



PRESSURE

2025



ACCESSORIES



WS-64

Adapter



Features

- / Economical
- / Temperature decoupling
- / Various materials

Description:

The WS-64 is an adapter according to DIN 16281 for the installation of pressure measuring instruments. Using an adapter could make sense, wherever an instrument can not be connected directly to the pipe. This could be the case, when the plant offers not enough space or the operator wishes to observe all devices conveniently in one place. The WS-64 is also an economical, though not quite as effective, alternative to conventional cooling lines and can be used for temperature decoupling to protect heat-sensitive devices from radiated heat.

Application:

The adapter can be mounted, for example, with a wall-mounting bracket, in order to securely connect a pressure gauge with a hose or pipe. The various materials and connection sizes make the WS-64 versatile for application.



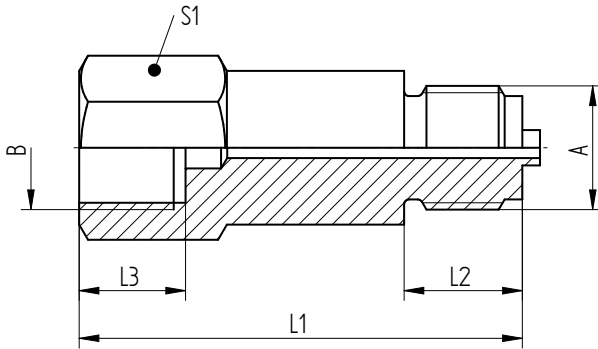
Technical Specifications:

Process connection /	G ½" or G ¼"
max. Pressure /	400 bar / brass 250 bar
max. Temperature /	
Brass:	120°C
Steel:	200°C
Stainless Steel:	200°C
Material /	
Body:	brass, steel, SS 1.4571

Ordering Codes:

Order Number	WS-64.	1.	2
WS-64 Adapter			
Process connection /			
1 = G ½"			
2 = G ¼"			
Material /			
1 = brass (G ½" only)			
2 = steel			
3 = stainless steel 1.4571			

Dimensions in mm:



Version	L1 / mm	L2 / mm	L3 / mm	S1
Brass G ½"	75	20	18	27
Steel G ¼"	69	13	11	27
Steel G ½"	75	20	18	27
SS 1.4571 G ¼"	69	13	11	27
SS 1.4571 G ½"	75	20	18	27



SR-61

Siphon



Features

/ Cost-effective

/ Up to 400°C

/ Up to 160 bar

/ Cooling-line and particle-filtration

Description:

Siphons can be used to protect pressure measuring devices, like pressure gauges, from high temperatures or pressure surges and pulsations. They are available with a straight, circular (DIN 16282 C) or U-shaped (DIN 16282 A) pipe with 90° turn.

Application:

The large surface of the tube will cool the media with the ambient air temperature. Flowing through multiple curves or a circle dampens pressure surges and keeps the pressure at the device constant. A siphon can be used for fluids, gases and even steam. It can be installed with a G 1/2" connection. The curvature of the pipe also helps to protect the device from particles, since these can be deposited here.



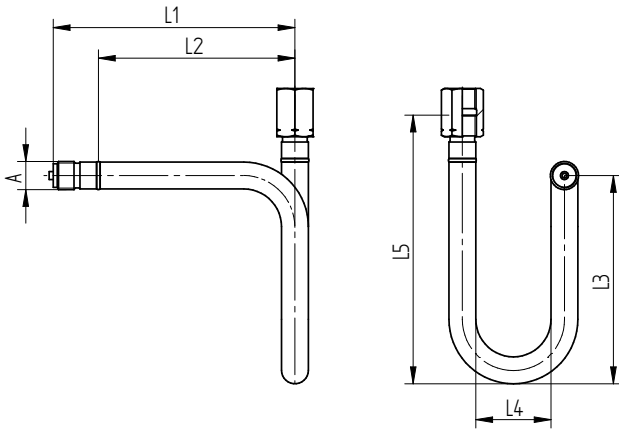
Technical Specifications:

Process connection /	G 1/2"
max. Pressure /	
at 120°C:	160 bar
at 300°C:	120 bar
at 400°C:	100 bar
Material /	
Body:	steel, SS 1.4571

Ordering Codes:

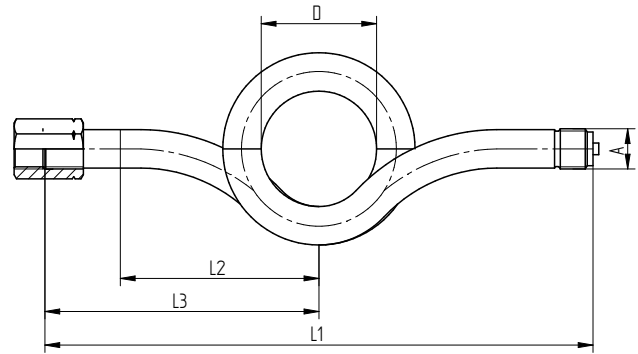
Order number	SR-61.	1.	2
SR-61 Siphon			
Style /			
1 = U-shape (DIN 16282 A)			
2 = U-shape long (DIN 16282 A)			
3 = circular (DIN 16282 C)			
Material /			
1 = steel			
2 = SS 1.4571			

