Solenoid Valve Type 160/161

Type 160

Type 161

Product description

Type 160/161 works according to the leverage principle and can therefore switch large nominal diameters directly. It is available in both the 2/2-way and the 3/2-way valve designs. It can be used for a wide range of functions, such as opening, locking, dosing, mixing and dispensing. The anchor operates horizontally on a permanently coupled rocker. The sealing cylinder on the lower lever is pressed to the valves seats through the horizontal movement. The plastic-coated metal lever forms one unit with the gas-tight diaphragm bushing. Through this construction, the actuator media is kept separate from the fluid housing.

Function

A solenoid valve is a valve which is actuated by an electromagnet. Their tasks are to shut off, release, dose, distribute or mix gases and fluids. The solenoid valves can switch very fast, they guarantee high reliability and a long lifetime at a low actuator power. Solenoid valves with position measuring can be operated as a servo valve.

Applications

- Water treatment
- Process/chemical engineering
- Plant/mechanical engineering
- Semiconductor industry
- Environmental engineering
- Medical engineering
- Apparatus engineering
- Analytical technology

Benefits/features

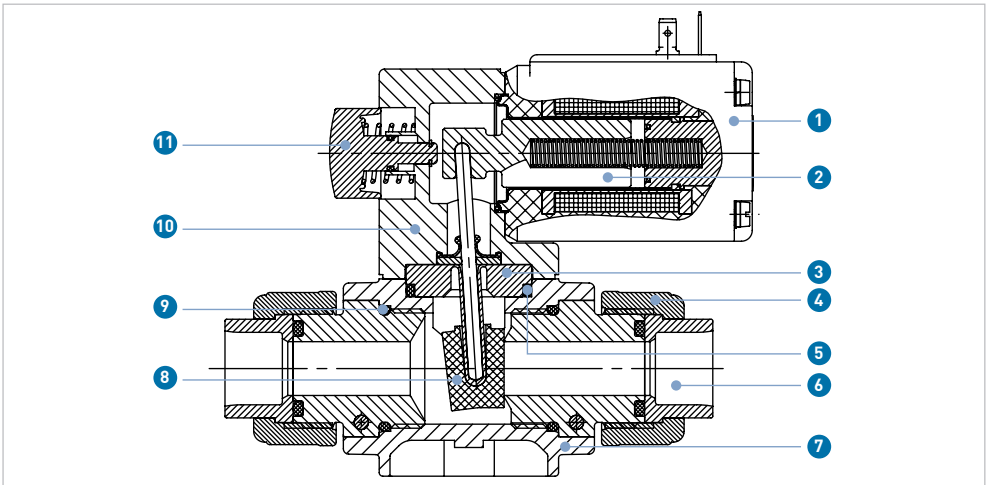
- With solvent cement socket, metric
- Circuit functions: A and B (Type 160), E and F (Type 161)
- PN 0 – 3bar
- Handle with ratchet setting
- Electrical connection with cable plug
- Protection rating IP65
- Directly-acting valve up to nominal diameter DN20, separated from media
- Vibration-resistant, block-connected coil system
- Energy-efficient decrease in power in all DC models
- Increased safety through electrical position feedback
- Robust, service-friendly manual override

Flow media

Suited for aggressive, abrasive and slightly contaminated media.

