Measure Monitor Control

E50.d.p.s

Solenoid Valve - 2/2 - Manual Reset

Benefits & Features

- Direct Acting with hand held manual reset knob
- Suitable for gaseous and liquid media
- Power to Close (ES model).
- Powered open. Remove power to close (DS model)
- Bronze body (nickel plated available. Please ask)
- IP65, EExd IIB or EExd IIC versions
- Ex-d IIC -60°C to +60°C ambient versions
- ATEX, EAC Ex (CU TR 012) and IECex, Ex-d approved

EExd Hazardous Area versions

Specification

Configuration	Direct acting poppet design
Port Sizes	3/4" to 4"
Orifice	see table below
Kv	see table below
Body	Bronze
Media	Air, gases, liquids etc. Subject to material compatibility
Pressure ranges	See individual data tables below
Seals	NBR (-10°C to + 70°C), VITON (-10°C to + 90°C), (3/4" and 1" only)
Voltage	12, 24, 48, 110, 220, 230 AC/DC. Other voltages upon request

Technical Data

	A		B	C	D	Port Size BSP	Orifice mm	Pressures in BAR. Nominal Max.	Differential Min.	Differential Max.	Operation (See page 2 for Information)	KV Flow Factor L/min.
E50		20				¾"	20	16	0	5	D	100
E52		20				¾"	20	16	0	5	E	100
E51		25				1"	25	16	0	5	D	160
E53		25				1"	25	16	0	5	E	160
E55		32				1 ¼"	32	16	0	5	D	250
E56		38				1 ½"	38	16	0	5	D	360
E57		50				2"	50	16	0	5	D	645
E60		62				2 ½"	62	16	0	5	D	1000
E58		75				3"	75	16	0	5	D	1450
E09		98				4"	98	16	0	5	D	2400

IP65 safe area version

Flanged PN16	A		B	C	D							
E57		50				DN50	DN50	16	0	5	D	645
E60		62				DN65	DN60	16	0	5	D	1000
E58		75				DN80	DN80	16	0	5	D	1450
E09		98				DN100	DN100	16	0	5	D	2400

IP65 safe area version with flanged body

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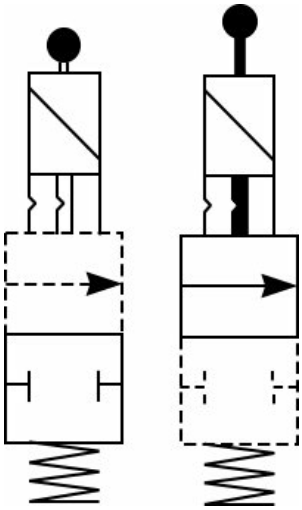
Configuration & Operation

The E50 series has two distinct types of operation. D and S.
They have either the power applied or removed, in order to return the valve to the closed position



Closed **Open**

D' Type Operation: Sizes 3/4" to 4"

Setting the valve to the Open position:

- Power is supplied to the solenoid
- Person attends valve on site and pulls reset to knob vertically. Valve is held open electrically
- Valve is now in the open position

'D' Type Operation: Sizes 3/4" to 4"

How the valve closes:

- Power is removed from the solenoid
- Valve is now closed

E' Type Operation: Sizes 3/4" and 1"

Setting the valve to the Open position:

- Person attends valve on site and pulls reset to knob vertically
- Valve is now mechanically held in the open position. No power is required.

'E' Type Operation: Sizes 3/4" and 1"

How the valve closes:

- Power is supplied to the solenoid (minimum 500 m/seconds)
- Valve is now closed

