the need to approach the valve for resetting.
The unique Electrically Actuated Control Valve could be mounted in any required position with no need to specify the type of installation in advance. The inline shape of the Valve, together with the integrated E.P.A., permits a compact, space saving configuration, protruding only slightly from the pipe lineation. The series 700D-02C complies with weather-proof and explosion-proof (an Ex. Pf. coil should be used) requirements.
An electric flow indicator, an opening speed control, and/or closing speed control are options.
The Control Valve is available in sizes 6" (150 mm) to 12" (300 mm). The valves are available in wafer and flanged ends.
The Control Valve has an excellent operating characteristic. The only moving part is the reinforced sleeve which actuates without delay due to frictionless motion, but at the same time responds to the pressure differential across the valve versus the control pressure, thus moving gradually to prevent any rapid changes in velocity of flow and line pressure. The closure of the Valve is achieved when the heavy duty sleeve forms a drip-tight seal with the corrosion resistant core.
The standard material Control Valve is rated to a working pressure of 300 psi (21 bar) but is capable of withstanding severe surges often found in many installations due to pump startons or stoppages or other valve operations. The reset of the series 700D-02C, whether it was operated locally or by remote control, is simply done by restoring the operated release device to a set position.
The unique design and variety of materials and coatings make the Control Valve suitable for use with brackish or sea water similar to those found in chemical and petrochemical facilities or in offshore platforms. It can also be used as a foam concentrate valve in foam / water systems.
The basic Valve was tested by FM (6" & 8", 150 & 200 mm) and UL (6", 150 mm) for 300 psi (21 bar) service at 1200 psi (84 bar) hydrostatic pressure and it is part of the FM Approved Deluge Valve and UL Listed Pump Pressure Relief Valve. A wide range of various pilot valves and accessories are available when additional duties such as pressure regulating, flow control, or others are required.

Technical Data

Approvals

The Control Valve series 700D-02C is based on the FM Approved and UL Listed (6" & 8", 150 & 200 mm).
Inbal Valves series 700 have Lloyds, DNV, and ABS Type Approvals for all sizes.

Model Numbers

Inlet End	Outlet End	Model No.
Flanged	Flanged	733D-02C11
Wafer	Wafer	799D-02C11

Model Number terminates with "11" utilizes Elect_ric Pilot Actuator model 443-01, "12" 443-02, "13" 443-03, "14" 443-04.
See bulletins F35-05-01, F30-01-01, and F30-02-01.
For sea water trim replace "02" with "22".

Sizes

Flanged and Wafer Ends:
6", 8", 10", & 12" (150, 200, 250 & 300 mm).

Connection Standards
Threaded End:
NPT or BSPT.
Flanged End:
ANSI B16.5 class 150 & 300 ;
ISO 7005 - PN10 ; 16 & 25 ;
BS 10 Table D & E ;
AS 2129 Table D & E ;
Jis B 2212; 2213; 2214.
Wafer End:
Fits most of the above standards.

Pressure Rating
Maximum working pressure: 230 psi (16 bar).
Minimum working pressure: 20 psi (1.5 bar).
Actual pressure rating is limited by the Electric Pilot Actuator. Rating to 300 psi (21 bar) is available upon request.

Temperature Range
Water :Max .+ 1500F (+650C).

Installation Position
Vertical or horizontal.

Solenoid Valve
Available in:
Energized to open , energized to close, and magnetic latch (impulse)types.
Standard voltages:
AC 50Hz: 24, 48, 110, 220, & 380 volt ;
AC 60Hz: 24, 120, & 240 volt ;
DC: 12, 24, 48, 110, 120, & 220 volt.
Other voltages are available on request.
Protection type Enclosure:
Conforms to NEMA (1 to 9), IEC (79 & 529), or CENELEC (50014 to 50019) standards.
See bulletins F30-01-01 and F30-02-01 for further information.

Materials
Standard
Valve Housing:
Carbon Steel (SAE 1021).
Valve Ends:
Ductile Iron (ASTM A536 65-45-12).
Sleeve:
SMR5 Elastomer reinforced with Polyester and Kevlar.
Control Trim:
Brass Nickel Chrome plated, Stainless Steel.
Optional
Cast Steel ;
Bronze ;
Nickel Aluminium Bronze ;
Stainless Steel AISI 316 ;
Super Austenitic Stainless Steel ;
Super Duplex Stainless Steel ;
Titanium.

Coating
Standard
Powder epoxy coated. Thickness: 0.004” (0.1 mm) external and internal surfaces.
Optional
High built epoxy coated and polyurethane finish. Thickness: 0.01” (0.3 mm).
Halar® coated. Thickness: 0.02” (0.5 mm).

Halar ® is a registered trade mark of Ausimont USA Inc.

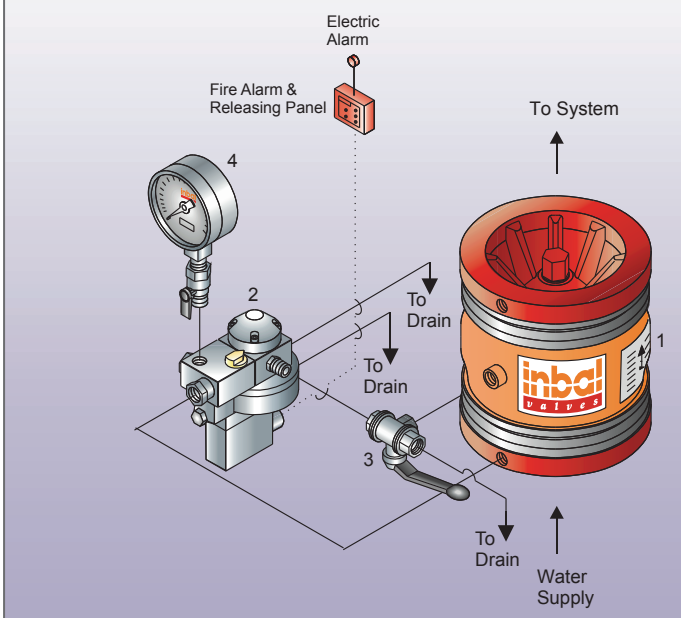
Control Trim
The complete control trim includes an Electric Pilot Actuator, Emergency Release Valve, Supply Pressure Gauge, Pressure Gauge Valve, fittings, and tubing. On standard the control trim is supplied preassembled in sections.
See the applicable Trim Chart for complete components list.

Features
- Any line pressure, either very low or high is sufficient to close the Control Valve and keep it closed tightly.
- The Valve, designed for control valve service from basic concepts, utilizes a built-in sleeve actuator.
- The same control valve can be operated and reset from the control room as well as from field control panel.
- No Moving Mechanical Parts (N.M.M.P.) construction ensures a long life of dependable operation, reducing the cost of maintenance.
- Very simple trim, virtually consists of only two components.
- Integrated multi-function Electric Pilot Actuator (E.P.A.) permits a compact, space saving shape.
- Emergency Release Valve, strainer, shutoff valve, and check valve are standard devices.
- The Control Valve will not open falsely, not even slightly or momentarily, due to fluctuations in the line pressure.
- Quick, yet soft opening performance - eliminates water hammer and consequent damages.
- Wide range of voltages and enclosure protections for the Solenoid Valve device in the Electric Pilot Actuator.
- Pressure rating of 230 psi (16 bar) for standard Control Valve. Rating to 300 psi (21 bar) is available upon request.
- Wide range of sizes for an ideal system design.
- Can be installed vertically or horizontally. No need to specify in advance the type of installation.
- Control trim made of high grade materials as standard.
- Epoxy coating supplied as standard - ensures excellent corrosion resistance.
- Variety of available materials - to ensure corrosion-free service even under severe conditions.
- Ideally suitable for use with brackish and sea water.
- Complies with weather-proof requirements as standard. Explosionproof enclosure upon request.
- High flow capabilities due to linear flow pattern.
- Opening speed control, closing speed control, and flow indicator are optional.
- Additional functions such as pressure control, could be added on the same valve body.

