- The springless one-piece diaphragm pulse valves are especially designed for dust collector service applications, combining high flow, long life and extremely fast opening and closing to produce reliable and economical operation. The valves are selectable with integral or remote piloting.
- The high flow, angle type bodies, springless construction, in combination with the special diaphragm assemblies give the unique operating features required for dust collector service applications.
- Engineered to deliver a high-energy pulse of air while minimizing compressed air consumption. The valve delivers an average compressed air savings of 15%. Specific system savings can be calculated using this compressed air calculator. (Series 353 Air Savings Calculator)
- The design with patented Quick Mount Clamp connections eliminates the time consuming thread cutting and sealing resulting in maximum flexibility while the valve will be anchored to the pipes.
- Built-in silencers guarantee noise free operation and avoid foreign particles entering the valve.
- The integral operators are provided with epoxy moulded F-class coils.
   Various optional waterproof and explosion proof solenoids for use in potentially explosive atmospheres (gas & dust) according to Directive ATEX 2014/34/EU available.
- The valves satisfy all relevant EC directives.
- UL Recognized / CSA and RoHS compliant.

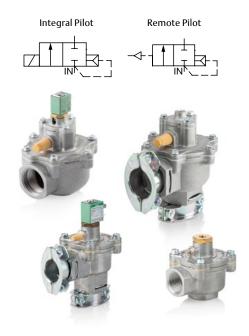
#### **General Valve Information**

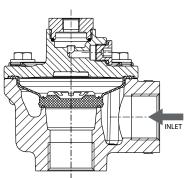
Body	Aluminium	
Core tube, core spring, core and plugnut	Stainless Steel	
Shading coil	Copper	
Sealings and disc	NBR (Nitrile)	
Diaphragm	TPE / TPE-LT	
Temperature	TPE - Standard	TPE - Low-Temp
range	Ambient -20°C to +85°C (-4°F to 185°F) Cleaning Fluid -15°C to +85°C (5°F to 185°F) Dusty Gas -20°C to +140°C (-4°F to 284°F)	Ambient -40°C to +60°C (-40°F to 140°F) Cleaning Fluid -40°C to +60°C (-40°F to 140°F) Dusty Gas -40°C to +60°C (-40°F to 140°F)

#### Electrical Characteristic(1)

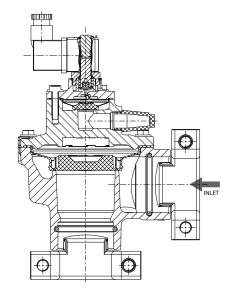
Relative Duty Time		10%, max. on time 1 min.
Coil insulation class		F - 155°C (311°F)
Electrical enclosure	orotection	Moulded enclosure IP 65
Electrical interface		Spade plug (Cable Ø 6 - 8 mm (0.24 - 0.32 inches)), DIN 46244
Electrical safety		IEC 335
Voltage		DC 24V; AC 24V/50-60Hz, 120/60 - 110/50V/Hz, 230V/50-60Hz

(1) More Information see pages 2 and 9 to 12





Threaded pipe connection



Quick Mount Clamp connection

## **Specifications**

_	Size				ating	Co	oil						Volt	age C	ode		(4)
e (in)	Orifice Size	Flow F	actor	Differ	sure ential (psi)	Wat (1	tage I)	Connection Type	Catalog Number	Electrical Interface (2)	(3)	09	120/60, 110/50	09-		<b>a</b> .	Dimension Type (4)
Pipe Size (in)	mm (in)	Kv (m³/h)	Cv	Min	Max.	AC	DC				Options (3)	24/50-60	120/60,	230/50-60	24/DC	Remote	Dimens
2-W	ay Nor	mally (	Closed	Alumi	inum V	alve,	TPE (C	One-Piece Diaphragm)									Drawing
								NPT- Thread	8353K111		A00						4
								G -Thread	G353K111	0X	AUU					00	4
								Clamp (NPT - Bonnet)	K353K111	(Remote Pilot)	6AG					00	2
3/4"	32 (1-1/4")	13	15					Clamp (G - Bonnet)	K353K111		A00						2
								NPT- Thread	8353K111								3
						6,3	22	G -Thread	G353K111	S1 - DIN Coil (w/ connector)	A00	FQ	F0	FH	F1		3
								Clamp	K353K111	,							1
								NPT - Thread	8353K211		A00						4
								G-Thread	G353K211	0X	7.00					00	4
								Clamp (NPT - Bonnet)	K353K211	(Remote Pilot)	6AG					00	2
1"	32 (1-1/4")	20	23	(30)	8,5 (125)			Clamp (G - Bonnet)	K353K211		A00						2
								NPT - Thread	8353K211								3
						6,3	22	G -Thread	G353K211	S1 - DIN Coil (w/ connector)	A00	FQ	F0	FH	F1		3
								Clamp	K353K211	,							1
								NPT - Thread	8353K311		A00						8
								G-Thread	G353K311	0X	7100					00	8
								Clamp (NPT - Bonnet)	K353K311	(Remote Pilot)	6AG	AG				00	6
1 1/2"	55 (1-1/2")	49	57					Clamp (G - Bonnet)	K353K311		A00						6
								NPT - Thread	8353K311								7
						6,3	22	G -Thread	G353K311	S1 - DIN Coil (w/ connector)	A00	FQ	F0	FH	F1		7
						(-)		Clamp	K353K311	(-)							5

