

2/2-way-valves Orifice 0.06 to 0.24

Direct operated poppet valves

Solenoid actuated

Connection G 1/4

Operating pressure: 0 to 580 psi (0 to 40 bar) (see technical data)

Description

Solenoid valve for neutral gases and fluids*

Fluid temperature: -13°F to 176°F (-25 °C to +80 °C)

Ambient temperature: -13°F to 176°F (-25 °C to +80 °C),
depending on solenoid system

Mounting position: as required, preferably with solenoid on top

* With contaminated fluids, upstream installation of a dirt trap is recommended.

Material

Body: Brass

Seat seal: NBR

Internal parts: Steel 1.4104 (AISI 430F), Brass

Features

- No differential pressure required, works from 0 psi (0 bar)
- Short switching times
- Maximum leak rate $1.33 \cdot 10^{-3}$ mbar·l/s
- For AC solenoid systems with integrated rectifier (40 to 60Hz)
- Valves and solenoids (see solenoid table) with Ex approval according to ATEX

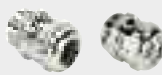
Technical data

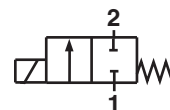
Connection size G	Orifice inch	Cv-Value	Part number* valve	Solenoid group**	Operating pressure psi	Drawing no.
Switching function: normally closed						
1/4	0.06	4.8	9500100	13B	0 - 580	1
1/4	0.08	8.3	9500200	13B	0 - 508	1
1/4	0.12	13.8	9500300	13C	0 - 145	1
1/4	0.16	24.2	9500400	13D	0 - 174	1
1/4	0.24	38.0	9501600	16D	0 - 73	2
Switching function: normally open						
1/4	0.08	6.9	9502210	13B	0 - 290	3
1/4	0.12	11.0	9502310	13B	0 - 145	3

* When ordering please indicate solenoid, voltage and current type (frequency).

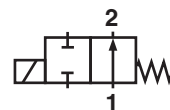
** Please see following pages for technical data and ordering information.

Accessories

Cable gland protection class EEx e, EEx d (ATEX), Nickel plated brass 	Connectors 
EEx e 0588819 (for solenoids 42xx / 46xx M20 x 1.5)	0570275



Symbol 1: 2/2 NC



Symbol 2: 2/2 NO

Solenoid actuators group 13B

	Type	Power consumption		Rated current		Ex-protection category	Protection class	Temperature ambient fluid °F	Electrical connector size	Dimensions no.	Circuit diagram no.
		24V DC W	230V AC VA	24V DC mA	230V AC VA						
	0246 ****	8.0	-	331	-	-	IP 65 (with connector)**	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	4	1
	3206 ****	-	9.2	-	40	-	IP 65 (with connector)**	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	5	4

Solenoid actuators group 13C

	Type	Power consumption		Rated current		Ex-protection category	Protection class	Temperature ambient fluid °F	Electrical connector size	Dimensions no.	Circuit diagram no.
		24V DC W	230V AC VA	24V DC mA	230V AC VA						
	0200 ****	12.1	-	504	-	-	IP 65 (with connector)**	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	4	1
	3204 ****	-	11.3	-	49	-	IP 65 (with connector)**	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	5	3
	4220 *****	8.9	-	369	-	II2G II2D	EEx me II T5/T4 IP 66 T 130 °C *	T5: -40 ... +131 T4: -40 ... +149	M20 x 1.5 ***	8	2
	4221 *****	-	10.0	-	43	II2G II2D	EEx me II T5/T4 IP 66 T 130 °C *	T5: -40 ... +131 T4: -40 ... +149	M20 x 1.5 ***	8	2

Solenoid actuators group 13D

	Type	Power consumption		Rated current		Ex-protection category	Protection class	Temperature ambient fluid °C	Electrical connector size	Dimensions no.	Circuit diagram no.
		24V DC W	230V AC VA	24V DC mA	230V AC VA						
	0700 ****	16.9	-	703	-	-	IP 65 (with connector)**	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	6	1
	3703 ****	-	17.3	-	75	-	IP 65 (with connector)**	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	7	3
	4230 *****	11.4	-	475	-	II2G II2D	EEx me II T5/T4 IP66 T 130 °C *	T5: -40 ... +104 T4: -40 ... +122	M20 x 1.5 ***	8	2
	4231 *****	-	15.2	-	66	II2G II2D	EEx me II T5/T4 IP66 T 130 °C *	T5: -40 ... +104 T4: -40 ... +122	M20 x 1.5 ***	8	4

Solenoid actuators group 16D

	Type	Power consumption		Rated current		Ex-protection category	Protection class	Temperature ambient fluid °C	Electrical connector size	Dimensions no.	Circuit diagram no.
		24V DC W	230V AC VA	24V DC mA	230V AC VA						
	0800 ****	16.9	-	703	-	-	IP 65 (with connector)***	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	6	1
	3803 ****	-	17.3	-	75	-	IP 65 (with connector)***	-13 ... +140 fluid: max. 80	Connector DIN EN 175301-803 form A ***	7	3

Standard voltages 24V DC, 230V AC. Other voltages on request. Design according to VDE 0580, EN50014/50028. 100% duty cycle.

* EC-Type Examination Certificate KEMA 98 ATEX 4452 X

** Required connector: type 0570275

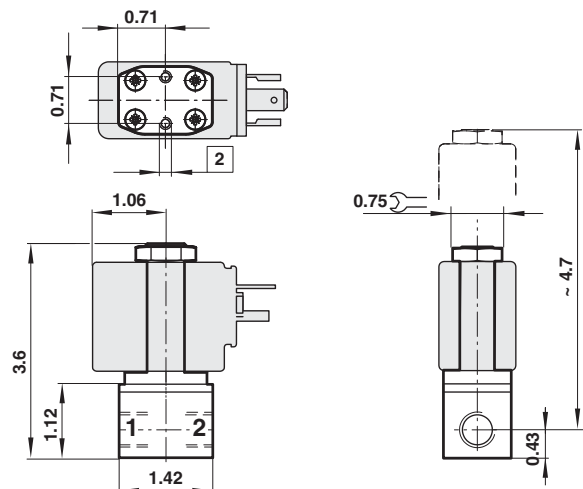
*** Connector/Cable gland is not indicated in delivery

**** IP65 according to DIN 40050/IEC 529 and DIN EN 600068-2-38

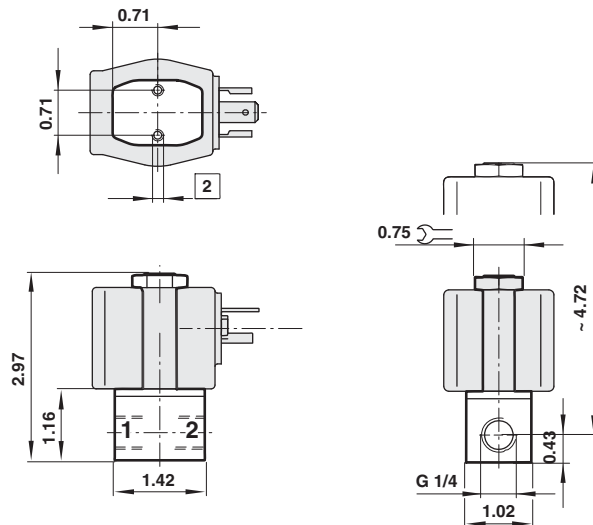
***** This solenoid has a fuse with an appropriate rating.