Operation

The Valve Control Chamber is the annular space between the Housing and the Sleeve. The valve is held in a closed position as long as the inlet water pressure is maintained in the Control Chamber.
In the set position, water control pressure is applied to the Electric Pilot Actuator (E.P.A.). The E.P.A. interconnects the water pressure from the upstream of the Valve to the Control Chamber and the valve stays closed.
The Electric Pilot Actuator is available in types of "energized to open" and "energized to close" the Valve. The Valve 700D-02C11/3 opens wide when the Solenoid Valve is energized ; Valve 700D-02C12/4 - when the Solenoid Valve is de-energized. This operation is followed by a release of water from the Valve Control Chamber, simultaneously isolating the Control Chamber from the water supply.
Consequently, the Control Valve opens wide introducing a flow of water to the system. The Valve 700D-02C11/3 remains open unless the electric power ceases, Valve 700D-02C12/4 - electric power restored, and then it closes tight to be in a set position again. The Electric Pilot Actuator is also available with magnetic latch type solenoid valve. When the Solenoid Valve is pulsed, it is latched and holds the Control Valve in an open position until resetting.
Opening and/or closing speed controls, when added, control the pace of water relieved from, or introduced to, the Valve Control Chamber, thus slowing down the opening and/or closing speed of the Control Valve. Such features would be required when the pipe line system is fairly long and/or going downhill and there is a danger of water hammer due to abrupt changes of water flow velocity.
A Flow Pressure Switch is a compact unit that provides, when connected to the piping system, both local and remote indications of the valve's position and whether flow takes place. When the Control Valve opens and flow starts, the pressure built in the outlet of the valve is detected by the pressure switch. The basic pressure switch contains a single SPDT switching element in a NEMA rated water tight enclosure (an explosion-proof enclosure is optional).
The Emergency Release Valve enables an Valve opening regardless of the electric actuation.

Schematic Control Diagrams – 700D - 02C11/2/3/4



1 **Inbal** Automatic Water Control Valve
2 Electric Pilot Actuator (E.P.A.)
3 Emergency Release Valve
4 Supply Pressure Gauge

Installation

1. When the Control Valve is delivered, carefully unpack and check that there has been no damage to the operating components.
2. Always flush the pipelines before installing the **Inbal**Valve.
3. Place the Control Valve in the piping. The valve can be mounted in any position. Verify that the arrow on the Housing matches the actual flow direction. Determine which side the system will be accessed from and locate the Valve on the piping system accordingly.
4. A Water Supply Shutoff Valve, placed upstream to the Control valve for shutting off when servicing, is considered standard good practice.
5. Install the Control Valve in the pipeline. Use gaskets, bolts, stud bolts, bolt sleeves, and nuts as required by the valve ends.
6. Complete the trim assembly by connecting the preassembled sections. Refer to the applicable Trim Chart and Installation Guide.
7. The Solenoid Valve must be wired in accordance with the requirements of the authorities having jurisdiction and/or NEC, IEC, or CENELEC standards and Codes. Wiring should be done by a licensed electrician.
8. Verify that the Shutoff Rotor and the Emergency Release Valve are in SET position.
9. Test the Control Valve according to the Testing procedure.

Resetting

The Control Valve system must be reset and restored to service as soon as possible after automatic, emergency, or manual actuation:

! After electric operation - reset the solenoid valve (de-energize the "energized to open" type, energize the "energized to close" type, or release the "magnetic latch" type). The Control Valve will close drip tight and the Electric Alarm is reset. Verify that the supply pressure has been restored to the normal level.

! After manual emergency operation - restore the Emergency Release Valve to SET position. The Control Valve will close drip tight. Verify that the supply pressure has been restored to the normal level.

Maintenance, Inspection, & Testing

It is recommended that periodic inspections and tests be conducted by qualified personnel to ensure that the Control Valve is in good operating condition. It is recommended that the Control Valve be tested, operated, cleaned, and inspected at least on a routine basis.

Inspection

A monthly Inspection is recommended:

1. Verify that the Water Supply Valve is sealed in a fully open position.
2. Verify that the Shutoff Valve device in the E.P.A. is sealed in a fully open position (The Shutoff Rotor should be in SET position).
3. Verify that the Emergency Release Valve is in SET position.
4. The Pressure Gauge should be checked for accuracy.
5. Visually inspect for disconnected wires, broken or missing parts, or other evidence of impaired protection.

Strainer Cleaning

A quarterly Strainer Cleaning is recommended:

1. Close the Shutoff Valve device in the E.P.A. (Turn the Shutoff Rotor to MAINTENANCE position).
2. Unscrew the Strainer Plug in the E.P.A., remove the screen and clean. Reinstall the screen and the plug.
3. Open the Shutoff Valve device in the E.P.A. (Return the Shutoff Rotor to SET position). WARNING: The shutoff Rotor must be in SET position, otherwise proper operation of the valve will be interrupted.

Electric Actuation Testing

A semi-annual Electric Actuation Testing is recommended. By performing the Electric Actuation Testing, water will flow from all open sprinklers and/or nozzles Prevent damage by taking the necessary precautions.

1. Operate the solenoid valve by energizing ("energized to open" type), de-energizing ("energized to close" type), or by "pulsing" ("magnetic latch" type) the wires leading to the solenoid valve. The E.P.A. allows the water in the Valve Control Chamber to exhaust to the atmosphere. The Control Valve opens and water will flow to the system. The Electric Alarm should operate. Verify that the whole system is working properly.
2. Reset the solenoid valve by deenergizing ("energized to open" type), by energizing ("energized to close" type), or by "pulsing" ("magnetic latch" type) the wires leading to the solenoid valve. The E.P.A. interconnects the Valve inlet pressure with the Control Chamber. Verify that the Control Valve closes drip tight and the Electric Alarm is reset.

Emergency Release Testing

An annual Emergency Release Testing is recommended. By performing the Emergency Release Testing, water will flow from all open sprinklers and/or nozzles. Prevent damage by taking the necessary precautions.

1. Turn the Emergency Release Valve handle to OPEN position, to allow the water in the Valve Control Chamber to exhaust out of the Vent Port of the Emergency Release Valve to the atmosphere. After a trickle of water is relieved, the exhausted flow should stop. The Electric Alarm should operate and the Control Valve opens wide and water will flow to the system. Verify that the whole system is working properly.
2. Return the Emergency Release Valve handle to SET position to introduce water from the Valve inlet to the Control Chamber. Verify that the Control Valve closes drip tight.

Removal

To remove the Control Valve:

1. Close all the pressure supply valves:
   a) Water Supply Shutoff Valve .
   b) Shutoff Valve device in the E.P.A.
2. Open the Emergency Release Valve to release the water pressure from the **Inbal-** Valve Control Chamber.
3. Disconnect the electric wires from the solenoid coil. The electric work should be done by a licensed electrician.
4. Remove the Control Valve from the line for inspection.
5. To reinstall, follow the Installation procedure (use new gaskets for flanged or wafer valve).

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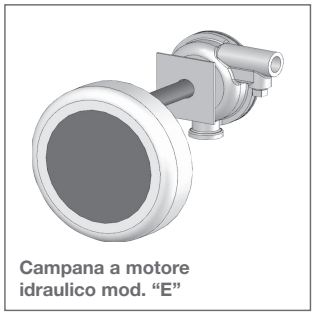
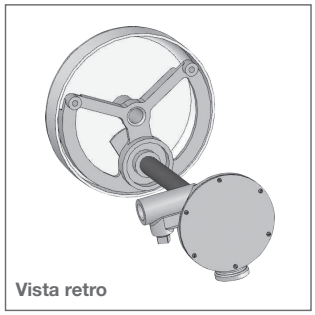
Campana a Motore Idraulico modello E

doc. nr. A02016A 19_07_2017



Campana a motore idraulico mod. "E"



Vista retro

APPROVED
For Listing/Approval Details and Limitations contact MEFA Sales Representative.