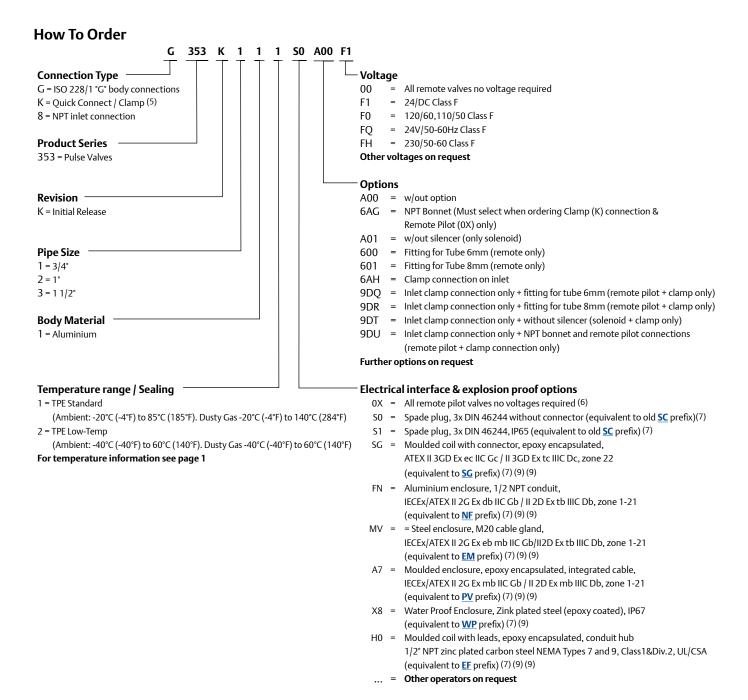
## **Quick Mount Clamp Connection - Remote Pilot Valves**

	•			
Pipe Size (in)	Connection Type	Catalog Number (Standard )	Catalog Number (Low-Temp)	Valve Details
2/4"	Clamp (NPT - Bonnet)	K353K1110X6AG00	K353K1120X6AG00	3/4", Clamp, Remote, NPT Bonnet
3/4"	Clamp (G - Bonnet)	K353K1110XA0000	K353K1120XA0000	3/4", Clamp, Remote, G Bonnet
411	Clamp (NPT - Bonnet)	K353K2110X6AG00	K353K2120X6AG00	1", Clamp, Remote, NPT Bonnet
1"	Clamp (G - Bonnet)	K353K2110XA0000	K353K2120XA0000	1", Clamp, Remote, G Bonnet
1.1/2"	Clamp (NPT - Bonnet)	K353K3110X6AG00	K353K3120X6AG00	1 1/2", Clamp, Remote, NPT Bonnet
1 1/2"	Clamp (G - Bonnet)	K353K3110XA0000	K353K3120XA0000	1 1/2", Clamp, Remote, G Bonnet

<sup>(1)</sup> Detailed technical information on the following page(s).
(3) More options for each construction type on the following page(s).

<sup>(2)</sup> Electrical operator types on the following page(s).
(4) Dimensions, see drawing(s) for each construction type on the following page(s).