Dimensional drawings for valves

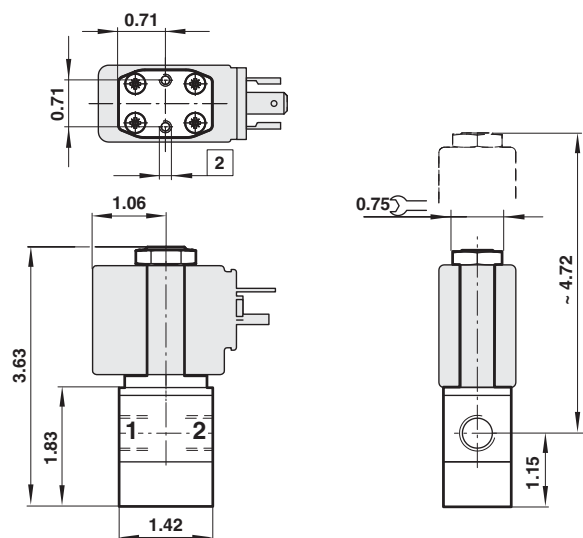
Drawing 1 *



Drawing 2 *



Drawing 3 *



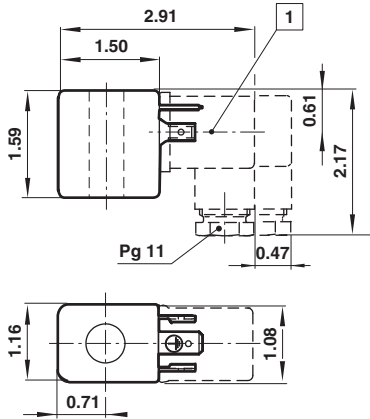
* Dimensions in inches

Drawing legend

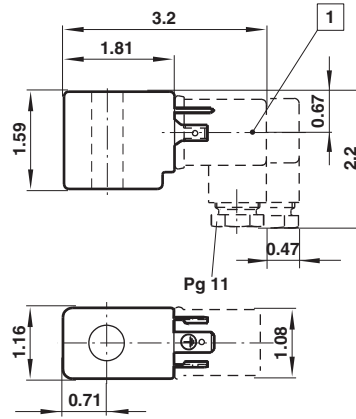
Index	Description
2	M4 x 6

Dimensional drawings for solenoid operators

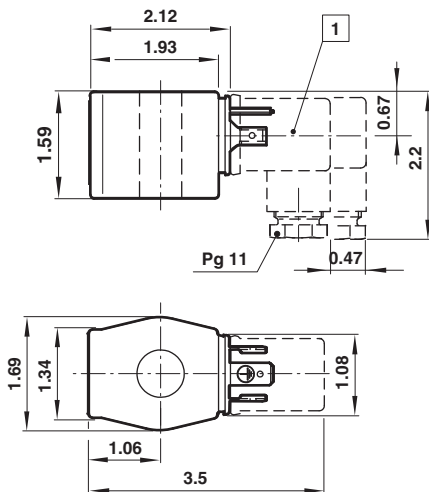
Drawing 4 *



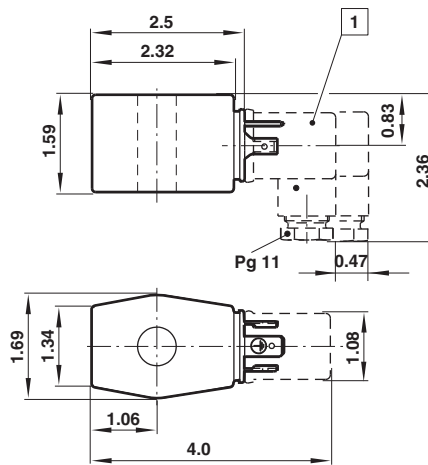
Drawing 5 *



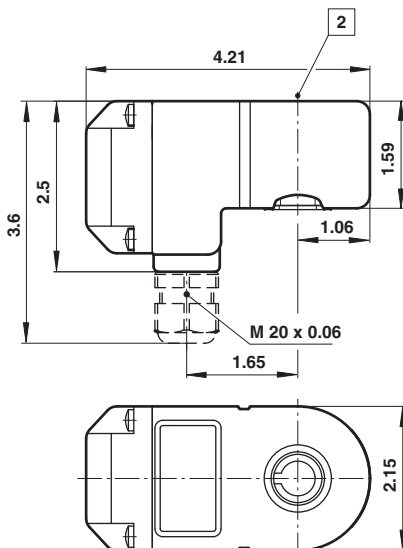
Drawing 6 *



Drawing 7 *



Drawing 8 *



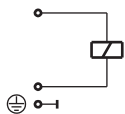
Drawing legend

Index	Description
1	Connector rotatable 4 x 90°
2	Ø 13 (with adaptor sleeve)

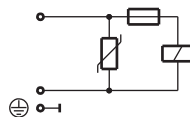
* Dimensions in inches

Circuit diagrams

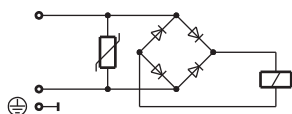
Circuit diagram 1



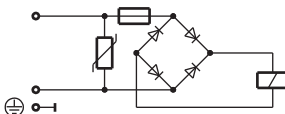
Circuit diagram 2



Circuit diagram 3

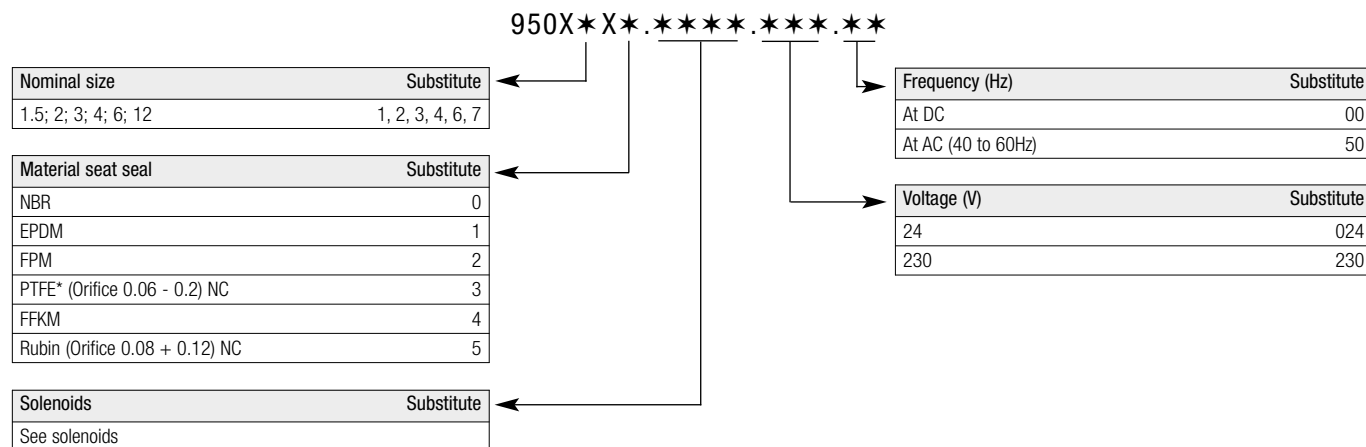


Circuit diagram 4



Further options on request

Options selector (applicable for the Norgren range)



* Possible only with series 9500XXX

Ordering example

2/2 directional control valve,
Orifice (nominal diameter) 2, normally closed,
Port size: G 1/4,
Current draw: 8W, voltage: 24V DC
Type: 9500200.0246.024.00
Connector: 0570275

2/2 directional control valves Orifice 0.08 to 0.24

Direct operated poppet valves

Solenoid actuated

Connection G 1/8, G 1/4

Operating pressure: 0 to 725 psi (0 to 50 bar) (see technical data)

Description

Solenoid Valve for aggressive gases and liquids*

Flow direction: determined

Fluid temperature: 14°F to 248°F (-10 °C to +120 °C)

Ambient temperature: -13°F to 176°F (-25 °C to + 80 °C),
depending on solenoid system

Mounting position: as required, preferably with solenoid on top

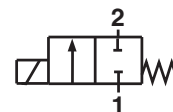
* With contaminated fluids, upstream installation of a dirt trap is recommended.