La Campana a Motore Idraulico è destinata a quegli installatori di impianti antincendio che cercano la qualità, l'efficienza e la sicurezza. Questo apparecchio è leggero (pesa meno di 7 kg.), è robusto e facile da installare. Il suo disegno è il risultato dei molti suggerimenti di installatori che erano alla ricerca di qualcosa che rispondesse alle loro necessità.

Norme di installazione per le campane di allarme a motore idraulico (da NFPA n.13)

Le Campane di Allarme a motore idraulico devono essere montate il più vicino possibile alla relativa valvola ad umido, a secco o ad altro tipo di valvola di allarme così da evitare il collegamento alla campana con tubi troppo lunghi o con troppi raccordi. La lunghezza totale del tubo di collegamento non dovrebbe essere maggiore di 25 metri e la campana non dovrebbe essere collocata a più di 6 metri sopra la valvola di allarme. Quando è assolutamente necessario superare la lunghezza di 25 metri il diametro della tubazione dovrebbe essere maggiorato per compensare la perdita di carico derivante dalla maggiore lunghezza. Per tutti i tipi di impianto sprinkler nella tubazione dell'allarme deve essere montato un filtro da ¾" di tipo approvato: questo deve essere montato all'uscita dalla valvola di allarme salvo quando è usata una camera di ritardo nel qual caso il filtro deve essere installato all'uscita dalla camera di ritardo (se la camera di ritardo è provvista di un proprio filtro integrale questo filtro è sufficiente). Le campane di allarme a motore idraulico devono essere protette dalle intemperie, devono essere perfettamente in squadra e montate in modo da non spostarsi. Le tubazioni che servono la campana di allarme devono essere di acciaio zincato o di ottone e di diametro non minore di ¾" o anche più grandi quando molto lunghe o dove la pressione dell'acqua è particolarmente bassa. Il tubo deve potersi svuotare attraverso un orifizio di drenaggio del diametro di circa 3 mm. Lo scarico deve sboccare in un luogo idoneo. Nessuna campana idraulica dovrebbe essere collegata a più di tre impianti sprinkler e questi impianti dovrebbero comunque servire la stessa area di incendio

Descrizione

La Campana a Motore Idraulico Modello "E" è un apparecchio autonomo che suona in continuazione un allarme durante il funzionamento di un impianto antincendio sprinkler. Progettata secondo criteri di provata semplicità la campana a motore idraulico Modello "E" è sempre pronta ad entrare in funzione in caso di incendio.

Montaggio

1. Forare la parete quanto occorre per il passaggio di una tubazione da ¾".
2. Tagliare il tubo di protezione dell'albero (pezzo 9-non fornito con la campana) per la lunghezza appropriata: in genere lungo quanto lo spessore della parete + 75 mm.
3. Avvitare il tubo di protezione dell'albero al supporto della campana (pezzo 13) senza rimuovere la vite centrale (pezzo 14) e posizionare l'intero complesso sulla faccia esterna del muro con il tubo di protezione attraverso il muro.
4. Svitare le sei viti del coperchio della turbina (pezzo 6), togliere il coperchio (pezzo 4), la guarnizione del coperchio (pezzo 7) e la girante (pezzo 2) dal corpo della turbina (pezzo 1).

4a. Avvitare il corpo della turbina sul tubo di protezione dell'albero interponendo tra la parete ed il corpo della turbina la rondella convessa (pezzo 10).

5. Inserire l'albero (pezzo 8) attraverso il tubo di protezione e nel martelletto battente (pezzo 15).
6. Tagliare l'albero a fi lo della flangia della bronzina (pezzo 3) nel corpo della turbina.
7. Ruotare la girante per ottenere un appropriato allineamento.
8. Applicare il coperchio e la guarnizione al corpo della turbina fissandolo con le sei viti.

Funzionamento

Quando la valvola di allarme dell'impianto sprinkler si apre (come conseguenza della attivazione di uno o più erogatori automatici) parte del flusso di acqua è inviato nella tubazione dell'allarme ed, attraverso questa, alla campana a motore idraulico mettendo in rotazione la girante (pezzo 2). La girante trasmette il movimento di rotazione al martelletto battente (pezzo 15) che provoca il suono di allarme. Il flusso d'acqua, dopo avere urtato la girante, viene scaricato attraverso la tubazione di drenaggio avvitata nella parte inferiore del corpo della turbina.

Manutenzione

1. Il filtro da ¾" collocato alla valvola di allarme dell'impianto sprinkler o nella tubazione dell'allarme dovrebbe essere pulito periodicamente per consentire un efficace deflusso dell'acqua verso la campana.
2. Il tappo di spurgo (pezzo 5) dovrebbe essere svitato e ripulito per evitare l'accumulo di sporcizia che ha eventualmente oltrepassato il filtro.
3. L'interno dell'elemento sonoro della campana (gong-pezzo 11) dovrebbe essere ispezionato periodicamente per rimuovere eventuali nidi di insetti o altro materiale estraneo.

Campana a Motore Idraulico modello E

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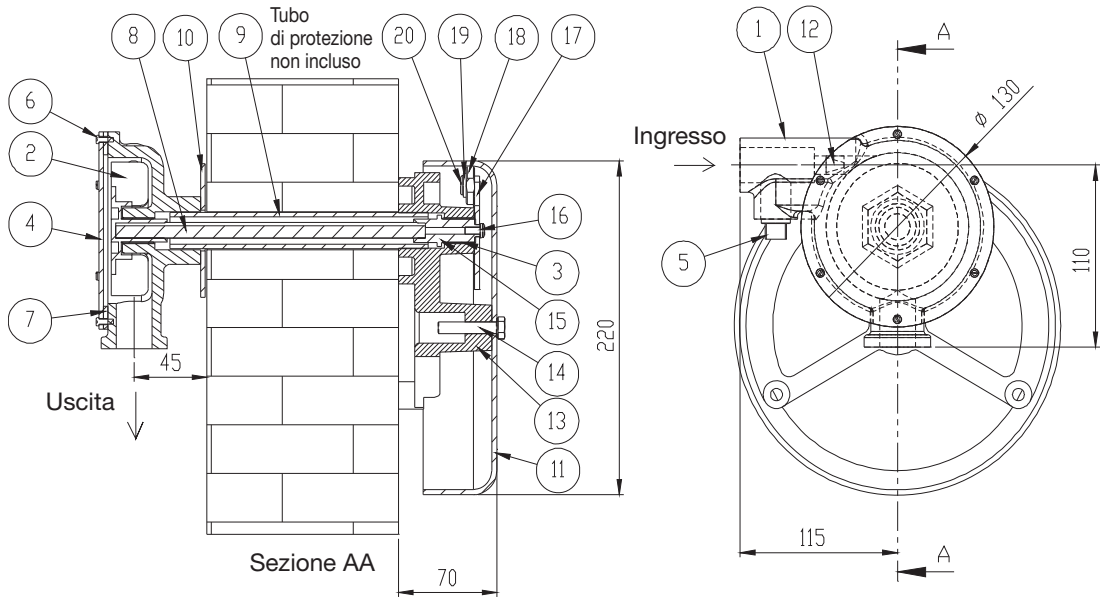

Rev. 1

Ref.	Descrizione	Ref.	Descrizione
1	Corpo turbina	11	Campana
2	Girante	12	Restrizione
3	Bronzina	13	Supporto
4	Coperchio corpo	14	Bullone
5	Tappo spurgo	15	Albero battente
6	Viti coperchio	16	Vite battente
7	Guarnizione	17	Supporto battente
8	Albero	18	Battente
9	Protez. albero	19	Rondella battente
10	Rondella	20	Rivetto battente

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EPS10-1 and EPS10-2 Alarm Pressure Switches

doc. nr. A02017A 19_07_2017

EPS10 Series switches are designed for use in wet, dry, deluge, and pre-action automatic sprinkler systems to indicate a discharge from a sprinkler.