## ASCO™ Pulse Valves



<sup>(5)</sup> Selecting G for Connection Type will also include G thread for the Remote Pilot Port and selecting 8 for Connection Type will include NPT thread for the Remote Pilot Port. To select the thread type on the Remote Pilot Port for the Clamp Connections, please choose the appropriate Option in digits 11-13 (i.e. 6AG for NPT thread).



"R000098ENUS-02\_04-21

<sup>(6)</sup> NON-ATEX VERSIONS 353-SERIES LISABLE IN ATEX ZONES

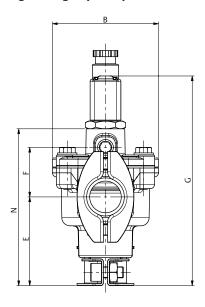
This product category does not require certification. There is no potential ignition risk to the products themselves. These product categories are named simple mechanical products. These products can be used in specific explosion zones 1 and 21 in compliance with our installation instructions. Pulse Valves and thei accessories are capable for use in explosive atmospheres in the form of gas, steam, mists and dust.

<sup>(8)</sup> Search prefix in www.emerson.com/asco to get detailed technical information. Please note that the valve pressure ratings with some of the ATEX enclosures will be To obtain the correct pressure rating please check the landing pages of the "2-Way Solenoid Pulse Valve Configurator".

<sup>(9)</sup> Coils class F only.

# **Version with Quick Mount Clamp connection**

# Fig.1: Integral pilot operated



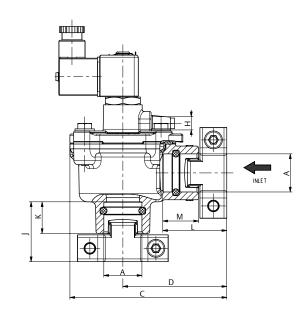
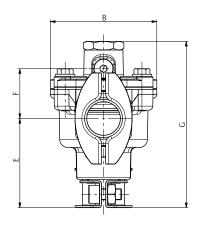


Fig.2: Remote pilot operated



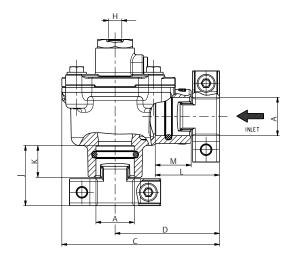
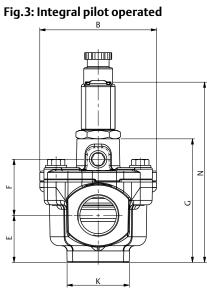


Fig.	A	В	С	D	E	F	G	Н	J	K	L	M	N	Weight kg (lbs)
1	G 3/4" NPT 3/4"	77 (3.032)	114 (4.488)	76 (2.992)	65 (2.559)	36 (1.417)	152 (5.984)	G1/8" NPT 1/8"	43.5 (1.713)	23 (0.906)	46.5 (1.831)	26 (1.024)	114 (4.488)	0.76 (1.68)
'	G 1" NPT 1"	77 (3.032)	120 (4.724)	82 (3.228)	71 (2.795)	40 (1.575)	162 (6.378)	G1/8" NPT 1/8"	44.5 (1.752)	23 (0.906)	44.5 (1.752)	23 (0.906)	124 (4.882)	0.90 (1.98)
,	3/4" NPT 3/4"	77 (3.032)	114 (4.488)	75.5 (2.972)	64.5 (2.539)	36 (1.417)	120.5 (4.744)	G1/8" NPT 1/8"	43.5 (1.713)	23 (0.906)	46.5 (1.831)	26 (1.024)	-	0.66 (1.46)
2	G 1" NPT 1"	77 (3.032)	120 (4.724)	81.5 (3.209)	70.5 (2.776)	40 (1.575)	130.5 (5.138)	G1/8" NPT 1/8"	44.5 (1.752)	23 (0.906)	44.5 (1.752)	23 (0.906)	-	0.80 (1.76)

# Version with threaded pipe connection



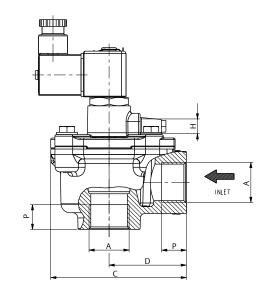
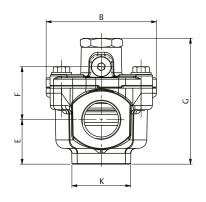