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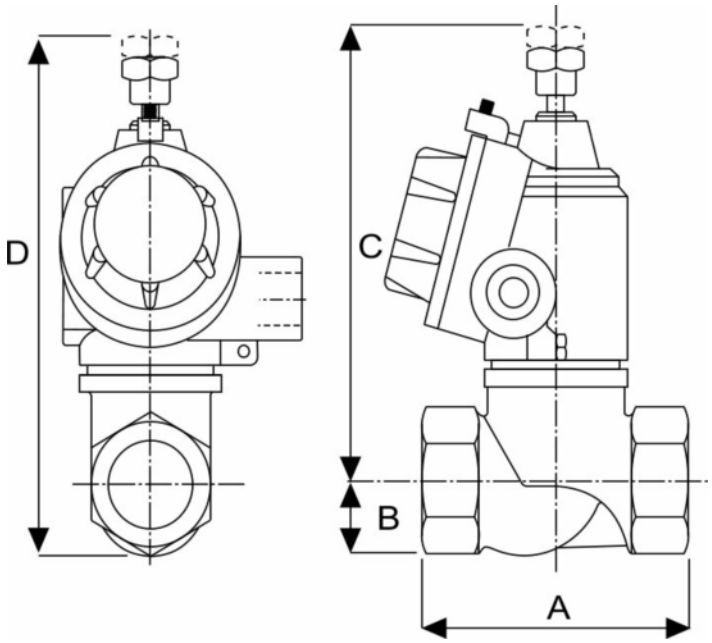
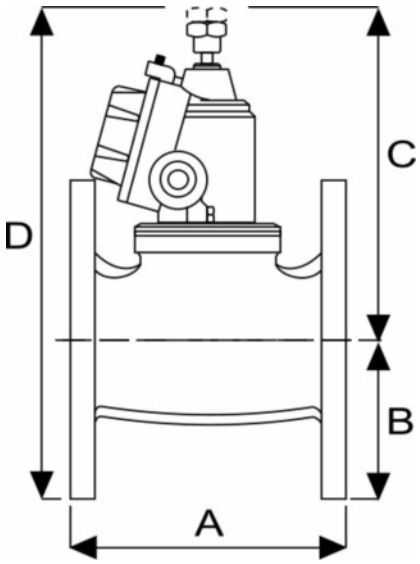
Dimensions

EExd & IP67 Safe Area

Screwed Port Size	Weight Kg	Dimensions mm			
		A	B	C	D
¾"	1.2	80	20	124	144
1"	1.4	94	25	130	155
1 ¼"	1.8	109	31	159	190
1 ½"	2.1	119	34	166	201
2"	2.9	140	41	176	217
2 ½"	4.7	170	51	204	255
3"	6.7	188	61	205	266
4"	13.3	209	72	248	320



Flanged Port	Weight Kg	Dimensions mm			
		A	B	C	D
DN50	6.3	142	83	180	263
DN65	9.3	158	93	202	295
DN80	11.3	189	100	208	308
DN100	22.3	246	110	245	355



Order Codes

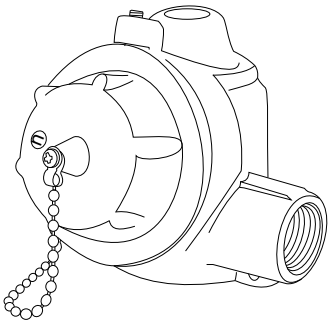
A	Body	B	Port			C	Seals (fluid temp. min / max)	D	Protection	E	Options
T	Bronze	H	3/4" BSP	P	2" BSP	0	NBR (-10°C to + 70°C)	P	IP65 Safe Area	/SG	Degreased for oxygen
		L	1" BSP	Q	2 1/2" BSP	1*	VITON (-10°C to + 90°C)*	S	IP67 Safe Area		
		N	1 1/4" BSP	R	3" BSP	7	HNBR (-45°C to + 90°C)	B	II 1/2 GD Ex-d IIB T6 (-20 to +40°C)		
		O	1 1/2" BSP	S	4" BSP			C	II 1/2 GD Ex-d IIC T6 (-20 to +40°C)		
		DN	50, 65, 80, 100				* 3/4" & 1" Only	/LT	II 1/2 GD Ex-d IIC T6 (-60 to +60°C)		
								H	Ex-d c IIB IP67 IECEX		
								T	Ex-d c IIC IP67 IECEX		
								R	Ex-d IIC EAC Ex		

Measure Monitor Control

Solenoid Wiring
IP67 Housing
SAFE AREA & EEXD

Electrical Wiring - IP67 Housing

Installation Procedures & Methods



Attention: For safety purposes, always ensure that the power supply is disconnected. After de-energising, allow 15 minutes before continuing the following procedures