Material

Body: Stainless steel 1.4404 (AISI 316)

Seat seal: FPM

Internal parts: Stainless steel



Symbol 1: 2/2 NC

Features

- No differential pressure required, works from 0 psi (0 bar)
- Maximum leak rate $1.33 \cdot 10^{-3}$ mbar-l/s
- Assembled free of oil and grease
- Valves and solenoids (see solenoid table) with Ex approval according to ATEX

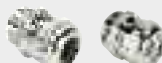
Technical data

Connection size G	Orifice inch	Cv-Value	Part number* valve	Solenoid group**	Operating pressure psi	Drawing no.
Switching function: normally closed						
1/8	0.08	0.12	9510202	13D	0 - 725	1
1/8	0.08	0.12	9510202	13B	0 - 290	1
1/4	0.16	0.39	9511402	16D	0 - 174	2
1/4	0.24	0.60	9511602	16D	0 - 73	2

* When ordering please indicate solenoid, voltage and current type (frequency).

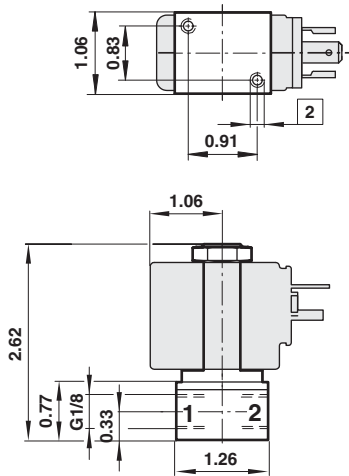
** Please see pages 43 and 44 for technical data and ordering information.

Accessories

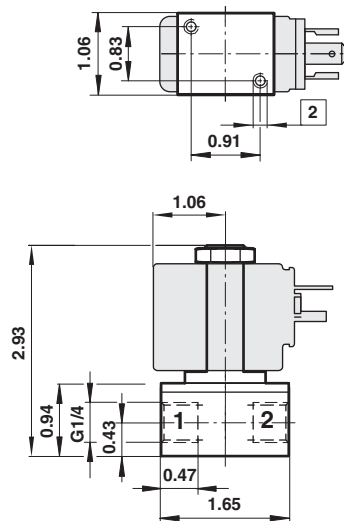
Cable gland protection class EEx e, EEx d (ATEX), Nickel plated brass	Connectors
	
EEx e 0588819 (for solenoids 42xx / 46xx M20 x 1.5)	0570275

Dimensional drawings for valves

Drawing 1 *



Drawing 2 *



* Dimensions in inches

Drawing legend

Index	Description
2	M4 x 6

The actuating solenoids correspond to those of the 95000 series.

Further options on request

3/2-way valves Orifice 0.08 to 0.20

Direct operated poppet valves
Solenoid actuated
Connection G 1/4
Operating pressure: 0 to 261 psi (0 to 18 bar) (see technical data)

Description

Solenoid valve for neutral gases and liquids*
Fluid temperature: -13°F to 176°F (-25°C to +80°C)
Ambient temperature: -13°F to 176°F (-25°C to +80°C),
depending on solenoid system
Mounting position: as required, preferably with solenoid on top

* With contaminated fluids, upstream installation of a dirt trap is recommended.

Material

Body: Brass
Seat seal: NBR
Internal parts: Steel 1.4104, Brass

Features

- No differential pressure required, works from 0 bar
- Fast switching times
- Maximum leak rate $1.33 \cdot 10^{-3}$ mbar·l/s
- For AC solenoid systems with integrated rectifier (40 to 60Hz)
- Valves and solenoids (see solenoid table) with EX approval according to ATEX

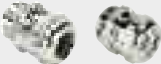
Technical data

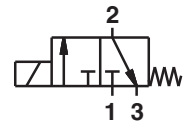
Connection size G	Orifice inch	Cv-Value	Part number* valve	Solenoid group**	Operating pressure psi	Drawing no.
Switching function: normally closed						
1/4	0.08	8.3	9600210	13B	0 - 145	1
1/4	0.08	8.3	9600240	13D	0 - 261	1
1/4	0.12	13.8	9600320	13C	0 - 87	1
1/4	0.12	13.8	9600340	13D	0 - 203	1
1/4	0.16	24.2	9601440	16D	0 - 145	1
1/4	0.20	31.1	9601540	16D	0 - 102	2
Switching function: normally open						
1/4	0.08	6.9	9602210	13B	0 - 131	3
1/4	0.12	11.0	9602340	13D	0 - 131	3
1/4	0.16	20.7	9602440	16D	0 - 87	3

* When ordering please indicate solenoid, voltage and current type (frequency).

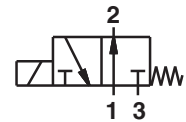
** Please see pages 43 and 44 for technical data and ordering information.

Accessories

Cable gland protection class EEx e, EEx d (ATEX), Nickel plated brass 	Connectors 
EEx e 0588819 (for solenoids 42xx / 46xx M20 x 1.5) 0570275	