Fig.4: Remote pilot operated



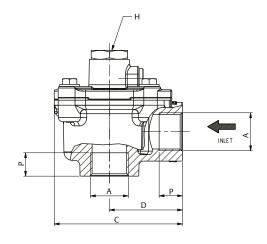
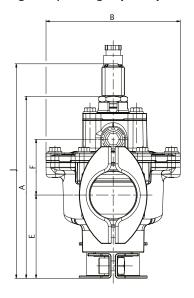


Fig.	A	В	С	D	E	F	G	Н	K	N	P	Weight kg (lbs)
	G 3/4" NPT 3/4"	77 (3.032)	90 (3.543)	51 (2.008)	31 (1.221)	37 (1.457)	81.5 (3.209)	G 1/8" NPT 1/8"	41 (1.614)	119 (4.685)	16 (0.630)	0.57 (1.26)
3	G 1" NPT 1"	77 (3.032)	90 (3.543)	51 (2.008)	31 (1.221)	37 (1.457)	81.5 (3.209)	G 1/8" NPT 1/8"	41 (1.614)	119 (4.685)	16 (0.630)	0.53 (1.17)
	G 3/4" NPT 3/4"	77 (3.032)	89.5 (3.524)	51 (2.008)	31 (1.221)	37 (1.457)	88 (3.465)	G 1/8" NPT 1/8"	41 (1.614)	-	16 (0.630)	0.47 (1.04)
4	G 1" NPT 1"	77 (3.032)	89.5 (3.524)	51 (2.008)	31 (1.221)	37 (1.457)	88 (3.465)	G 1/8" NPT 1/8"	41 (1.614)	-	16 (0.630)	0.44 (0.97)

# **Version with Quick Mount Clamp connection**

Fig.5: 1 1/2" Integral pilot operated



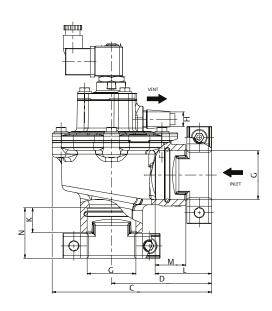
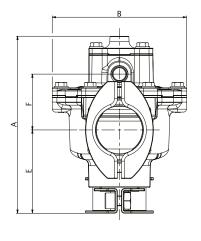


Fig.6: 1 1/2" Remote pilot operated



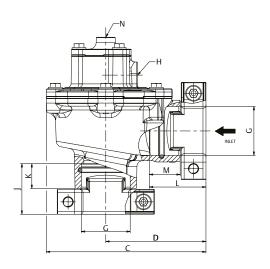
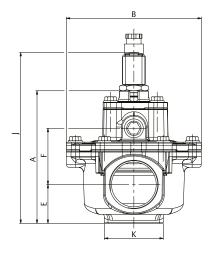


Fig.	Α	В	С	D	E	F	G	Н	J	K	L	M	N	Weight kg (lbs)
5	183.6 (7.228)	135.5 (5.335)	161 (6.339)	101 (3.976)	84 (3.307)	56.3 (2.217)	1 1/2"	G3/8"	216 (8.504)	25 (0.984)	57 (2.244)	31 (1.220)	51 (5.008)	1.78 (3.92)
6	178.5 (7.028)	135.5 (5.335)	161 (6.339)	101 (3.976)	84 (3.307)	56.5 (2.224)	1 1/2"	G3/8"	51 (2.008)	25 (0.984)	57 (5.244)	31 (1.220)	G 1/4"	1.68 (3.70)

# Version with threaded pipe connection

Fig.7: 1 1/2" Integral pilot operated



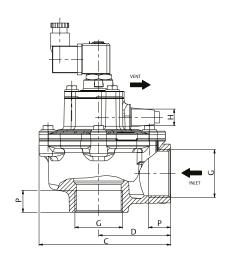
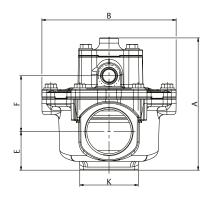


