



## Introduction

Rotork Midland offers a range of direct acting 3/2 solenoid valves for the oil, gas and petrochemical industries.

The 67 Series and 70 Series are 316L stainless steel direct acting 3/2 solenoid valves primarily designed for actuator control. The valves offer maximum internal and external protection from liquids and gases, for use in severe environments, with a variety of functions - normally closed, normally open and diverter.

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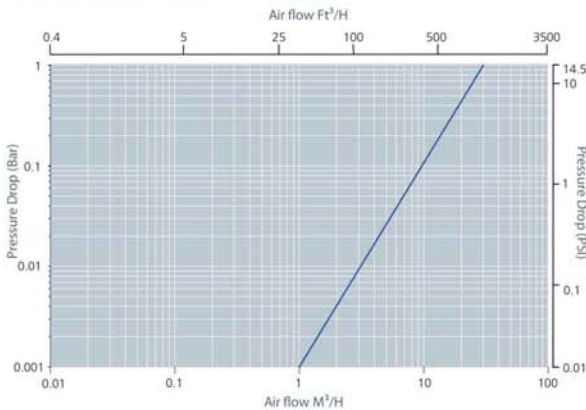
### Direct Acting Valves – 67 Series



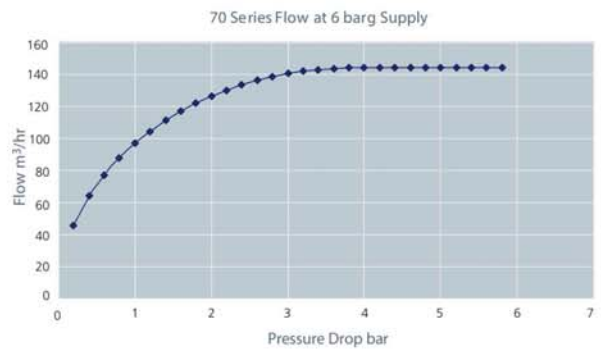
### Direct Acting Valves – 70 Series



**67 Series Flow Data**



**70 Series Flow Data**



**How to use the flow charts**

1. Select the required flow.
2. Note the corresponding orifices/model and pressure drop.
3. Using orifices/model, (refer to the features panel) for technical information.

**Certification Options Available**



## Direct Acting Valves – 1/4", 3/8", 1/2" 67 Series direct acting solenoid valves

A range of 3/2 normally open/ normally closed / diverting (universal) direct acting valves in stainless steel.

### Features and Benefits

- Specifically designed for severe environments
- 316L stainless steel body construction
- Response time 75-100 ms
- SIL2 capable (in-house assessment)
- Designed for actuator control
- Manual reset and manual override options
- Normally open, normally closed and diverting (universal)
- Satisfies all relevant EC Directives
- Compact unit
- Easy cable installation

### Working Temperature Range

- -20 to +40 °C (-4 to 104 °F) Nitrile seals
- -50 to +40 °C (-58 to 104 °F) EPDM seals

### Working Pressure (operating pressure differential)

- 0 - 10 bar (145 psi) maximum

### Protection

- Explosion proof standard = II 2 G Exd T6 (-50 °C ≤ Ta +40 °C)  
Explosion proof optional = II 2 G Exd T4 (-50 °C ≤ Ta +80 °C)
- Suitable for Zones 1 and 2, gas groups IIA, IIB, IIC
- Ingress Protection IP67 as standard (NEMA equivalent: 6)
- The combination of the valve and coil will determine maximum ambient i.e. always the lower of the two
- DC models supplied with surge protection as standard

### Ports NPT (BSP Option Available)

- 1/4", 3/8", 1/2" NPT

### Operating Media

- Gases - filtered lubricated or non-lubricated
- Air, inert gas, sweet (natural) gases

### Approvals:

ATEX, IECEx  
CSA, uCSAs  
CU-TR, CE

### Construction Materials

- Body: 316L stainless steel
- Flange tube: 303 stainless steel
- Plunger and top stop: stainless steel 430 FR
- Springs: 302 stainless steel
- Shading ring: Copper
- Seals: Nitrile (Viton option)
- EPDM on low temperature option

### Maximum Flow

At 6 bar, 1 bar differential:

- 3/2 valves - 800 l/min (28.25 SCFM)

### Electrical Characteristics

- Voltage tolerance: +10% or -10%
- Duty cycle: 100% ED
- Electrical connection (Std): cable connector from M20x1.5 female conduit
- Coil insulation: class H (BS EN 60085) 180 °C