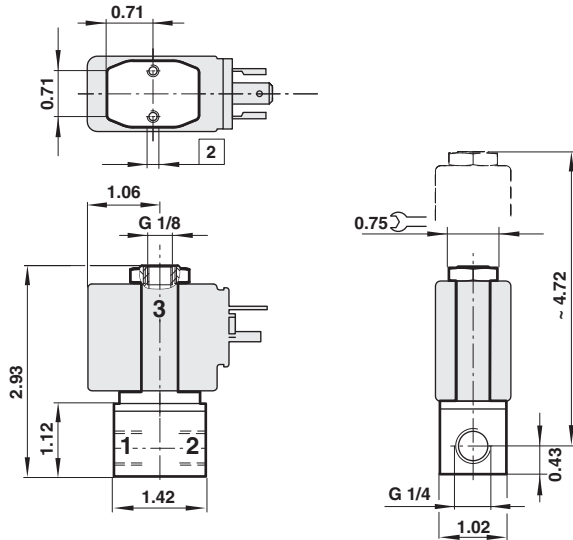
Symbol 1: 3/2 NC



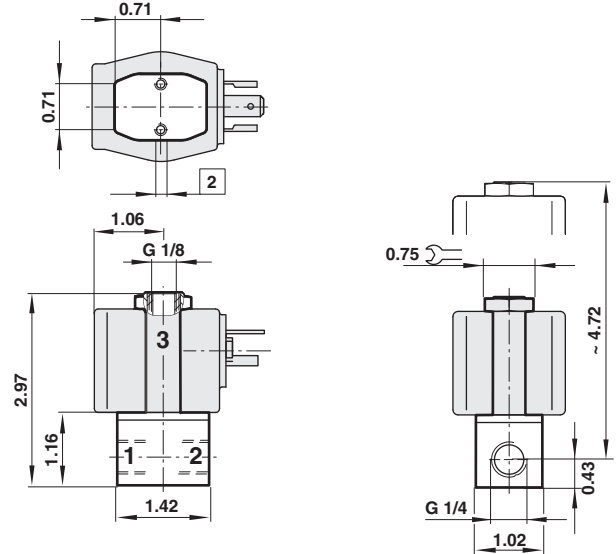
Symbol 2: 3/2 NO

Dimensional drawings for valves

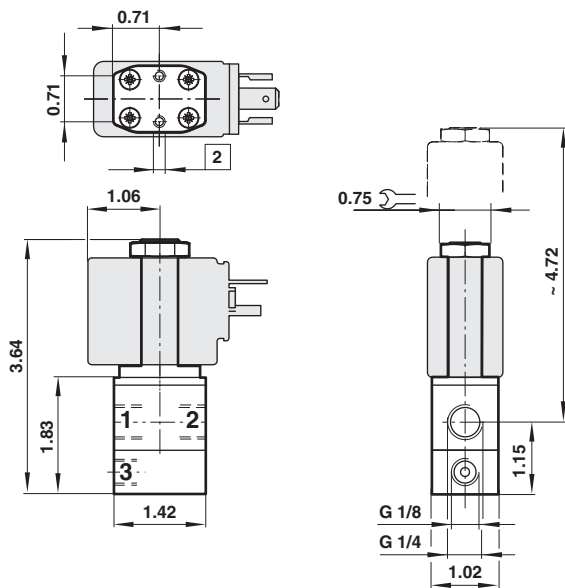
Drawing 1 *



Drawing 2 *



Drawing 3 *



Drawing legend

Index	Description
2	M4 x 6

* Dimensions in inches

The actuating solenoids correspond to those of the 95000 series.

Further options on request

3/2 Stainless steel directional control valves Orifice 0.08 to 0.12

Direct operated poppet valves

Solenoid actuated

Connection G 1/8

Operating pressure: 0 to 174 psi (0 to 12 bar) (see technical data)

Description

Solenoid valve for aggressive gases and liquids*

Flow direction: determined

Fluid temperature: 14°F to 248°F (-10°C to +120°C)

Ambient temperature: 14°F to 140°F (-10°C to +60°C),
depending on solenoid system

Mounting position: as required, preferably with solenoid on top

* With contaminated fluids, upstream installation of a dirt trap is recommended.

Material

Body: Stainless steel 1.4571

Seat seal: FPM

Internal parts: Stainless steel 1.4571

Features

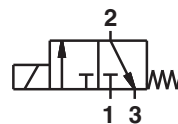
- No differential pressure required, works from 0 psi (0 bar)
- Fast switching times
- Maximum leak rate $1.33 \cdot 10^{-3}$ mbar-l/s
- Assembled oil and grease-free
- For AC solenoid systems with integrated rectifier (40 to 60Hz)

Technical data

Connection size G	Orifice inch	Cv-Value	Part number* valve	Solenoid group**	Operating pressure psi	Drawing no.
Switching function: normally closed						
1/8	0.08	0.13	9610242	13D	0 - 174	1
1/8	0.12	0.23	9610342	13D	0 - 87	2

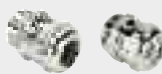
* When ordering please indicate solenoid, voltage and current type (frequency).

** Please see pages 43 and 44 for technical data and ordering information.



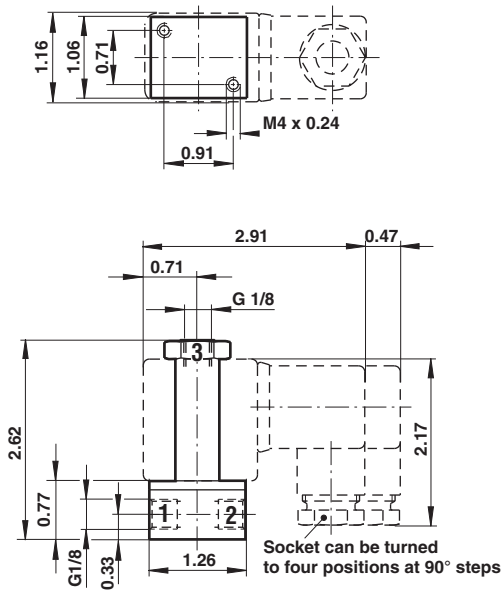
Symbol 1: 3/2 NC

Accessories

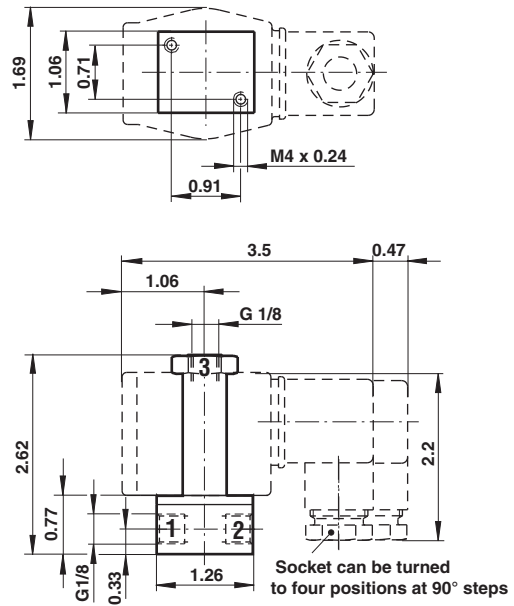
Cable gland protection class EEx e, EEx d (ATEX), Nickel plated brass 	Connectors 
EEx e 0588819 (for solenoids 42xx / 46xx M20 x 1.5)	0570275

Dimensional drawings for valves

Drawing 1 *



Drawing 2 *



* Dimensions in inches

The actuating solenoids correspond to those of the 95000 series.

Further options on request

3/2-, 5/2- and 5/3-way valves

Indirectly controlled soft seal spool valves
Solenoid actuated
Port size G 1/4, 1/4" NPT
NAMUR Interface
Operating pressure: 29 to 116 psi (2 to 8 bar)

Description

NAMUR Interface for filtered, non-lubricated and dry compressed air*
Operation: solenoid, indirectly controlled
Mounting position: as required
Flow direction: fixed
Nominal size: 0.24 inch
Connection 1: G 1/4
Connection 3 and 5: G 1/8
Electrical connection: see solenoid table

Temperatures: Valve: -13°F to 122°F (-25 °C to +50 °C),
Solenoid: see solenoid table

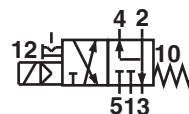
* Oil recommendation: Shell Hydrol DO 32, ESSO Febis K 32 (as of July 1992) or comparable oils with DVI-values < 8 (DIN 53521) and ISO viscosity class 32-46 (DIN 51519).