Fig.8: 1 1/2" Remote pilot operated



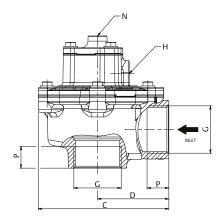


Fig.	Α	В	С	D	E	F	G	Н	J	K	N	P	Weight kg (lbs)
7	133 (5.236)	135.5 (5.335)	132 (5.197)	72 (2.835)	39 (1.535)	56.5 (2.224)	1 1/2"	G 3/8"	171 (6.732)	-	59 (2.323)	22 (0.867)	1.24 (2.73)
8	133.5 (5.256)	135.5 (5.335)	132 (5.197)	72 (2.835)	39 (1.535)	56.5 (2.224)	1 1/2"	G 3/8"	-	59 (2.323)	G 1/4"	22 (0.867)	1.14 (2.51)

#### Special designs and accessories

- ASCO Series E909 sequential controller to pilot valve Series 262 / 257.
- ASCO Series 110 / 125 pilot boxes containing 2 to 12 pilot solenoid valves
- The springless one-piece diaphragm pulse valves and the pilot valves can be equipped with explosion-proof solenoids in accordance with ATEX directives and national standards.
- Waterproof enclosure with embedded screw terminal coil according to CEE 10 (IP67)
- Further versions on request.

#### Installation

- The package consists of a pulse valve, solenoid (pre-assembled) and connector (supplied loose).
- The pulse valves can be mounted in any position without affecting operation.
- Threaded connections G (ISO 228/1), NPT, or patented Quick Mount Clamp connection.
- Installations with pipe lengths of more than 3 meters (9.8 feet) must be tested under operating conditions.
- Pipe diameters of 6 mm (0.24 inches) are recommended for all installations.
- In the patented Quick Mount Clamp connection tightness is achieved by the o-ring sealing on the pipes (3/4" = 26.4mm (1.0") to 27.4mm (1.1"); 1" = 33.2mm (1.3") to 34.2mm (1.4") and 1 1/2" = 47.8mm (1.88") to 48.8mm (1.92")) according to ISO 4200.
- Installation and maintenance instructions are included with each valve.
- Declarations of conformity are available on request.
- Version Ex e mb with prefix "EM / WSEM" Magnet housings have a cable gland with internal strain relief for cables with an outside diameter of 7 to 12 mm and the housing is equipped with an internal and external connection option for an earthing or equipotential bonding conductor.
- The Ex d enclosure with prefix "NF/WSNF" is equipped with a cable entry with 1/2" NPT thread M20 x 1.5 (prefix "ET") is optionally available. The housings are supplied without cable gland.

#### Remote Pilot

 When connecting the piping to the G or NPT 1/8" connection in the valve bonnet, the external ASCO™ pilot valve must be mounted as close as possible to the main pulse valve. Piping lengths of up to 3 meters (9.8 feet) have only a minor influence on the nulse time

## **Explanations of temperatures**

Valve temperature range The temperature range for the pulse valve is determined by selecting the diaphragm (TPE or TPE-LT).

Operator ambient temperature range The ambient temperature range for the operator is determined by the selected power level and type

of protection.

Total temperature range The temperature range of the entire pulse valve is determined by the limits of the two temperature

ranges listed above.

The dusty gas temperature range with the TPE standard diaphragm is -20°C (-4°F) to 140°C (284°F). Dusty gas temperature range

Pipe Size

**TPE Standard** 

(in)

Base Catalog

353

The dusty gas temperature range with the TPE low-temp diaphragm is  $-40^{\circ}$ C ( $-40^{\circ}$ F) to  $60^{\circ}$ C ( $140^{\circ}$ F)

Spare Parts

Kit

**Integral Pilot** 

Diaphragm

(1pc)

Diaphragm

(10 pcs)

Clamp Kit

(1x)

M200701 M200702 M200761

M200701 M200702

M200761

#### Rebuild Kits (1)

	Remote Pilot									
Pipe Size	Base Catalog	Diaphragm Kit	Diaphragm Kit	Clamp Kit						
(in)	353	(1pc)	(10 pcs)	(1x)						
TPE Stan	ndard									
3/4"	353K111	M200607	14200600	M200701						
1"	353K211	M200697	M200699	M200702						
1 1/2"	353K311	M200755	M200756	M200761						
TPE Low	-Temp									
3/4"	353K112	M200698	M200700	M200701						
1"	353K212	IVI200698	IVI200700	M200702						
1 1/2"	353K312	M200757	M200758	M200761						