Features

- Sensitivity adjustment wheel, no special tools required
- Reinforced diaphragm resists pressure spikes
- Two conduit entrances
- Both one- and two-switch models available

The EPS10-1 has a single SPDT switch while the EPS10-2 model contains two SPDT switches. The EPS10 Series features field adjustable pressure sensitivity to provide an alarm response between 4 and 20 psi. It is factory set to respond at 4 – 8 psi on rising or falling pressure. The pressure adjustment wheel requires no special tools and does not affect switch synchronization on the EPS10-2. The EPS10 Series switches are NEMA 4 rated.

Specifications, EPS10-1 and EPS10-2

Architectural/Engineering Specifications EPS10-1 (SPDT), EPS10-2 (2/SPDT)

Model shall be an EPS10-1 or EPS10-2 pressure type waterflow switch as manufactured by of St. Charles, IL. They shall be installed on the sprinkler system with connection as shown on the drawings and/or as specified herein. Pressure switches shall be of the bellows-activated type. Switches shall have a maximum service pressure rating of 300 psi and shall be factory adjusted to operate at a pressure of 4 – 8 psi. There shall be one (1) or two (2) SPDT contacts rated at 10.0 Amp @ 125/250 VAC and 2.5 Amp @ 6/12/24 VDC. The contractor shall furnish and install, where indicated on the plans, pressure switches according to appropriate NFPA standards. Switches shall be provided with a ½˝ NPT male pressure connection to be connected to the alarm check valve of a "wet" sprinkler system, into the intermediate chamber of a "dry" system, or to a pre-action or deluge valve. They shall be activated by any flow of water equal to or in excess of the discharge from one sprinkler head. Switches shall provide 1 knockout type and 1 open hole for ½˝ conduit fitting attachment and a ground screw provision for electrical grounding. The switch enclosure shall be weatherproof and carry a UL 4x/NEMA 4 rating when used with proper electrical fittings and conduit. The cover shall incorporate tamper-resistant screws. The unit shall be listed by Underwriters Laboratories, Inc. and approved by Factory Mutual.

Agency Listings

UL LISTED S739

FM APPROVED 0X0A7.AY 0D3A3.AY

ULC C5169

LPCB

7770-1209:147

VdS G4020028-27

Manufacturer: System Sensor

Specifications, EPS10-1 and EPS10-2 (continued)

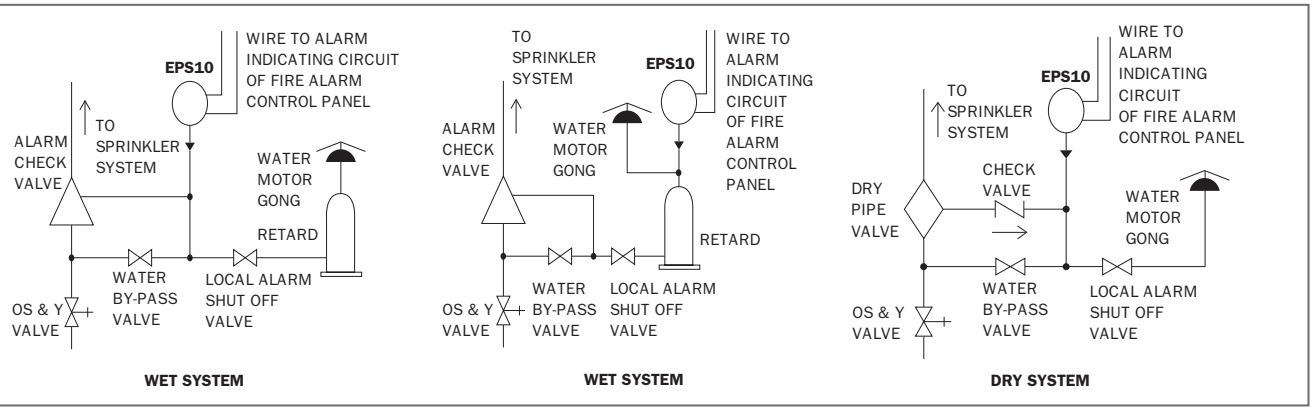
Physical/Operating Specifications

Maximum Operating Pressure	300 psi	**Operating Temperature Range**	Indoor or outdoor use: –40°F to 160°F (–40°C to 71°C)
Maximum Adjustment Pressure Range	4 to 20 psi	**Cover Tamper Switch**	UL Models: Optional P/N 546-8000 ULC Models: Factory Installed
Differential	Approximately 3 psi throughout range	**Enclosure**	Rated UL 4x, NEMA 4 for indoor or outdoor use
Factory Setting	Operates at rising pressure 4 to 8 psi	**Shipping Weight**	1.2 lbs. (.54 Kg)
Switch Contact Ratings	EPS10-1: One set SPDT (Form C) EPS10-2: Two sets SPDT (Form C) 10.0 A, ½ HP @ 125/250 VAC 2.5 A @ 6/12/24 VDC	**Service Use**	Automatic Sprinkler: NFPA 13 One or Two Family Dwelling: NFPA 13D Residential Occupancies up to 4 Stories: NFPA 13R National Fire Alarm Code: NFPA 72
Pressure Connection	½˝ NPT male glass reinforced nylon	**Warranty**	3 years
Dimensions	5.12˝ H × 3.325˝ W × 4.250˝ L (13.0 cm × 8.4 cm × 10.8 cm)		

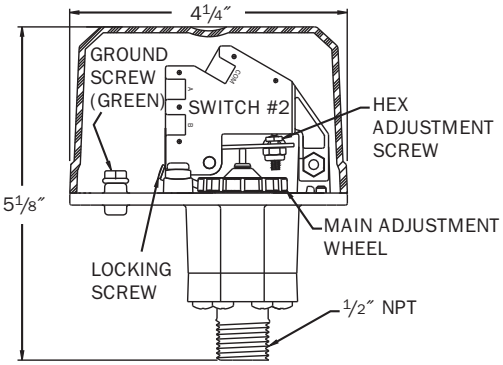
EPS10-1 and EPS10-2 Alarm Pressure Switches

doc. nr. A02017A 19_07_2017

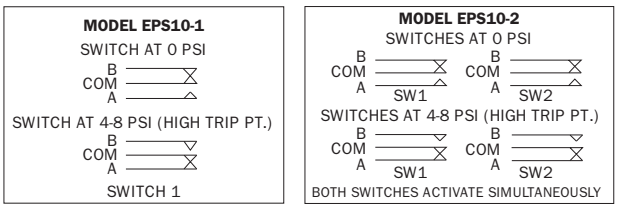
Typical Sprinkler Applications



Pressure Switch Basic Dimensions



Electrical Connections



Ordering Information

Part No.	Description
EPS10-1	Alarm Waterflow Pressure Switch, One SPDT, 4–20 PSI
EPS10-2	Alarm Waterflow Pressure Switch, Two SPDT, 4–20 PSI
EPSA10-1	ULC/Canadian Version
EPSA10-2	ULC/Canadian Version
Replacement Parts	
S07-66-02	Replacement Tamper Screws for Cover of EPS
WFDW	Replacement Tamper Proof Wrench for Cover of EPS
546-8000	Cover Tamper Switch for EPS Series

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EPS40-1 and EPS40-2 Supervisory Pressure Switches

doc. nr. A02018A 19_07_2017

EPS40 Series switches are designed for use in dry pipe systems or pressure tanks and water pressure supplies of automatic water control valves.