Material

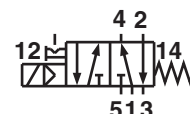
Body: Aluminium anodized
Pilot flange: PBT
Seals: NBR

Features

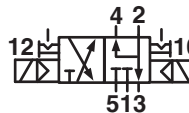
- For single and double operated actuators
- Exhaust air recirculation (3 way function)
- Crossover-free switching, switch-over function guaranteed even with small cross section air supply
- In event of power failure, valve switches to original position (spring-loaded with monostable design)
- Lockable manual override
- Compact design
- Simple design of soft seal spool system
- Easily interchangeable solenoid



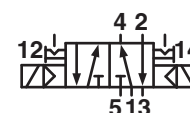
Symbol 1: 3/2



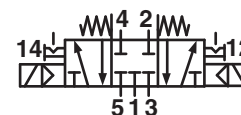
Symbol 2: 5/2



Symbol 3: 3/2



Symbol 4: 5/2



Symbol 5: 5/3

3/2, 5/2 and 5/3 directional valves, standard design

1	Connection size G		Cv-Value	Part number*	Operation	Operating pressure psi	Drawing no.
	3.5	2.4					
1/4	1/8	Flange	51.8	9710000	Solenoid/Spring	29 - 116	1
1/4	1/8	Flange	51.8	9711000	Solenoid/ Solenoid	29 - 116	2
1/4	1/8	Flange	34.5	9712000	Solenoid/ Solenoid mid position APB	29 - 116	3

* When ordering please indicate solenoid, voltage and current type (frequency).

Valve function: APB = All Ports Blocked

Solenoid actuators

	Type	Power consumption		Ex-protection categorie	Protection class	Temperature ambient/ fluid °C	Dimensions no.	Circuit diagram no.
		24V DC W	130V AC VA					
	3036	1.6	3.5	-	IP 65 (with connector) DIN EN 175301-803 form A *	-40 ... +50	5	1

Standard voltages 24V DC, 230V AC. Other voltages on request. Design according to VDE 0580, EN 50014/50028. 100% duty cycle.

* Connector not included: required connector for DC: type 0680003 Form B, 0570275 Form A.

3/2, 5/2 and 5/3 directional valves for minimal electrical power, including EEx i

5/2-way or 3/2-way function

Connection size G			Type *	Operation	Operating pressure bar	Flow l/min	Drawing no.
1	3.5	2.4					
1/4	1/8	Flange	9710002	Solenoid/Spring	29 - 116	750	1
1/4	1/8	Flange	9712002	Solenoid/ Solenoid mid position APB	29 - 116	500	2

* When ordering please indicate solenoid, voltage and current type (frequency).

Valve function: APB = All Ports Blocked

Solenoid actuators

	Type	Power consumption		Rated current		Ex-protection categorie	Protection class	Temperature ambient/ fluid °C	Dimensions no.	Circuit diagram no.
		24V DC W	230V AC VA	24V DC mA	230V AC VA					
	3050	1.7	-	-	-	-	IP 65 (with connector) DIN EN 175301-803 form B **	-40 ... +50	4	1
	3034	0.7	0.7 *	-	-	-	IP 65 (with connector) DIN EN 175301-803 form A **	-40 ... +50	5	1

Standard voltages 24V DC, 230V AC. Other voltages on request. Design according to VDE 0580, EN 50014/50028. 100% duty cycle.

* Valves can be operated with DC only. For 230V AC application please use 206V DC coil together with rectifier plug 0663303.

** Connector not included: required connector for DC: type 0680003 Form B, 0570275 Form A.

Accessories

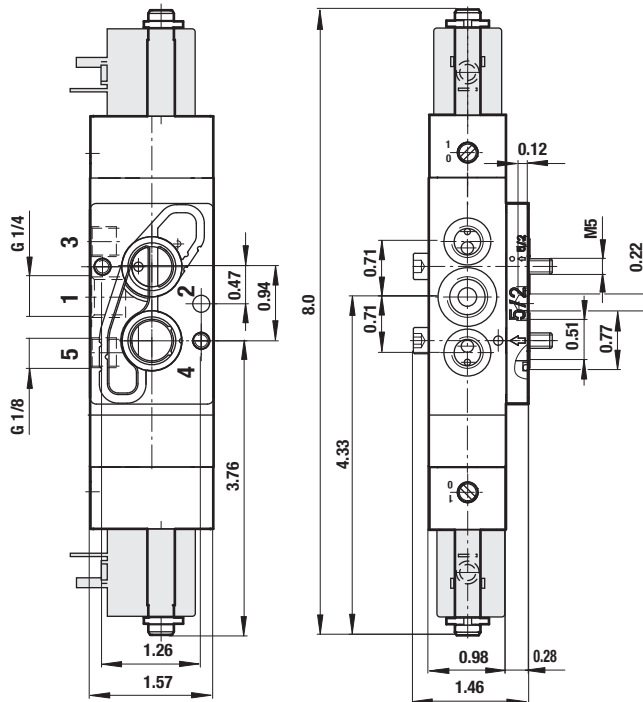
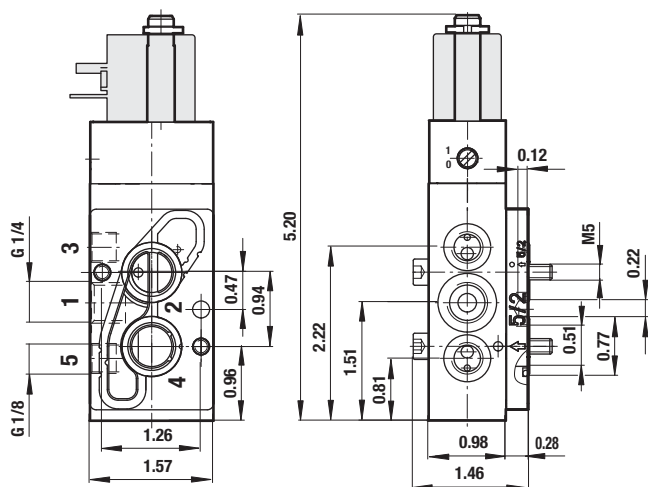
Silencer	Connectors
	
0014500 (G 1/8)*	0570275 form A
	0663303 with rectifier
	0680003 form B

* For indoor use.

Dimensional drawings for valves

Drawing 1 and 2 *

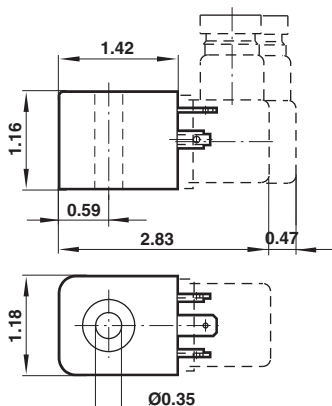
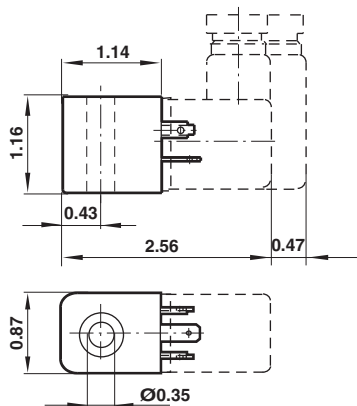
Drawing 3 *



Dimensional drawings for solenoid operators

Drawing 4 *

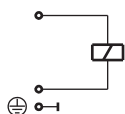
Drawing 5 *



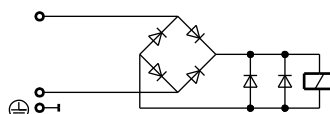
* Dimensions in inches

Circuit diagrams

Circuit diagram 1



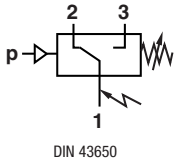
Circuit diagram 2



Herion 18D

Pneumatic pressure switches (diaphragm type)

Vac - 435 psi



- Adjustable setpoint
- Gold-plated contacts
- Vibration resistant to 15 g
- Microswitch approved by UL and CSA

Technical data

Medium
 Neutral, gaseous and liquid fluids
 Operation
 Diaphragm

Mounting position
 Optional

Operating pressure
 Vac to 435 psi

Over pressure
 1150 psi

Ambient temperature
 -14°F to 175°F (-10°C to + 80°C)

Viscosity
 Up to 1000 mm²/s (±450 ssu).