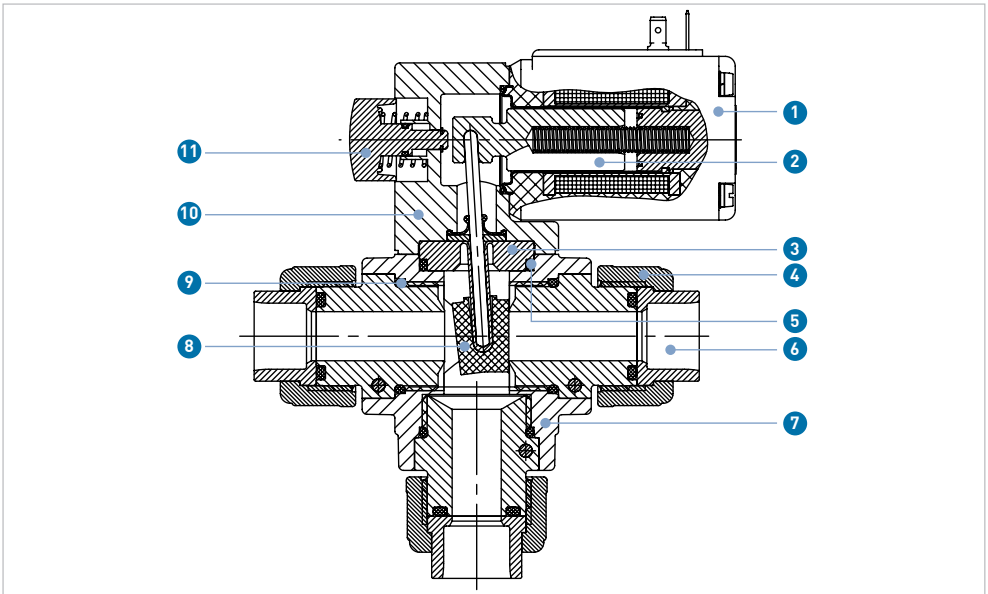
Technical data

2/2-way with union nut and connection fitting



1 Coil (epoxy)
2 Core (stainless steel 1.4105)
3 Rotating stem (PTFE)
4 Union nut (PVC)
5 O-ring (FKM, EPDM)
6 Connection fitting (solvent cement socket)
7 Housing (PVC)
8 Valve cone (FKM, EPDM)
9 O-ring (FKM, EPDM)
10 Angle flange (PC)
11 With manual override with locking function

3/2-way with union nut and connection fitting



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Specification		
Nominal diameter	DN10-20	
Housing material	PVC	
Sealing material	EPDM, FKM	
Media	Aggressive and non-aggressive liquids, neutral gases, aggressive gases according to their diffusion characteristics	
Media temperature (Housing and gasket)	PVC / EPDM	-10 to +50 °C
	PVC / FKM	-10 to +50 °C
Ambient temperature	Max. +50 °C	
Viscosity	37mm²/s	
Supply voltage	24 V / UC*, 230 V / 50 Hz	
Voltage tolerance	±10 %	
Switching frequency	AC	60/min
	UC	Max. 6/min
Rated duty	ED 100 %	
Electrical connection	Cable plug, according to DIN EN 175301-803, form A	
Protection rating	IP 65 with cable plug	
Mounting position	As desired, preferably with actuator on top	

*UC = Universal Current = AC/DC

Electrical power consumption

Nominal diameter (mm)	Kv value water[1] (l/min)	Pressure range[2]				Power consumption Inrush (electrical)		Power consumption Operation(electrical)		Weight
		A (bar)	B (bar)	E (bar)	F (bar)	AC (VA)	UC (W)	AC (VA/W)	UC (W)	(kg)
10	33	0-3	0-2	0-0.6	0-1	100 - 120	100	48/16	9	1.2
15	75	0-1	0-1	0-0.3	0-0.5	100 - 120	100	48/16	9	1.2
20	100	0-0.5	0-0.5	0-0.15	0-0.25	100 - 120	100	48/16	9	1.2

[1] Kv value (l/min) at +20 °C, 1 bar pressure at valve inlet and free outlet

[2] Pressure data (bar) gauge pressure

Switching time

Open	Close
(ms)	(ms)
10 - 20	40 - 60

Switching time (ms): Measurement at valve outlet at 6 bar and +20 °C. Open: Pressure build-up 0% to 90%. Close: Pressure build-up 100% to 10%.

Technical basics

Valve handling

Installation notes

- Turn off pressure and vent pipes before removing pipes and valves.
- Switch off power and secure from reconnection before performing any procedures on the device or system.
- Observe the applicable accident prevention and safety regulations for electrical devices.
- Keep the device away from easily flammable materials and media and do not touch with bare hands.
- Risk of injury due to component failure of valves with AC power.
- Assembly may be performed only by authorized specialists using appropriate tools