### Options Available

- 1/2" NPT option available see below for ordering details
- T4 option available, substitute 'K' within the part number for '7', e.g. 2325M23-SD2D7#



Code	Voltage
D	24 VDC
F	48 VDC
G	110 VDC
M	110 V 50 Hz AC
N	110 / 120 V 60 Hz
S	220 V / 50 Hz AC

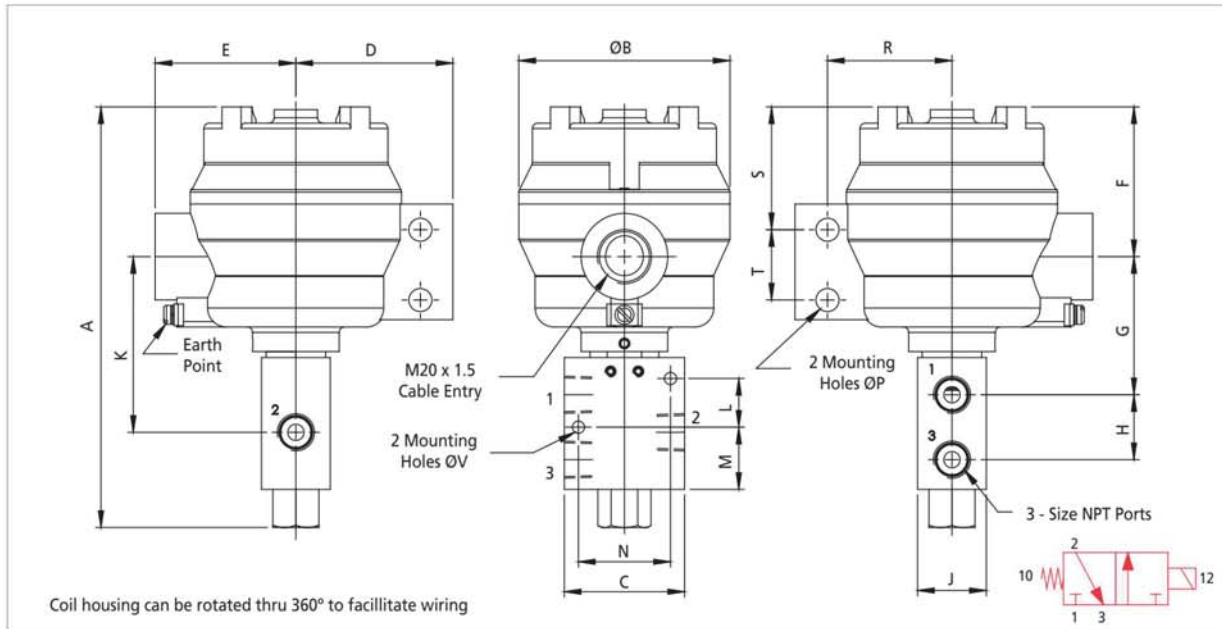
Product Code	Low Temperature Version	Size	Description	P.Max (bar)	Orifice (mm)	Power (Watts)	Flow Factor CV	Valve Weight (kg)
2325M23-SD2DK#	2325M23-ED2DK#	1/4"	Direct solenoid operated spring-return	10	6.0	14.5	0.86	2
3325M23-SD2DK#	3325M23-ED2DK#	3/8"	Direct solenoid operated spring-return					2.5
4325M23-SD2DK#	4325M23-ED2DK#	1/2"	Direct solenoid operated spring-return					2.5
2325M23MSD2DK#	2325M23MED2DK#	1/4"	Direct solenoid operated manual override					2
3325M23MSD2DK#	3325M23MED2DK#	3/8"	Direct solenoid operated manual override					2.5
4325M23MSD2DK#	4325M23MED2DK#	1/2"	Direct solenoid operated manual override					2.5
2325M23XSD2DK#	2325M23XED2DK#	1/4"	Direct solenoid operated manual reset			4		2
3325M23XSD2DK#	3325M23XED2DK#	3/8"	Direct solenoid operated manual reset					2.5
4325M23XSD2DK#	4325M23XED2DK#	1/2"	Direct solenoid operated manual reset					2.5