Features

- Sensitivity adjustment wheel, no special tools required
- Reinforced diaphragm resists pressure spikes
- Two conduit entrances
- Both one- and two-switch models available

The EPS40-1 has a single SPDT switch while the EPS40-2 model contains two SPDT switches. The EPS40 Series features field adjustable pressure sensitivity to provide an alarm response between 10 and 100 psi. All models are factory set for use in a nominal 40 psi system. The EPS40-1 is factory set to respond at 30 psi at decreasing pressure while the EPS40-2 is factory set to respond at 50 psi on rising pressure and 30 psi at decreasing pressure. The pressure adjustment wheel requires no special tools and does not affect switch synchronization on the EPS40-2. The EPS40-1 and EPS40-2 supervisory pressure switches are NEMA 4 rated.

Specifications, EPS40-1 and EPS40-2

Architectural/Engineering Specifications EPS40-1 (SPDT), EPS40-2 (2/SPDT)
Model shall be an EPS10-1 or EPS10-2 pressure type waterflow switch as manufactured by of St. Charles, IL. They shall be installed on the sprinkler system with connection as shown on the drawings and/or as specified herein. Pressure switches shall be of the bellows-activated type. Switches shall have a maximum service pressure rating of 300 psi and shall be factory adjusted to operate at a pressure of 4 – 8 psi. There shall be one (1) or two (2) SPDT contacts rated at 10.0 Amp @ 125/250 VAC and 2.5 Amp @ 6/12/24 VDC. The contractor shall furnish and install, where indicated on the plans, pressure switches according to appropriate NFPA standards. Switches shall be provided with a ½˝ NPT male pressure connection to be connected to the alarm check valve of a “wet” sprinkler system, into the intermediate chamber of a “dry” system, or to a pre-action or deluge valve. They shall be activated by any flow of water equal to or in excess of the discharge from one sprinkler head. Switches shall provide 1 knockout type and 1 open hole for ½˝ conduit fitting attachment and a ground screw provision for electrical grounding. The switch enclosure shall be weatherproof and carry a UL 4x/NEMA 4 rating when used with proper electrical fittings and conduit. The cover shall incorporate tamper-resistant screws. The unit shall be listed by Underwriters Laboratories, Inc. and approved by Factory Mutual.

Agency Listings

UL LISTED S739

LPCB 118f/01

FM APPROVED 0X0A7.AY 0D3A3.AY

VdS G4020027

7770-1653:0117

ULC C5169

Manufacturer: System Sensor

Specifications, EPS40-1 and EPS40-2 (continued)

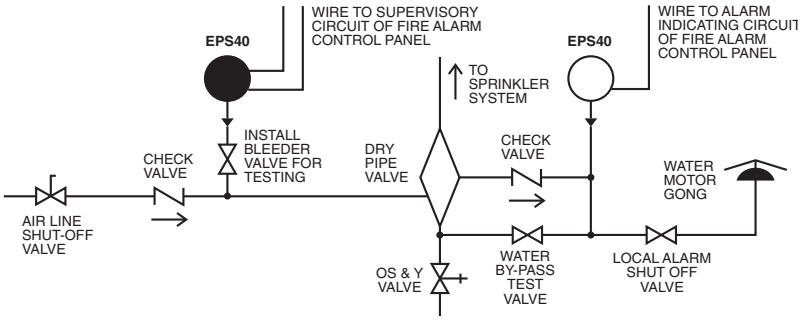
Physical/Operating Specifications

Maximum Operating Pressure	300 psi	**Operating Temperature Range**	Indoor or outdoor use: –40°F to 160°F (–40°C to 71°C)
Maximum Adjustment Pressure Range	10 to 100 psi	**Cover Tamper Switch**	UL Models: Optional P/N 546-8000 ULC Models: Factory Installed
Differential	Approximately 3 psi @ 10 psi, 6 psi @ 100 psi	**Enclosure**	Rated UL 4x, NEMA 4 for indoor or outdoor use
Factory Setting	EPS40-1 operates at decreasing pressure at 30 psi EPS40-2 operates at increasing pressure at 50 psi and decreasing pressure at 30 psi	**Shipping Weight**	1.2 lbs. (.54 Kg)
Switch Contact Ratings	EPS10-1: One set SPDT (Form C) EPS10-2: Two sets SPDT (Form C) 10.0 A, ½ HP @ 125/250 VAC 2.5 A @ 6/12/24 VDC	**Service Use**	Automatic Sprinkler: NFPA 13 One or Two Family Dwelling: NFPA 13D Residential Occupancies up to 4 Stories: NFPA 13R National Fire Alarm Code: NFPA 72
Pressure Connection	½˝ NPT male	**Warranty**	3 years
Dimensions	5.12˝ H × 3.325˝ W × 4.250˝ L (13.0 cm × 8.4 cm × 10.8 cm)		

EPS40-1 and EPS40-2 Supervisory Pressure Switches

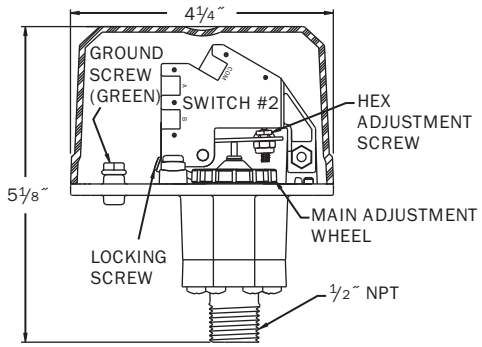
doc. nr. A02018A 19_07_2017

Typical Sprinkler Applications

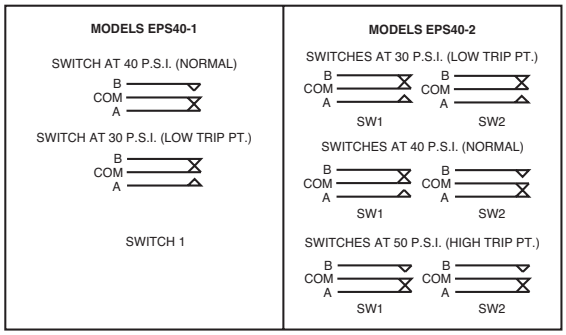


DRY SYSTEM

Pressure Switch Basic Dimensions



Electrical Connections



Ordering Information

Part No.	Description
EPS40-1	Low Pressure Supervisory Switch, One SPDT, 10–100 PSI
EPS40-2	High/Low Pressure Supervisory Switch, Two SPDT, 10–100 PSI
EPSA40-1	Low Pressure Supervisory Switch, One SPDT, 10–100 PSI (ULC Model)
EPSA40-2	High/Low Pressure Supervisory Switch, Two SPDT, 10–100 PSI (ULC Model)
Replacement Parts	
S07-66-XX	Replacement Tamper Screws for Cover of EPS
WFDW	Replacement Tamper Proof Wrench for Cover of EPS
546-8000	Cover Tamper Switch for EPS Series

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WFDEN Series
Waterflow Detector

doc. nr. A02019A 19_07_2017

The WFDEN series is compatible with pipe diameters ranging from 50mm through 200mm and can be mounted in a vertical or horizontal position.