A

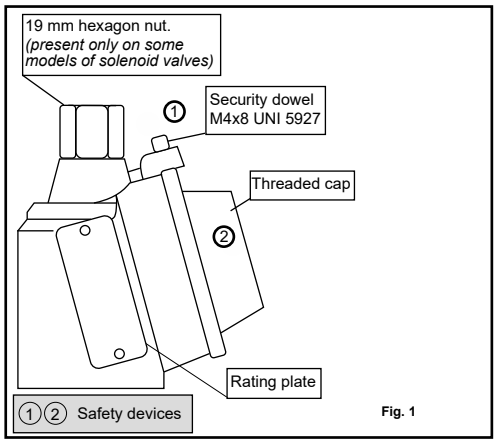
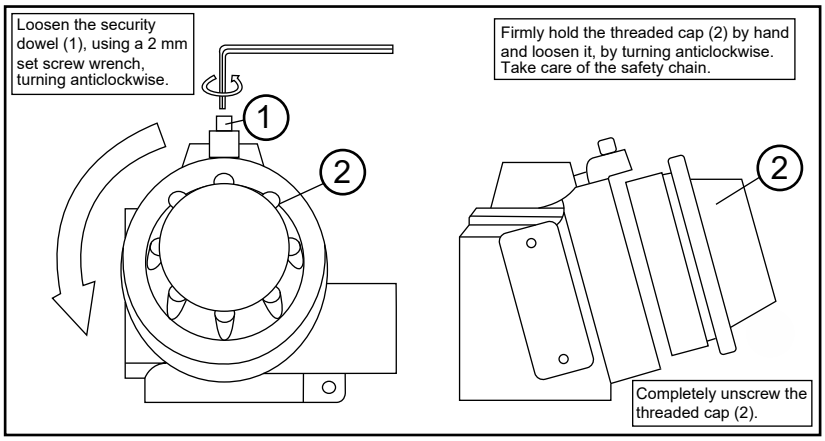
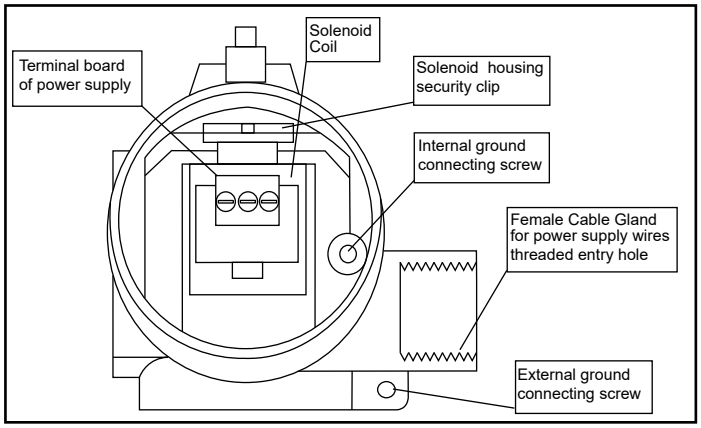


Fig. 1

B

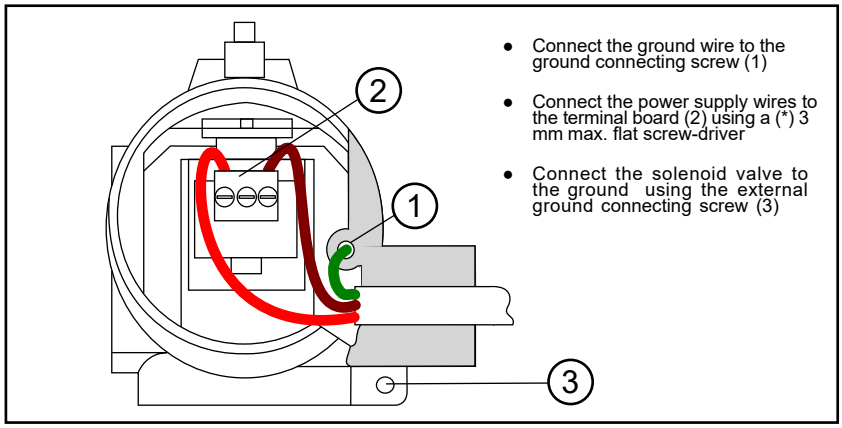


C



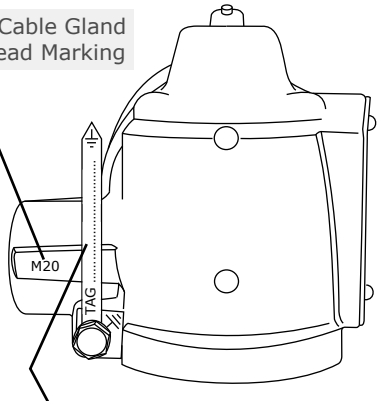
Pipe fittings used for cable entry (Cable, duct, conduit etc) are NOT supplied by the manufacturer.
Installation engineers should ensure that the use of fittings are of the correct diameter and suitable to secure the tightness of the cable used. Where site conditions indicate, cable duct, conduit etc. must be ATEX approved, for a protection degree equal or greater than the protection degree indicated on the rating plate.
The female thread type is indicated on the housing: M20*1.5mm or 1/2"NPT

D



- Connect the ground wire to the ground connecting screw (1)
- Connect the power supply wires to the terminal board (2) using a (*) 3 mm max. flat screw-driver
- Connect the solenoid valve to the ground using the external ground connecting screw (3)

Electrical Cable Gland Entry Thread Marking



Earth Tag. Can be customised with Tag number, part number etc.