# Denotes Voltage. See chart above. Kv = 0.853 x Cv

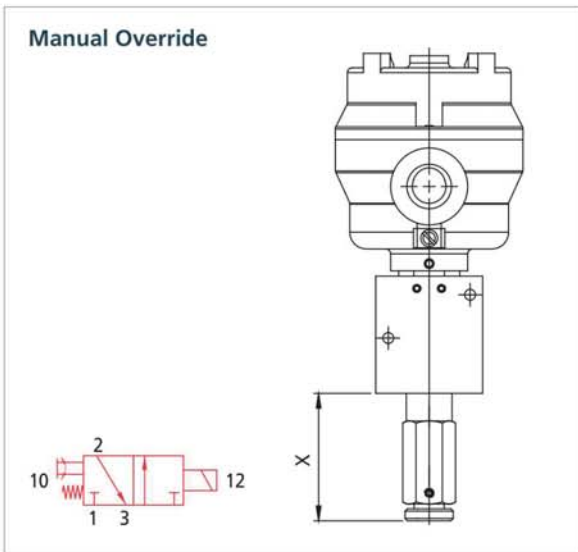
For 1/2" NPT electrical connection option, suffix part number with '1/2"NPT', e.g. 2325M23-SD2DK#1/2"NPT

For CSA approval suffix part number with 'CSA', e.g. 2325M23-SD2DKD/CSA

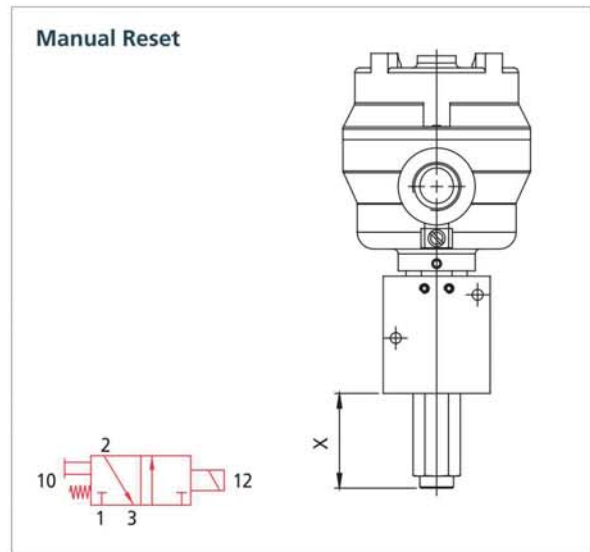
# Direct Acting Valves – 1/4", 3/8", 1/2" 67 Series direct acting spring-return



Product Code	Low Temperature Version	Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V
2325M23-SD2DK#	2325M23-SD2DK#	1/4"	153	78	45	58	52	55.4	51	24	25.4	65	18	23	34	8.5	46	45.4	26	4.5
3325M23-SD2DK#	3325M23-SD2DK#	3/8"	164	78	63.5	58	52	55.4	54	33.5	32	70.5	24	32.4	42	8.5	46	45.4	26	4.5
4325M23-SD2DK#	4325M23-SD2DK#	1/2"	164	78	63.5	58	52	55.4	54	33.5	32	70.5	24	32.4	42	8.5	46	45.4	26	4.5



Product Code	Low Temperature Version	Size	X
2325M23MSD2DK#	2325M23MED2DK#	1/4"	53
3325M23MSD2DK#	3325M23MED2DK#	3/8"	50
4325M23MSD2DK#	4325M23MED2DK#	1/2"	50



Product Code	Low Temperature Version	Size	X
2325M23XSD2DK#	2325M23XED2DK#	1/4"	40
3325M23XSD2DK#	3325M23XED2DK#	3/8"	37.5
4325M23XSD2DK#	4325M23XED2DK#	1/2"	37.5

## Direct Acting Valves – 1/4", 3/8", 1/2" 70 Series 3/2 direct acting solenoid valves

A range of 3/2 normally open / normally closed / diverting (universal) direct acting valves in stainless steel.

### Features and Benefits

- Specifically designed for severe environments
- Large porting for high Cv
- 3.5 W low power consumption
- SIL3 available, third party approved
- Zero pressure rated
- Response time 100 - 150 ms
- Manual override and reset options available
- 316L stainless steel body construction
- Designed for actuator control and safety critical systems
- Normally open, normally closed and diverting (universal)
- Satisfies all relevant EC Directives
- Easy cable installation

### Working Temperature Range

- -20 to +60 °C (-4 to 140 °F) FKM seals
- -50 to +60 °C (-58 to 140 °F) EPDM seals

### Working Pressure (operating pressure differential)

- 0 - 12 bar (174 psi) maximum

### Protection

- Explosion proof standard (dual-rated) II G Exd T6 (-50 °C ≤ Ta +60 °C) and T4 (-50 °C ≤ Ta +80 °C)
- Suitable for Zones 1 and 2, gas groups IIA, IIB, IIC
- Ingress Protection IP67 as standard (NEMA equivalent: 6)
- IP68\* option available, third party approval (please consult factory)
- The combination of the valve and coil will determine maximum ambient i.e. always the lower of the two
- DC models supplied with surge protection as standard