3/4"	353K111	M200607	M200699	M200701	3/4"	353K111	MANAGOE	M200607	Managan
1"	353K211	M200697	WI200699	M200702	1"	353K211	M200695	M200697	M200699
1 1/2"	353K311	M200755	M200756	M200761	1 1/2"	353K311	M200759	M200755	M200756
<b>TPE Low</b>	-Temp				TPE Low	-Temp			
3/4"	353K112	Magaga	M200700	M200701	3/4"	353K112	Magagag	M200698	M200700
1"	353K212	M200698	M200700	M200702	1"	353K212	M200696	IVI200098	M200700
1 1/2"	353K312	M200757	M200758	M200761	1 1/2"	353K312	M200760	M200757	M200758
1) See instal	lation and mainten	ace instruction for	detailed informatio	n.					

<sup>(1)</sup> 



# **ASCO™ Pulse Valves**

**Electrical characteristics** 

Coil insulation class F Electrical safety IEC 335

**Voltages** DC (=) 24 V, permissible voltage tolerance  $\pm$  10%

AC (~) 24V / 50-60Hz, 120/60 - 110/50V/Hz, 230V / 50-60Hz (other voltages on request)

Pilot					Electrical enclosure		Replacement coi	l / Spare parts kit		_
operated	AC	DC	temperature	Safety code	protection		~		=	Type (3)
(1)	~	=	°C (°F) (2)		(EN 60529) 24V/50-60 Hz		230V/50/60 Hz	120/60-110/50 Hz	24V/DC	
Basic Po	wei	•								
\$1,50	6.3	22	-40 to +75 (-40 to +167)	EN 60730	IP65, moulded	400129-502	400129-528	400129-225	400127-642	01
SG	6.3	22	-10 to +60 (-14 to +140)	II3 GD Ex ec IIC T6-T4 Gc, Ex tc IIIC T110°C Dc	IP65X, moulded	M2004090SGA00 <b>FQ</b> (4)	M2004090SGA00 <b>FH</b> (4)	M2004090SGA00 <b>F0</b> (4)	M2004090SGA00 <b>F1</b> (4)	02
WP/WS	10.5	11.2	-40 to +65 (-40 to +131)	EN 60730	IP67, Steel/Stainl.St.	On request	On request	On request	On request	03
NF/WSNF	16.7	19.7	-60 to +40/60 (-76 to +104/140)	II2 G Ex d IIC Gb T6/T5, II2D Ex tb IIIC Db	IP66/67, Alu./Stainl.St.	On request	400405-117	On request	400405-342	04
EM/WSEM	10.5	16.8	-40 to +40 (-40 to +104)	II2 G Ex e mb IIC Gb T3, II2D Ex tb IIIC Db	IP66/67, Steel/Stainl.St.	On request	On request	On request	On request	03
PV	6.3	22	-40 to +55 (-40 to +131)	II2 G Ex mb IIC Gb T4, II2D Ex mb IIIC Db	IP65, moulded	On request	On request	On request	On request	05
EF/EV	10.1	11.6	-60 to +40 (-76 to +104)	NEMA Type 7 and 9	NEMA X4	On request	On request	On request	On request	06

<sup>(1)</sup> Electrical interface as described in the order code. Other versions are available on request.

#### **Electrical Connections**

Electrical Interface	Connection
SG, S1	Cable gland connector EN175301-803A (ISO 4400) for cables with an O.D. from 6 to 10 mm (0.24 to 0.39 inches).
WP, WS, EM, WSEM	M20-Synthetics cable gland for cables with an O.D. from 7 to 12 mm.
NF, WSNF	Threaded conduit 1/2" NPT supplied without cable gland.
NFET, WSNFET	Cable entry with thread M20 x 1.5 are supplied without calbe gland
PV	Epoxy Coil with integrated cable, 2m (6'5") long (other lengths on request)
EF, EV	Epoxy Coil with integrated 1/2" NPT conduit and 35cm (13.8") long

<sup>(2)</sup> Temperature range can be limited by sealings.

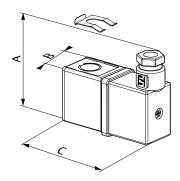
<sup>(3)</sup> Refer to the dimensional drawings below.

<sup>(4)</sup> ATEX Coil Kit "SG" available, please contact us.