Features

- Compliant with Construction Products Regulation
- New directional cover allows installers and inspectors to easily see the direction of flow.
- European models are IP56 rated
- New cover provides a better seal, is lighter weight, not painted and corrosion resistant.
- Sealed retard mechanism immune to dust and other contaminants
- Less exposed metal reduces shock hazard, plastic cover acts as insulator and is resistant to arcing.
- Visual switch activation
- Audible switch activation (73 dBA)
- Field-replaceable timer/switch assembly.
- Accommodates up to 12 AWG wire
- 100 percent synchronization activates both alarm panel and local bell or horn strobe.
- Tamper-resistant cover screws
- Improved water sealing
- Reduced product weight
- Wire-ready terminals
- Improved wiring with new terminal block layout
- Snap-in optional cover tamper switch
- Timer repeatability
- Dial accuracy

The new **WFDEN Series** waterfl ow detectors from consists of a rugged, IP56-rated enclosure that is more damage resistant than previous metal designs. The waterfl ow detector is designed for both indoor and outdoor use, with the widest available temperature range, from 0°C to 68°C (32°F to 55°F).
Models are equipped with tamper-resistant cover screws to prevent unauthorized entry. Inside, two sets of SPDT (Form C) synchronized switches are enclosed in a durable terminal block with new layout designed to make wiring easy with wire ready terminals, COM terminals are on a different elevation, large barrier between switches and easy to read raised textured lettering all make wiring easy. An optional cover tamper switch is available, securely snaps into place, no tools required.
The WFDEN series incorporates a mechanical time delay feature, which minimizes the risk of false alarm due to pressure surges or air trapped in the fi re sprinkler system. The larger and easy to turn timer dial makes setting the waterfl ow detector easy with high contrast pad printed markings and three tabs to help with turning.
The WFDEN series is designed for accuracy and repeatability. The detector also offers improved performance during vibration in riser applications where detectors are exposed to a large in rush of water.

Manufacturer: System Sensor

Agency Listings

VdS CE FM APPROVED LPCB

Specifications, EPS40-1 and EPS40-2

Engineering Specifications
Vane-type waterfl ow detectors shall be installed on system piping as designated on the drawing and/or as specifi ed herein. Detectors shall mount on any clear pipe span of the appropriate nominal size, either a vertical upfl ow or horizontal run, at least 15 cm (6 in) from any fi ttings that may change water direction, fl ow rate, or pipe diameter or no closer than 61 cm (24 in) from a valve or drain. The detector shall respond to waterfl ow in the specifi ed direction after a preset time delay that is fi eld adjustable. The delay mechanism shall be a sealed mechanical pneumatic unit with visual and audible indication of actuation. The actuation mechanism shall include a ethylene vinyl acetate vane inserted through a hole in the pipe and connected by a mechanical linkage to the delay mechanism. Outputs shall consist of dual SPDT switches (Form C contacts). Two conduit entrances for standard fi ttings of commonly used electrical conduit shall be provided on the detectors. A grounding provision is provided. Unless noted, enclosures shall be IP56-rated. All detectors shall be Factory Mutual for indoor or outdoor use.

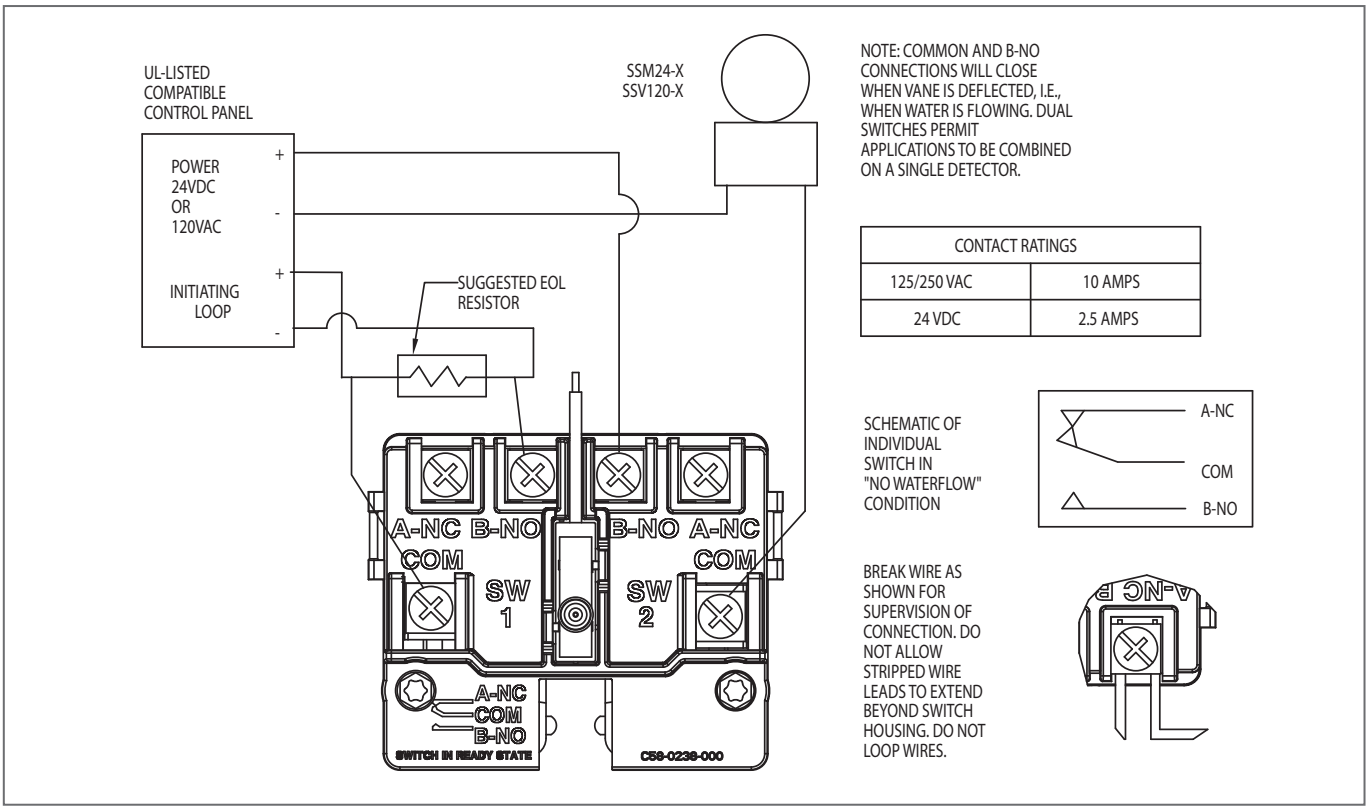
Standard Specifications

Static Pressure Rating	LPC: 17.25 BAR (250 PSI) VdS: PN16 (16 BAR, 232 PSI)	**Operating Temperature Range**	32°F to 120°F (0°C to 49°C)
Maximum Surge	18 Feet Per Second (FPS)	**Enclosure Rating***	IP56
Conduit Entrances	Two openings 22.2 mm (.875 in.) diameter. NEMA 4 rated plugs	**Cover Tamper Switch**	Standard with ULC models, optional for UL and European models, part no. CTS
Contact Ratings	Two sets of SPDT (Form C) 10.0 A, ½ HP @ 125/250 VAC 2.5 A @ 6/12/24 VDC	**Warranty**	3 Years

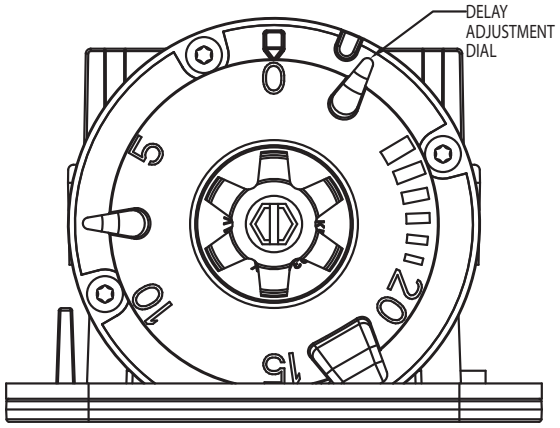
Standard Specifications

Model	Ref. Pipe Size mm (in.)	Triggering Flow Rate	Nominal Pipe O.D. (mm)		Wall Thickness (mm)	
			LPC	VdS	LPC	VdS
WFD20EN	50 (2)	47	60.3	60.3	3.6	2.3/2.9
WFD25EN	65 (2½)	49	76.0	76.1	3.6	2.6/2.9
WFD30EN	80 (3)	47	88.8	88.9	4.0	2.9/3.2
WFD40EN	100 (4)	53	114.1	114.3	4.5	3.2/3.6
WFD60EN	150 (6)	55	165.1	168.3	5.0	4.0/4.5
WFD80EN	200 (8)	64	219.1	219.1	6.3	4.5/5.9