### Ports NPT (BSP Option Available)

- 1/4", 3/8", 1/2" NPT

### Operating Media

- Gases - filtered lubricated or non-lubricated
- Air, inert gas, sweet (natural) gases
- Sour gas option available (consult factory)

### Approvals:

SIRA SIL3 3rd party assessed  
ATEX  
IECEX  
CE  
CU-TR

### Construction Materials

- Body: 316L stainless steel
- Springs: 316 stainless steel
- Seals: FKM as standard
- EPDM on low temperature option

### Electrical Characteristics

- Electrical connection (Std): cable connector from M20 x 1.5 female conduit
- 1/2" NPT option available see below for ordering details
- Coil insulation: class H (BS EN 60085) 180 °C



**sira**  
CERTIFICATION

Code	Voltage
D	24 VDC
F	48 VDC
G	110 VDC
M	110 V 50 Hz AC
N	110 / 120 V 60 Hz
S	220 V / 50 Hz AC

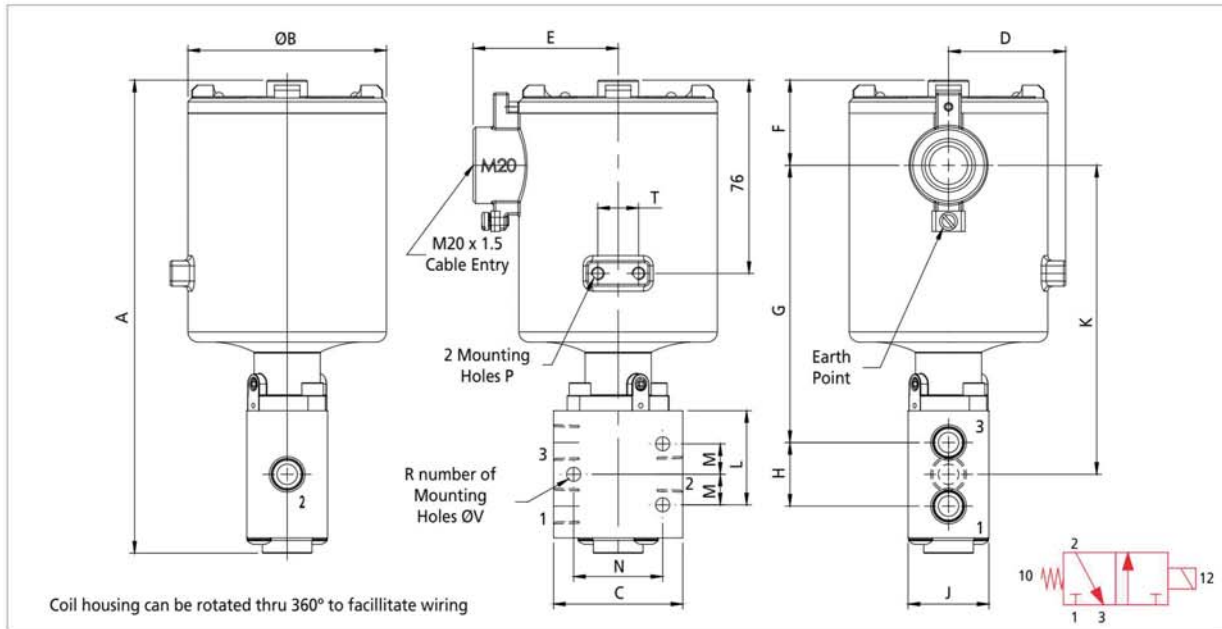
Product Code	Low Temperature Version	Size	Description	P.Max (bar)	Orifice (mm)	Power (Watts)	Flow Factor CV	Valve Weight (kg)
2325M23-SD27K#	2325M23-ED27K#	1/4"	Direct solenoid operated spring-return	20	10.0	3.5	1.5	2.5
3325M23-SD27K#	3325M23-ED27K#	3/8"	Direct solenoid operated spring-return			3.5	1.7	2.8
4325M23-SD27K#	4325M23-ED27K#	1/2"	Direct solenoid operated spring-return			3.5	2.2	2.8
2325M23MSD27K#	2325M23MED27K#	1/4"	Direct solenoid operated manual override			3.5	1.5	2.5
3325M23MSD27K#	3325M23MED27K#	3/8"	Direct solenoid operated manual override			3.5	1.7	2.8
4325M23MSD27K#	4325M23MED27K#	1/2"	Direct solenoid operated manual override			3.5	2.2	2.8
2325M23XSD27K#	2325M23XED27K#	1/4"	Direct solenoid operated manual reset			1	1.5	2.5
3325M23XSD27K#	3325M23XED27K#	3/8"	Direct solenoid operated manual reset			1	1.7	2.8
4325M23XSD27K#	4325M23XED27K#	1/2"	Direct solenoid operated manual reset			1	2.2	2.8