Fluid temperature
 -14°F to 175°F (-10°C to +80°C)

Repeatability
 ±3%, for vacuum ±4%

Electrical connection
 DIN 43 650

Switching element
 Microswitch

Degree of protection
 IP 65

Weight
 .4 lbs (0.2 kg)

Materials
 Housing: aluminum
 Seals: Perbunan, Viton
 'O'-ring: NBR



Model numbers - pneumatic/lubrication applications

Port size	Type	Pressure range psi (bar)		Switching pressure difference psi* (bar)		Model	Dimension Drawing No.
				lower range	upper range		
1/4 NPT	Female	-14 - 0	(-1 - 0)	2 (0.15)	3 (0.18)	0880120	1
-	Flange	-14 - 0	(-1 - 0)	2 (0.15)	3 (0.18)	0881100	3
1/4 NPT	Female	3 - 30	(0.2 - 2)	2 (0.15)	4 (0.27)	0880220	1
-	Flange	3 - 30	(0.2 - 2)	2 (0.15)	4 (0.27)	0881200	3
1/4 NPT	Female	7 - 120	(0.5 - 8)	4 (0.2)	9 (0.65)	0880320	2
-	Flange	7 - 120	(0.5 - 8)	4 (0.2)	9 (0.65)	0881300	3
1/4 NPT	Female	15 - 230	(1 - 16)	4 (0.2)	13 (0.90)	0880420	2
-	Flange	15 - 230	(1 - 16)	4 (0.2)	13 (0.90)	0881400	3
1/4 NPT	Female	15 - 435	(1 - 30)	15 (1.0)	75 (5.0)	0880620	2

Note: Switches are supplied with DIN 43650 mating connector.

* Switching pressure difference (hysteresis) is not adjustable. Typical values are shown.

Caution: Observe switching range. Do not subject switch to maximum allowable pressure during normal operation. Even short pressure peaks must not exceed this value.

Making And/Or Breaking Capacity

Load Level*	Type of Current	Type of Load	Vmin [V]	Maximum Permanent Current I _{max} [A] at V			Contact life electrical at I _{max}	Contact life mechanical at I = 0
				24 V	125 V	250 V		
Standard (relays, solenoids)	AC	Resistive	12	5	5	5	5 x 10 ⁴ switching cycles	approx 10 ⁷ switching cycles
	AC	Inductive PF = .7	12	3	3	3		
	DC	Resistive	12	5	.4	-		
	DC	Inductive L/R = 10 ms	12	3	.05	-		
Low (electronic circuits)	AC	Resistive	5	.34	.08	.04	2 x 10 ⁵ switching cycles	approx 10 ⁷ switching cycles
	DC	Inductive L/R = 10 ms	5	.1	-	-		

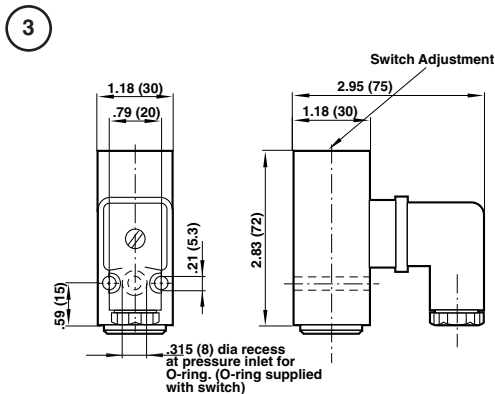
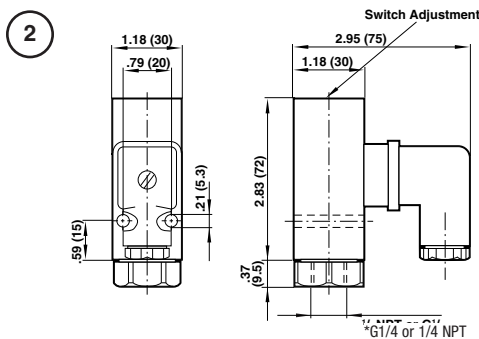
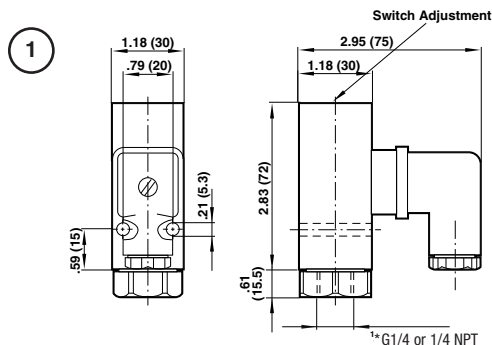
*Load Level Explanation

Series 18D Pressure Switches have microswitch contacts with gold-plating over silver base metal. The gold plating remains intact when "low level" voltage / current levels are observed. This feature assures highly reliable switching in low-level electronic circuits.

Standard applications do not require the gold plating – which will decay naturally when switching larger electrical loads.

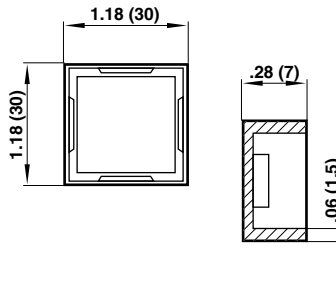
Notes:

1. Reference conditions: 30 cycles per min and 86°F (30°C) ambient.
2. Reducing load current to 50% of I max approximately doubles contact life.
3. Creepage and clearance distances correspond to insulation group B per VDE Reg. 0110 (except contact clearance of microswitch).



Protective Cover

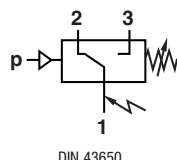
An optional elastomer cover for protection of the switch adjustment against dirt and splashing liquids Part No. 0554737



Herion 18D

Hydraulic pressure switches (piston type)

70 to 6100 psi psi



Adjustable setpoint

Gold-plated contacts

Vibration resistant to 15 g

Microswitch approved by UL and CSA

Technical data

Medium

Hydraulics, lubricating and light fuel oils

Operation

Piston

Mounting position

Optional

Operating pressure

70 to 6100 psi

Over pressure

5800 psi,

08824xx: 8700 psi

Ambient temperature

-4°F to 175°F (-20°C to + 80°C)

Viscosity

Up to 1000 mm²/s (±450 ssu).

Fluid temperature

-4°F to 175°F (-20°C to +80°C)

Repeatability

±3%

Electrical connection

DIN 43 650

Switching element

Microswitch

Degree of protection

IP 65

Weight

.2 lbs (0.2 kg)

Materials

Housing aluminum

Port: stainless steel

Seals: Teflon/Buna-N



Model numbers - hydraulic applications

Port Size	Type	Pressure Range psi (bar)	Switching Pressure Difference (Hysteresis)* psi (bar)		Model	Dimension Drawing No.
			Lower Range	Upper Range		
-	flange	70 – 1015 (5 – 70)	152 (10.5)	218 (15)	0883100	2
7/16-20 UNF	female	70 – 1015 (5 – 70)	152 (10.5)	218 (15)	0882119	1
1/4 NPT	female	70 – 1015 (5 – 70)	152 (10.5)	218 (15)	0882120	1
-	flange	150 – 2320 (10 – 160)	160 (11)	247 (17)	0883200	2
7/16-20 UNF	female	150 – 2320 (10 – 160)	160 (11)	247 (17)	0882219	1
1/4 NPT	female	150 – 2320 (10 – 160)	160 (11)	247 (17)	0882220	1
-	flange	360 – 3600 (25 – 250)	160 (11)	247 (17)	0883300	2
7/16-20 UNF	female	360 – 3600 (25 – 250)	160 (11)	247 (17)	0882319	1
1/4 NPT	female	360 – 3600 (25 – 250)	160 (11)	247 (17)	0882320	1
-	flange	580 – 6100 (40 – 420)	247 (17)	508 (35)	0883400	2
7/16-20 UNF	female	580 – 6100 (40 – 420)	247 (17)	508 (35)	0882419	1
1/4 NPT	female	580 – 6100 (40 – 420)	247 (17)	508 (35)	0882420	1

Note: Switches are supplied with DIN 43650 mating connector

* Switching pressure difference (hysteresis) is not adjustable. Maximum values are shown.