WFDEN Field Wiring Diagram

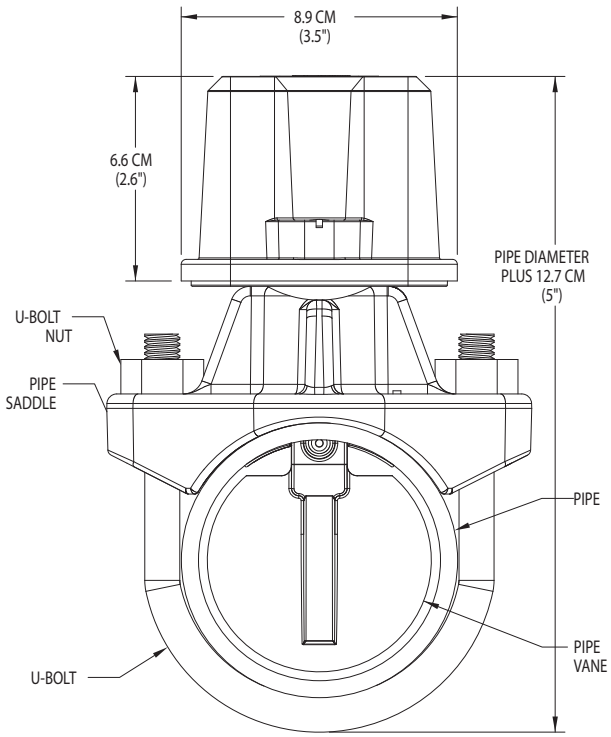


Delay Adjustment Dial



NOTE: NUMBER ON DIAL IS APPROXIMATE TIME DELAY IN SECONDS.

Overall Dimensions, Installed



OVERALL WIDTH = PIPE DIAMETER + 6.4 CM (2.5")

Ordering Information

UL Model	Pipe Size	Hole Size	Torque Setting
WFD20EN	50mm (2 in.)	31.8mm (1¼ in.)	40.7 - 47.5 NT-M (30 - 35 FT-LBS)
WFD25EN	65mm (2½ in.)	31.8mm (1¼ in.)	40.7 - 47.5 NT-M (30 - 35 FT-LBS)
WFD30EN	80mm (3 in.)	50.8mm (2 in)	61.6 - 67.8 NT-M (45 - 50 FT-LBS)
WFD40EN	100mm (4 in.)	50.8mm (2 in.)	61.6 - 67.8 NT-M (45 - 50 FT-LBS)
WFD60EN	150mm (6 in.)	50.8mm (2 in.)	61.6 - 67.8 NT-M (45 - 50 FT-LBS)
WFD80EN	200mm (8 in.)	50.8mm (2 in.)	61.6 - 67.8 NT-M (45 - 50 FT-LBS)
Accessories			
CTS	Tamper-proof switch kit		
WFDW	Tamper-proof wrench for cover		

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Multiple Jet Control 20mm Single Outlet

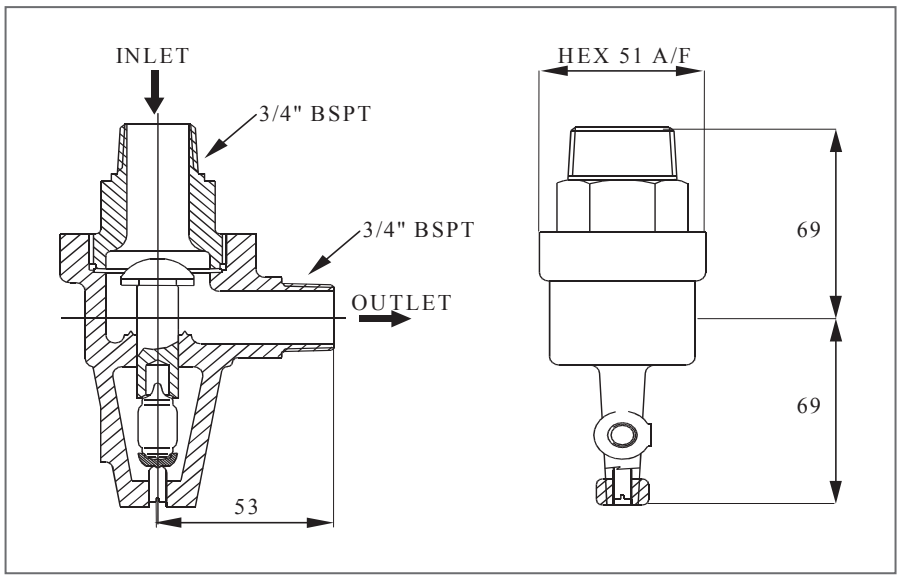
doc. nr. A02020A 19_07_2017

Multiple Jet Controls (MJC's) are for use in sprinkler or waterspray systems where it is required to operate small groups of open sprinklers or waterspray nozzles simultaneously.

Each MJC contains a frangible glass bulb sensitive to heat. The bulb is pre-loaded at the factory to hold a Nickel / Silver plate against a Brass seal which provides a water and air tight seal. The application of heat bursts the bulb releasing the disc and allowing water to flow.

PRESSURE LOSS THROUGH VALVE	
FLOW RATE Litres/Min	**PRESSURE LOSS** Bar
75	0.25
100	0.52
150	1.08
200	1.62
250	2.18

TECHNICAL SPECIFICATION	
Seal:	Nickel Silver
Weight:	0.825kg
Body:	Brass
Max. Pipework Velocity:	4.6 metres/second
Max. Working Pressure:	12.0 Bar
Max. Test Pressure:**	50% above normal working pressure; max 18 bar (normally for a limited period of 1 hour)
Standard temperatures	57 °C, 68°C, 79°C, 93°C, 141°C,



Approvals: LPC*

This data sheet is to be read in conjunction with Datasheet: MJC Installation & Maintenance

Size range: 20mm single outlet.
MJC's are also available with Metron electrical actuation – see separate data sheets.

MJC's are not suitable for use in saline or corrosive systems.

HANDLE WITH CARE DO NOT INSTALL IF DAMAGED/ OR DROPPED

Manufacturer: GW Sprinkler

* For a full list of current approvals refer to MEFA.
** MJC's are designed to withstand sustained pressure on the inlet. The downstream side of the valve mechanism is not air or water tight.

The right is reserved to vary or modify any specifications without prior notice.

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Dati Tecnici
Technical Data Sheet

Multiple Jet Control 40mm Double Outlet QR

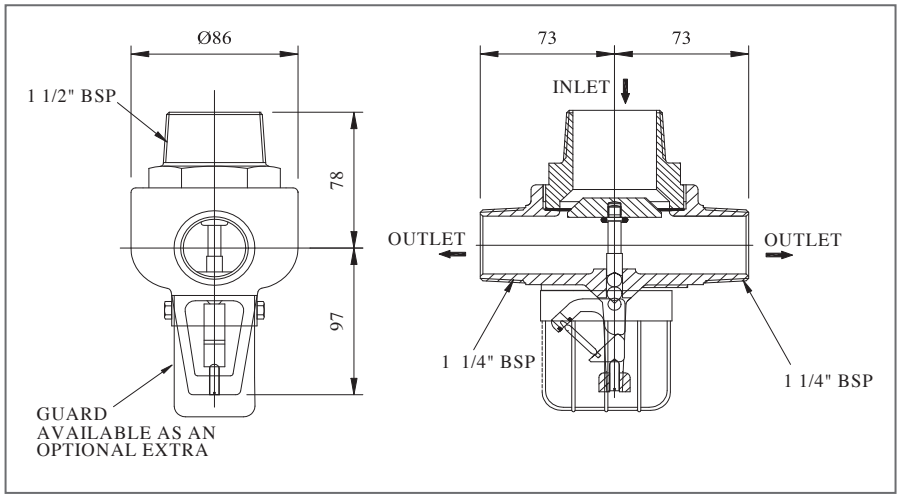
doc. nr. A02021A 19_07_2017

Multiple Jet Controls (MJC's) are for use in sprinkler or waterspray systems where it is required to operate small groups of open sprinklers or water spray nozzles simultaneously.