# Denotes Voltage. See chart above. Kv = 0.853 x Cv

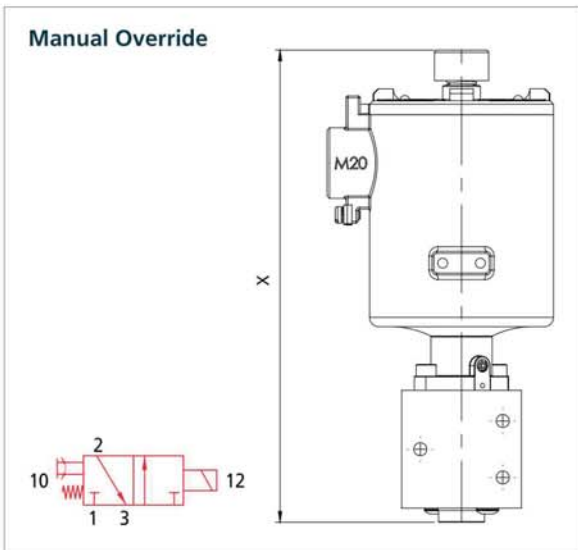
For 1/2" NPT electrical connection option, suffix part number with '1/2"NPT', e.g 2325M23-SD27K#1/2"NPT

\*IPX8 - Continuous immersion in water. Tested in accordance with BS EN 60529:1992. Duration: 3hrs. Depth: 2 metres above lowest point of enclosure.

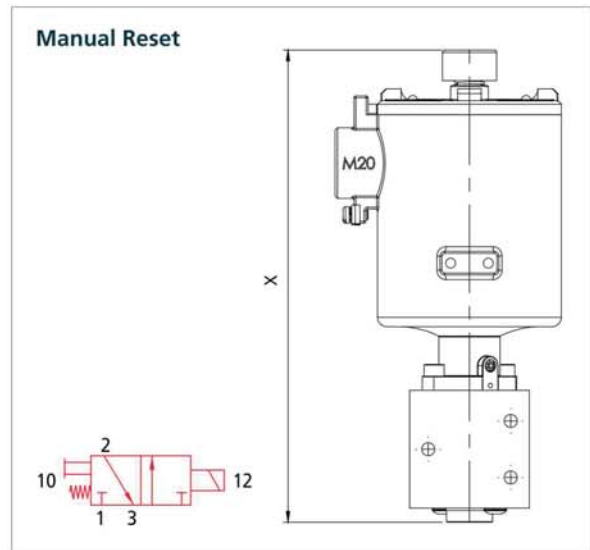
# Direct Acting Valves – 1/4", 3/8", 1/2" 70 Series 3/2 direct acting spring-return



Product Code	Low Temperature Version	Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V
2325M23-SD27K#	2325M23-ED27K#	1/4"	186	78	51	46	57	33.5	109	25	32	121.5	37	12	35	M5	3	76	16	5.5
3325M23-SD27K#	3325M23-ED27K#	3/8"	196	78	70	46	57	33.5	109.5	34	32	126.5	46	16	35	M5	2	76	16	5.5
4325M23-SD27K#	4325M23-ED27K#	1/2"	196	78	70	46	57	33.5	109.5	34	32	126.5	46	16	35	M5	2	76	16	5.5



Product Code	Size	X
2325M23MSD27K#	1/4"	201
3325M23MSD27K#	3/8"	211
4325M23MSD27K#	1/2"	211



Product Code	Size	X
2325M23XSD27K#	1/4"	201
3325M23XSD27K#	3/8"	211
4325M23XSD27K#	1/2"	211



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— USA FLOW CONTROL COMPANY —

**FLOCONX LLC**  
**USA FLOW CONTROL COMPANY**  
SALES | INFORMATION  
SALES@FLOCONX.COM  
VENTAS@FLOCONX.COM  
FLOW CONTROL, OUR PASSION.™  
WWW.FLOCONX.COM