Making And/Or Breaking Capacity

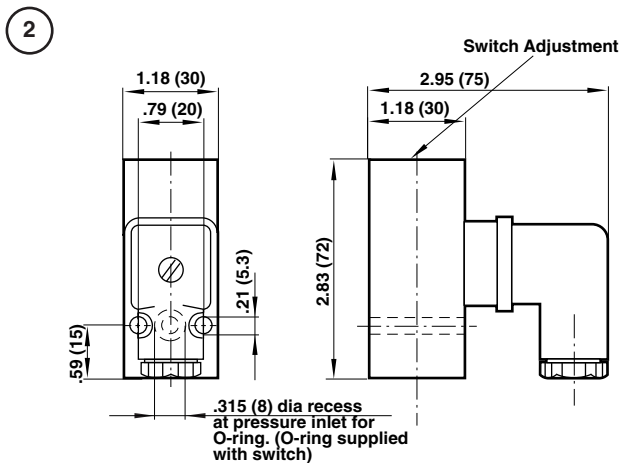
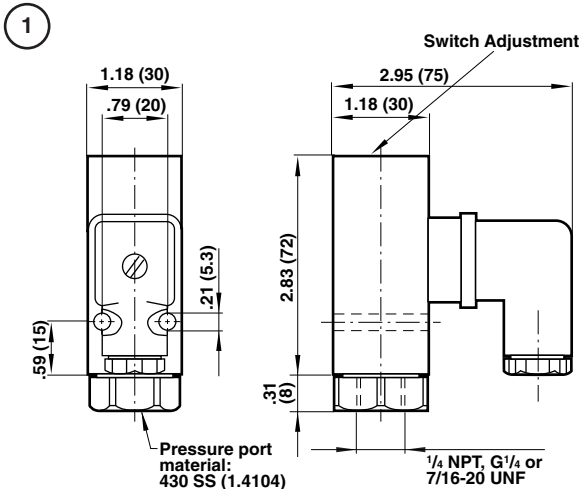
Load Level*	Type of Current	Type of Load	Vmin [V]	Maximum Permanent Current I _{max} [A] at V			Contact life electrical at I _{max}	Contact life mechanical at I = 0
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	DC	Inductive L/R = 10 ms	12	3	.05	-		
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	DC	Inductive L/R = 10 ms	5	.1	-	-		

*Load Level Explanation

Series 18D Pressure Switches have microswitch contacts with gold-plating over silver base metal. The gold plating remains intact when "low level" voltage / current levels are observed. This feature assures highly reliable switching in low-level electronic circuits. Standard applications do not require the gold plating – which will decay naturally when switching larger electrical loads.

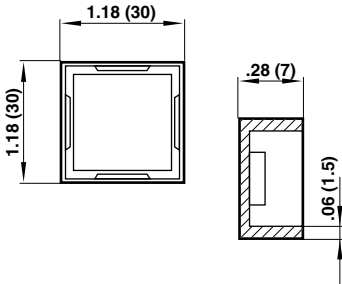
Notes:

1. Reference conditions: 30 cycles per min and 86°F (30°C) ambient.
2. Reducing load current to 50% of I max approximately doubles contact life.
3. Creepage and clearance distances correspond to insulation group B per VDE Reg. 0110 (except contact clearance of microswitch).



Protective Cover

An optional elastomer cover for protection of the switch adjustment against dirt and splashing liquids Part No. 0554737



Herion 33D Series

Solid state switches (pneumatic / all-fluid)

Vac to 9100 psi

Real time pressure display with backlight

Compact and robust design

Easy programming of set points and additional functions

Transistor output signals 1 x PNP, 2 x PNP, or 1 x PNP + 4 to 20 mA

Electronic lock

Switching status indicated by LED

Standard M12x1 electrical connection (IP 65)

For pneumatic, all fluid and hydraulic applications

Technical data

Medium

Pneumatic types: compressed air or neutral gases

All fluid types: gasses or liquids, including aggressive

Display

LCD 4 digits illuminated, pressure unit programmable for bar, psi, mpa

Mounting position

Optional

Operating pressure

Vac to 230 psi (pneumatic)

0 to 9100 psi (hydraulic/allfluid)

Temperature sensitivity (zero point)

0.4% of final value/10 K

Temperature sensitivity (range)

0.4% FS/10 K

Ambient temperature

14°F to 140°F (-10°C to 60°C)

Fluid temperature

14°F to 75°F (-10°C to 80°C)

Switching point

Adjustable between 0 and 100% FS

Reset point

Adjustable between 0 and 100% FS

Electrical connection

M12 x 1

Linearity

< 0.2% FS ±1 digit

Degree of protection to DIN 40 050

IP 65 (with mounted plug)

Materials

Housing: aluminum

Pneumatic version

Seal : viton O-ring (FKM)

Sensor: silicon

Hydraulic/All fluid version

Porting block / sensor: 316 SS welded



Model number - standard pneumatic models*

Port size	Measuring range (psi) (relative pressure)	Maximum overpressure (psi)	Output signal	Model
1/4 NPT	Vac-15	145	1 x PNP	0863014
Flange	Vac-15	145	1 x PNP	0863016
1/4 NPT	Vac-15	145	2 x PNP	0863024
Flange	Vac-15	145	2 x PNP	0863026
1/4 NPT	Vac-15	145	1 x PNP / 4-20 mA	0863044
Flange	Vac-15	145	1 x PNP / 4-20 mA	0863046
1/4 NPT	0 - 230	435	1 x PNP	0863214
Flange	0 - 230	435	1 x PNP	0863216
1/4 NPT	0 - 230	435	2 x PNP	0863224
Flange	0 - 230	435	2 x PNP	0863226
1/4 NPT	0 - 230	435	1 x PNP / 4-20 mA	0863244
Flange	0 - 230	435	1 x PNP / 4-20 mA	0863246

* M12 x 1 connector not included. Please see table on next page.