Each MJC contains a frangible glass bulb sensitive to heat. The bulb is pre-loaded at the factory to hold a Nickel / Silver plate against a Brass seal which provides a water and air tight seal. The application of heat bursts the bulb releasing the disc and allowing water to flow.

PRESSURE LOSS THROUGH VALVE	
FLOW RATE Litres/Min	**PRESSURE LOSS** Bar
60	0.02
100	0.035
125	0.05
200	0.06
250	0.09
300	0.15
350	0.21

TECHNICAL SPECIFICATION	
Seal:	Nickel Silver/Neoprene
Weight:	2.26kg (Guard 0.112kg)
Body:	Gunmetal
Max. Pipework Velocity:	4.6 metres/second
Max. Working Pressure:	12.0 Bar
Max. Test Pressure:**	50% above normal working pressure; max 18 bar (normally for a limited period of 1 hour)
Standard temperatures	57 °C, 68°C, 79°C, 93°C, 141°C



This data sheet is to be read in conjunction with Datasheets: MJC Installation & Maintenance

Size range: 40mm/50mm/80mm double outlet. MJC's are also available with Metron electrical activation – see separate data sheet.

MJC's are not suitable for use in saline or corrosive systems.

HANDLE WITH CARE. DO NOT INSTALL IF DAMAGED/ OR DROPPED

Manufacturer: GW Sprinkler

* For a full list of current approvals refer to MEFA.
** MJC's are designed to withstand sustained pressure on the inlet. The downstream side of the valve mechanism is not air or water tight.

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Dati Tecnici
Technical Data Sheet

Multiple Jet Control 40mm Double Outlet

doc. nr. A02022A 19_07_2017

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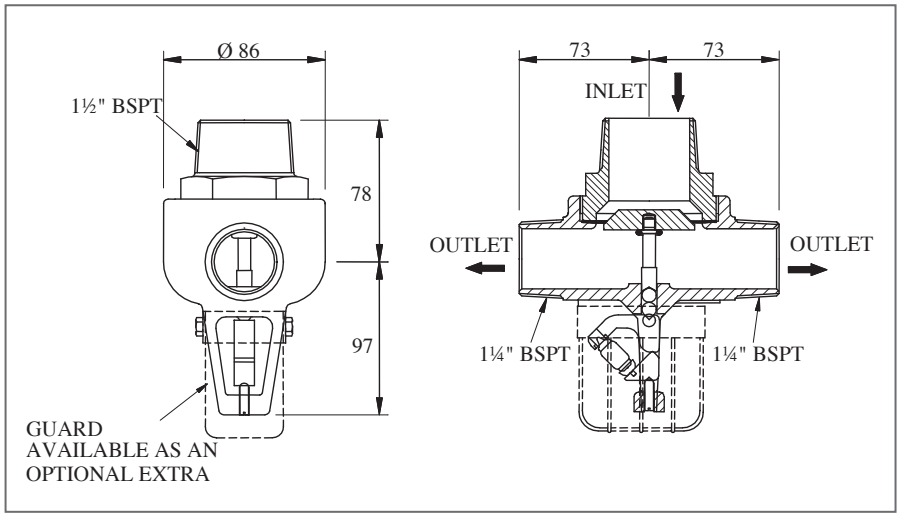
PRESSURE LOSS THROUGH VALVE	
FLOW RATE Litres/Min	**PRESSURE LOSS** Bar
60	0.02
100	0.035
125	0.05
200	0.06
250	0.09
300	0.15
350	0.21

TECHNICAL SPECIFICATION	
Seal:	Nickel Silver
Weight:	2.26kg (Guard 0.112kg)
Body:	Gunmetal
Max. Pipework Velocity:	4.6 metres/second
Max. Working Pressure:	12.0 Bar
Max. Test Pressure:**	50% above normal working pressure; max 18 bar (normally for a limited period of 1 hour)
Standard temperatures	57 °C, 68°C, 79°C, 93°C, 141°C,



Approvals: LPC*

This data sheet is to be read in conjunction with Datasheets: MJCInstallation&Maintenance

Size range: 40mm/50mm/80mm double outlet. MJC's are also available with Metron electrical activation – see separate data sheet.

MJC's are not suitable for use in saline or corrosive systems.

HANDLE WITH CARE. DO NOT INSTALL IF DAMAGED/ OR DROPPED

Manufacturer: GW Sprinkler

* For a full list of current approvals refer to MEFA.
** MJC's are designed to withstand sustained pressure on the inlet. The downstream side of the valve mechanism is not air or water tight.

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Dati Tecnici
Technical Data Sheet

Multiple Jet Control 50mm Double Outlet

doc. nr. A02023A 19_07_2017

Multiple Jet Controls (MJC's) are for use in sprinkler or waterspray systems where it is required to operate small groups of open sprinklers or waterspray nozzles simultaneously.

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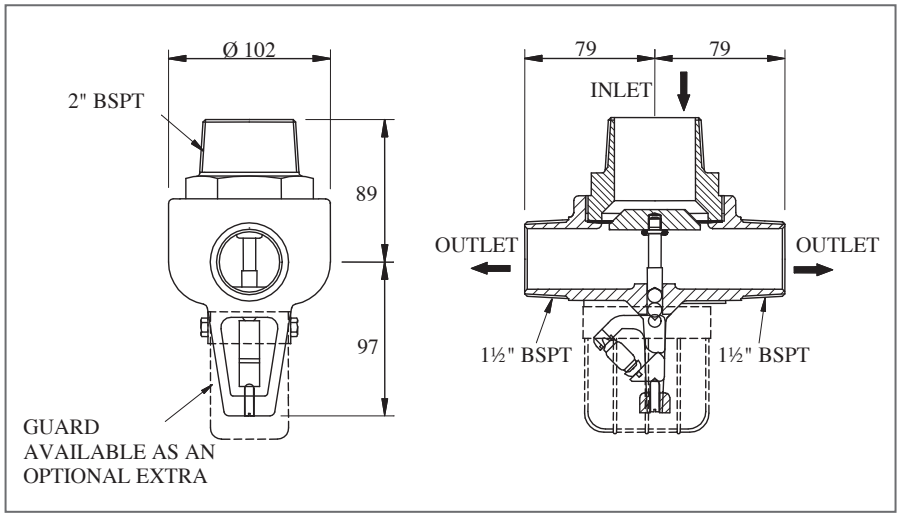
PRESSURE LOSS THROUGH VALVE	
FLOW RATE Litres/Min	**PRESSURE LOSS** Bar
100	0.01
200	0.03
300	0.11
400	0.18
500	0.28
550	0.37

TECHNICAL SPECIFICATION	
Seal:	Nickel Silver
Weight:	2.9kg (Guard 0.16kg)
Body:	Gunmetal
Max. Pipework Velocity:	4.6 metres/second
Max. Working Pressure:	12.0 Bar
Max. Test Pressure:**	50% above normal working pressure; max 18 bar (normally for a limited period of 1 hour)
Standard temperatures	57 °C, 68°C, 79°C, 93°C, 141°C



Approvals: LPC*

This data sheet is to be read in conjunction with Datasheets: MJCInstallation&Maintenance

Size range: 40mm/50mm/80mm double outlet.
MJC's are also available with Metron electrical activation – see separate data sheet.

MJC's are not suitable for use in saline or corrosive systems.

HANDLE WITH CARE. DO NOT INSTALL IF DAMAGED/ OR DROPPED

Manufacturer: GW Sprinkler

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