## Type 01

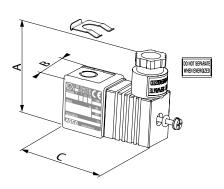
"\$1", "\$0" Solenoid with spade plug connector size 22 - 11mm (0.43 inches) EN 175301-803 Industry standard form B / IP65



Α	ВС		Weight kg (lbs)		
49	22	61	0.08		
(1.929)	(0.866)	(2.401)	(0.18)		



**Type 02** "SG" Solenoid with spade plug connector size 22-11mm (0.43 inches) EN 175301-803 Industry standard form B / IP65 II 3G Ex ec IIC T4 Gc, II 3D Ex tc IIIC T110°C Dc IP65X



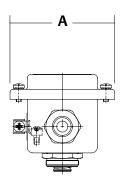
Α	В	С	Weight kg (lbs)		
49	22	61	0.08		
(1.929)	(0.866)	(2.401)	(0.18)		

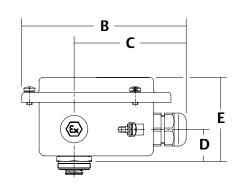
### Dimensions: mm (inch)



## Type 03<sup>(1)</sup>

Prefix "EM", "WSEM" solenoids / Electrical interface MV/MW/MT/MS/MN/MU Pull-type solenoid operator Metal enclosure, epoxy coated or stainless steel EN-IEC 60079-7, EN-IEC 60079-18 and EN-IEC 60079-31 II 2G Ex e mb IIC Gb, II 2D Ex tb IIIC Db IP66/67



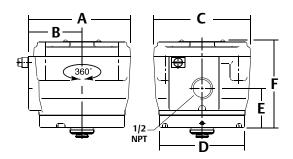


series/size	Α	В	С	D	E	weight kg (lbs)
EM/WSEM-MXX	77	120	82	23	62	0.55
	(0.031)	(4.724)	(3.228)	(0.906)	(2.441)	(1.21)

(1) Prefix "WP", "WS" solenoids / Electrical interface X8/X9 Pull-type solenoid operator Metal enclosure, epoxy coated or stainless steel IP66/67

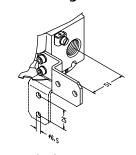


**Type 04**Prefix "NF", "WSNF" Solenoid / Electrical interface FN/FS/FT/FU Aluminium, stainless steel
(NF, epoxy coated)
EN-IEC 60079-1 and EN-IEC 60079-31
II 2G Ex d IIC T6..T4 Gb, II 2D Ex tb IIIC 85°C..135°C Db IP66/67



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	1)
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#### **Mounting Bracket**



Bracket kit no. C139824 contains: Stainless steel 304 SS screws and bracket

size	A	В	С	D	E	F	G	Н	weight (1)
NF	102	54	97	86	39	89	115	15	1.4
	(4.016)	(2.126)	(3.818)	(3.386)	(1.535)	(3.504)	(4.528)	(0.591)	(3.1)
WSNF	102	54	97	86	39	89	115	15	2.7
	(4.016)	(2.126)	(3.818)	(3.386)	(1.535)	(3.504)	(4.528)	(0.591)	(5.9)

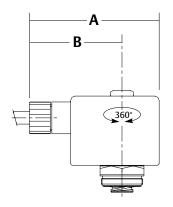
1 2 mounting holes M5, depth 9 mm

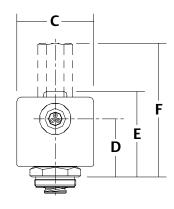
### Dimensions: mm (inch)



Type 05

Prefix "PV" solenoids / Electrical interface A7 Epoxy coated EN-IEC 60079-18 II 2G Ex mb IIC Gb - II 2D Ex mb IIIC Db IP67

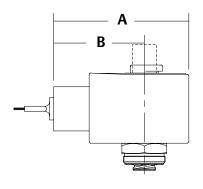


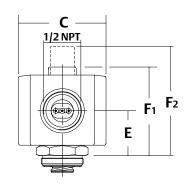


size	A	В	С	D	E	F	weight (1)
EM5	60	45	29	21	38.5	66	0.113
	(2.362)	(1.772)	(1.142)	(0.827)	(1.516)	(2.598)	(0.249)



**Type 06**"EF", "EV" Solenoid
Epoxy encapsulated
NEMA type 7, 9 / ICS-6 ANSI





Α	В	С	Weight kg (lbs)		
49	22	61	0,08		
(1.929)	(0.866)	(2.401)	(0.18)		