Options selector

Pressure range (pneumatic)		Substitute	Fluid/electrical connection		Substitute
Vac-15 psi		0	G1/4, M12 x 1		2
0 - 230 psi		2	1/4 NPT, M12 x 1		4
			Flange, M12 x 1		6
Pressure range (allfluid)		Substitute	Output signal		Substitute
0 - 145 psi		1	1 digital out		1
0 - 580 psi		3	2 digital out		2
0 - 1450 psi		4	1 digital out/4 - 20 mA**		4
0 - 2300 psi		5			
0 - 3600 psi		6			
0 - 5800 psi		7			
0 - 9100 psi		8			

** 4-20 mA option not available on flange mounted versions.

Electrical parameters

Electrical connection	M12 x 1
Power supply	10 – 32 V d.c. (polarity safe) digital models 15 – 32 V d.c. (polarity safe) analog models
Permissible residual ripple	10% (within 12 to 32 V)
Current consumption	<50 mA (plus load current)

Electromagnetic compatibility

Interference emission	Conforming to EN 50081. Part 1
Interference immunity	Conforming to EN 50082. Part 2

Electrical connection M12 x 1

Pin	Signal	Cable
1	Supply voltage	Brown
2	Out 2 (PNP) / analog 4 – 20 mA	White
3	Common	Blue
4	Out 1 (PNP)	Black
5	Earth ground	Grey

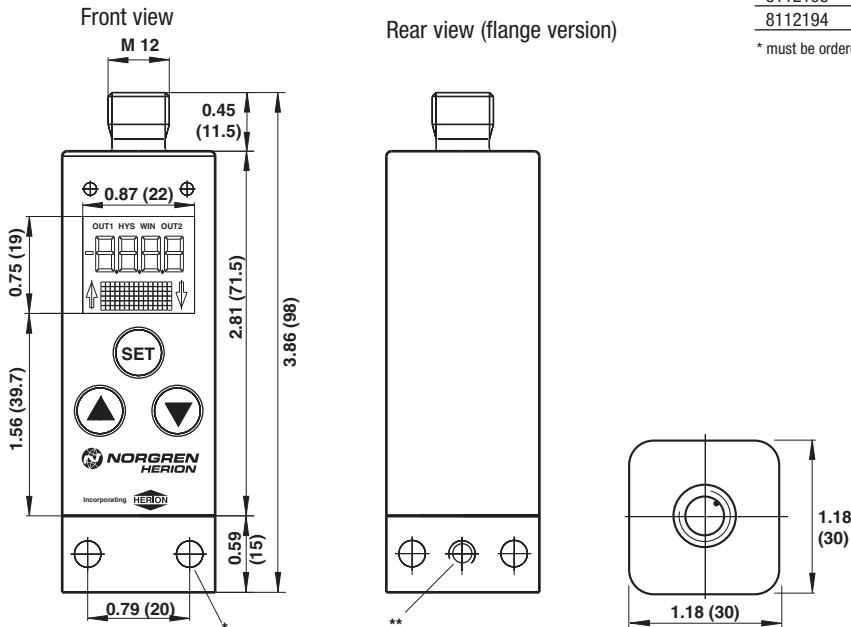
Switching output

Switching mode	PNP sourcing type transistor, suitable for inductive load
Output voltage	Supply voltage -1.5 V
Analog output	4 – 20mA
Contact rating	I _{max} = 500 mA (short-circuit proof)
Switching time	< 10 ms
Damping	5 ms – 0.64 sec programmable
Signal delay:	On/off 0 to 20 sec programmable
Service life	min. 100 million switching cycles
Switching logic	n.o. / n.c. programmable
Operating mode	Standard, hysteresis and window mode Separately selectable for each output

Accessories

Part number	Connectors and cordsets (M12 x 1)*
8112184	Mating connector 5-pin straight w/screw terminals, no cable
8112193	Molded cordset 5-pin straight w/2m cable
8112194	Molded cordset 5-pin 90° w/2m cable

* must be ordered separately

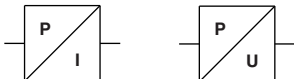


* Suitable for M 5 x 35 or 10-24 screws

** Flange diameter 8 x 1.2 deep, O-ring 4.47 x 1.78 (Viton 90)

Herion 18S Allfluid Series

Analog pressure sensor for hydraulic / all-fluid applications, 0 - 11,600 psi



Robust sensor for hydraulic applications
Temperature compensated
3-wire technology (0 to 10 V)
2-wire technology (4 to 20 mA)
Excellent long-term stability
Stainless steel measuring element-not oil-filled

Technical data

Medium
 For neutral and aggressive gases or fluids

Fluid connection
 1/4 NPT male

Mounting position
 Optional

Pressure range
 0 to 11,600 psi

Fluid temperature:
 -4°F to 185°F (-20°C to +85°C)

Ambient temperature
 -4°F to 185°F (-20°C to +85°C)

Degree of protection
 IP 65 (acc. to DIN 40050)

Shock protection
 30g, to DIN EN 60068-2-27

Vibration protection
 3g, 5 to 500 Hz, xyz, DIN EN 60068-2-6

Electrical connection
 M12 x 1

Supply voltage
 $U_B = 12$ to 30 V d.c. (current output)
 $U_B = 15$ to 30 V d.c. (voltage output)

Output signal
 4 to 20 mA (Two-wire technology)
 0 to 10 V (Three-wire technology)

Electromagnetic compatibility
 Interference immunity acc. to EN 50081. Part 1
 Interference immunity acc. to EN 50082. Part 2

Load resistance
 See diagram

Polarity
 Short-circuit proof

Measuring range
 See table below

Linearity
 $< \pm 0.5\%$ FS

Hysteresis
 $< 0.15\%$ FS

Temperature sensitivity (zero point)
 Zero point $< \pm 0.4\%$ FS/10K
 Range $< \pm 0.2\%$ FS/10K

Materials
 Housing: 316 stainless steel
 Sensor: 316 stainless steel welded



Standard models*

Model	Measuring range (psi) (Relative pressure)**	Value max. (bar) (Over pressure)	Output signal
0862178	0 - 145	580	4 - 20 mA
0862188	0 - 145	580	0 - 10 V
0862378	0 - 360	725	4 - 20 mA
0862388	0 - 360	725	0 - 10 V
0862478	0 - 1450	2900	4 - 20 mA
0862488	0 - 1450	2900	0 - 10 V
0862678	0 - 3625	7250	4 - 20 mA
0862688	0 - 3625	7250	0 - 10 V
0862778	0 - 5800	10,800	4 - 20 mA
0862788	0 - 5800	10,800	0 - 10 V
0862978	0 - 11,600	14,500	4 - 20 mA
0862988	0 - 11,600	14,500	0 - 10 V

* Order mating connector separately

Electrical connection M 12 x 1 (4 pin)



Signal	4 ... 20 mA	0 ... 10 V	Frequency
+ UB (supply)	1	1	
Common	-	3	
Signal	4	4	

Options selector

0862★ ★ 8	
Measuring range relative pressure	Code
0 to 145 psi	1
0 to 360 psi	3
0 to 1450 psi	4
0 to 3625 psi	6
0 to 5800 psi	7
0 to 11,600 psi	9
Output signal	Code
4 to 20 mA	7
0 to 10 V	8

NORGREN
FLUID CONTROLS

1 = I Output

2 = Load

The diagram shows a transformer with a primary winding connected to a power source P . The primary winding has terminals 1, 3, and 4. The secondary winding has terminals 1, 3, and 4. The secondary winding is connected to a load, represented by a circle with a diagonal line and the letter U . The secondary winding is also connected to a battery with a positive terminal (+) and a negative terminal (-). The voltage across the secondary winding is labeled U .



Max. load $R_L = \frac{U_B - 12 \text{ V}}{0.02 \text{ A}} \text{ ()}$

Part number	Connector and cordsets (M12 x 1)
0523055	mating connector, 4-pin straight w/screw terminals, no cable
0523057	molded cordset, 4-pin straight, 2 meter
0523052	molded cordset, 4-pin straight, 5 meter
0523058	molded cordset, 4-pin 90°, 2 meter
0523053	molded cordset, 4-pin 90°, 5 meter