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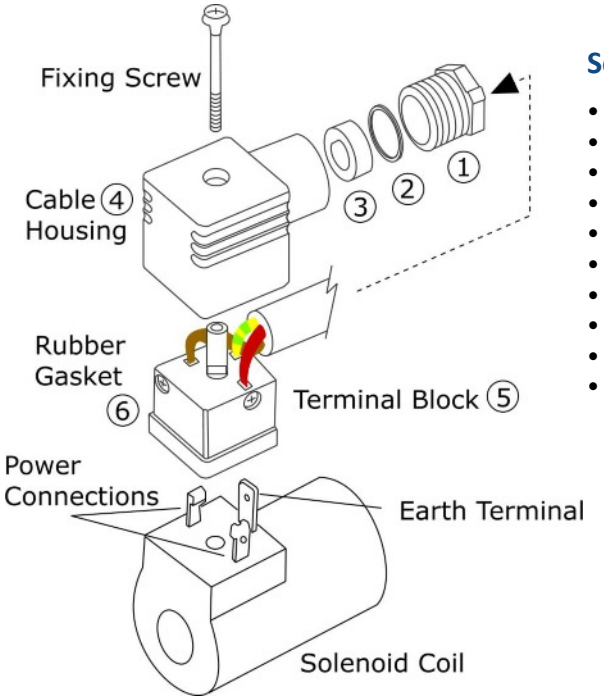
IP65 SAFE AREA INSTALLATION & MAINTENANCE

SAFE AREA
SOLENOID VALVES
DIN 43650-A (Large)
DIN 43650-B (Small)

DIN electrical socket connectors to protect solenoid coil terminals and wiring.



Section 1: DIN Connector Assembly

- Insert the electrical power cable through the gland assembly (1,2,3)
- Push the cable through cable housing (4)
- Connect power and earth cables to terminal block 5
- Push terminal block (5) backwards, inside cable housing (4)
- Place rubber gasket (6) on terminal block (5) front face
- Push terminal block onto solenoid coil terminals
- Push fixing screw through complete assembly
- Tighten fixing screw with small screwdriver
- Do not over tighten
- Tighten cable gland (1,2,3) by hand

Section 2: How to install Solenoid Valves

Solenoid Valves can normally be installed and operate in any orientation. However, certain models are designed to operate in horizontal installations. Please contact Red Dragon for further information.

Installation Procedure:

Check that the Solenoid Valve is the correct product ordered for the application:

- Isolate the site electrical power supply
- Isolate the site media supply (dependant on the application)...air, water, steam etc. Leave until cool/safe.
- Insert the valve onto the pipe, ensuring that the flow direction is observed.....IN for incoming media, or an arrow stamped on the valve body.
- Ensure that the pipe connections are free from burrs or loose pipe thread tape
- Tighten all pipe joints
- Connect electrical power supply via DIN electrical socket connector, as detailed in section 1
- Ensure that DIN connector is properly connected to solenoid coil and the gasket is installed correctly
- Apply media pressure and check for leaks

Section 3: Maintenance Procedure for Solenoid Valves

In the unlikely event of a valve malfunction, or routine maintenance, follow these instructions:

- Isolate the site electrical power supply
- Isolate the site media supply (dependant on the application)...air, water, steam etc.
- Remove the solenoid coil by unscrewing the coil retention nut anti-clockwise
- Remove the coil tube stem by unscrewing anti-clockwise
- Carefully remove the plunger assembly (inside the coil stem)
- Check the plunger assembly for damage or worn seals
- Check the face inside the coil stem for foreign particles that could prevent correct operation
- For Pilot Diaphragm Solenoid Valves: remove the top cover housing and check the diaphragm for damage and blocked transfer port.
- Re-assemble the valve in reverse order, ensuring that all parts are cleaned and assembled correctly