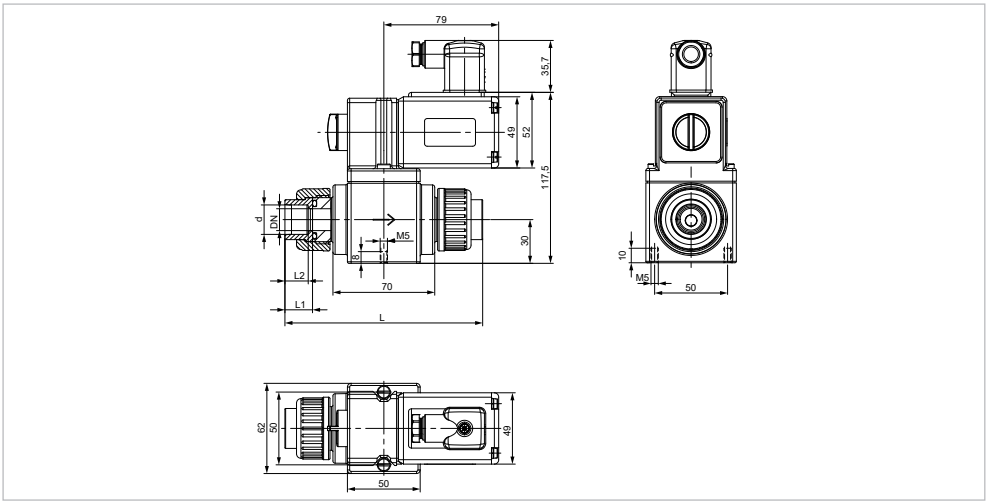
Electrical connection

Observe the voltage and Type of current as specified on the Type plate.
Voltage tolerance ± 10 %. Connection via cable plug, protection rating IP65.
Cable 3 x 0.75 mm^2. Flat pin terminal = ground connection.
Cable plug insert can be rotated by 4 x 90°. Tightening torque for cable plug attachment 1 Nm.

⚠ Installation and maintenance must be performed in accordance with the corresponding and current issue installation manual. The installation manual is provided with the product and also available from our document library in the on-line product catalogue at www.gfps.com

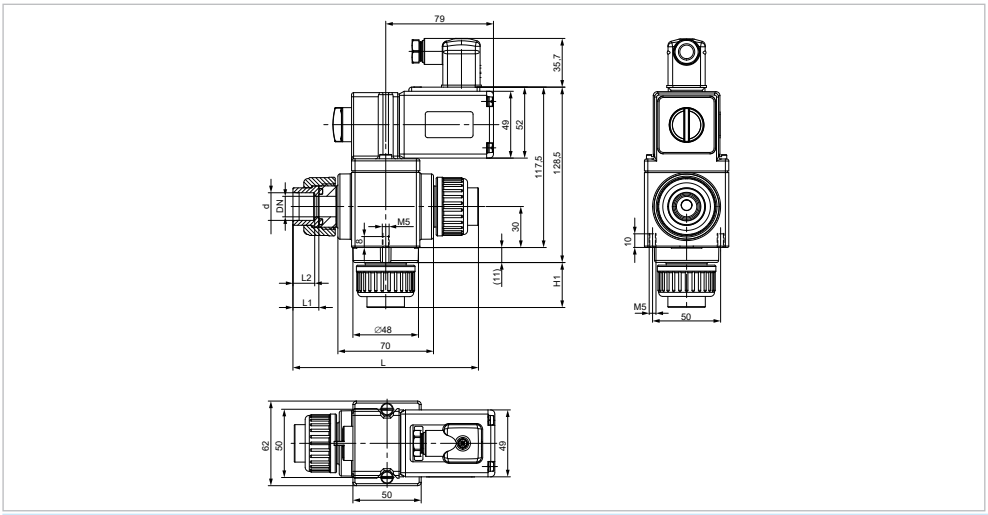
Dimensions

2/2-way with union nut and connection fitting



Material	DN (mm)	Process connection	L1 (mm)	L2 (mm)	d (mm)	L (mm)
PVC	10	Solvent cement socket	17	14	16	130
	10 (with connection for DN15)	Solvent cement socket	19	16	20	134
	15	Solvent cement socket	19	16	20	136
	15 (with connection for DN20)	Solvent cement socket	22	19	25	142
	20	Solvent cement socket	22	19	25	144

3/2-way with union nut and connection fitting



Material	DN (mm)	Process connection	H1 (mm)	L1 (mm)	L2 (mm)	d (mm)	L (mm)
PVC	10	Solvent cement socket	30	17	14	16	130
	10 (with connection for DN15)	Solvent cement socket	32	19	16	20	134
	15	Solvent cement socket	33	19	16	20	136
	15 (with connection for DN20)	Solvent cement socket	36	22	19	25	142
	20	Solvent cement socket	37	22	19	25	144

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