Dimensions in mm (U-Shape):



Version	L1 / mm	L2 / mm	L3 / mm	L4 / mm	L5 / mm
Steel	180	145	155	56	200
Steel (long)	255	220	155	56	200
Stainless Steel	180	145	155	56	200
Stainless Steel (long)	255	220	155	56	200

Dim. in mm (circular):



Version	L1 / mm	L2 / mm	L3 / mm	D
Steel	275	95	130	56
Stainless Steel	275	95	130	56



BG-03

Flow Limiter for Large Quantities of Flow



Features

- / Regulation without ext. power supply
- / Power-saving
- / For diameters DN20 to DN100
- / For screw fitting in existing pipes
- / All-metal version
- / Brass or stainless steel material

Description:

The BG-03 series of flow limiters has been developed for limiting the flow of water-like media to a particular value. They ensure that the flow value does not exceed even during fluctuating forward or reverse pressures. In contrast to most of the devices of this type normally available in the market, the BG-03 limiters have a stainless steel spring element instead of the commonly used plastic membrane. As a result of the differential pressure occurring over the limiter, the spring element gets pressed more or less against the sealing surface of the housing. The split opening between the sealing surface and the spring varies continually. As a result of the enlargement of the split opening when the pressure falls or, as the case may be, its decrease when the pressure rises, the quantity of fluid passing through the device is maintained at a constant rate. A version for flanged installation is optionally available. In doing so, the BG-03 will be intermediated flange clamped (flanges/adapter not included).

Application:

These devices are used for all water-like media. They can be deployed in water distribution systems in the industry, in sanitary and car-washing installations and in sterilization and water treatment installations.



Technical Specifications:

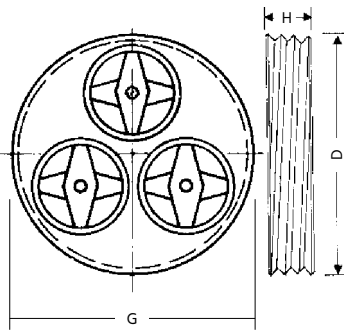
min. Regulating pressure / 2 bar

max. Differential pressure / 10 bar

max. Temperature / 200 °C

Accuracy / up to 2l/min ± 15%
up to 3l/min ± 10%

Dim. Threaded version:

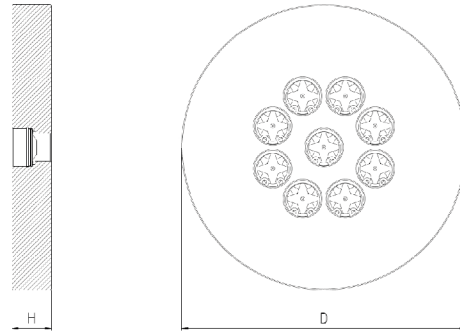


Version (G)	H	Q _{min} l/min	Q _{max} l/min	Weight (g)
¾"	12	1	30	25
1 ½"	12	3	90	104
2"	15	5	150	190
2 ½"	15	7	210	290
3"	15	9	270	375

Ordering Codes:

Order number	BG-03.	1.	3.	□□□
BG-03 Flow limiter				
Material / 1 = brass (not for flange) 2 = stainless steel				
Size /				
1 = G ¾"	Threaded version			
2 = G 1 ½"				
3 = G 2"				
4 = G 2 ½"				
5 = G 3"				
10 = DN40	Flange version			
11 = DN50				
12 = DN65				
13 = DN80				
14 = DN100				
Flowrate / □□□ = in l/min. water (1-420 l/min.)				

Dim. Flange version:



mm Nom. Diameter	Stars	Pressure rate adapter flange	Flowrate l/min.		H mm	D mm
			min.	max.		
ND40	2	PN 16 / 300 lbs	2	60	19.1	95
ND50	4	PN 16	4	120	18.0	110
ND50	4	300 lbs	4	120	23.9	113
ND65	7	PN 16 / 300 lbs	7	210	23.9	130
ND80	9	PN 16	9	270	20.0	145
ND80	9	300 lbs	9	270	23.9	150
ND100	14	PN 16	14	420	20.0	165
ND100	14	300 lbs	14	420	23.9	182

Flowrates flange:

Flowrate for H₂O at 20 °C in l/min

Type	Q _{min}	Q _{max}
DN40	2	60
DN50	4	120
DN65	7	210
DN80	9	270
DN100	14	420

Flow quantities:

Various individual elements can be supplied for the following flow quantities:

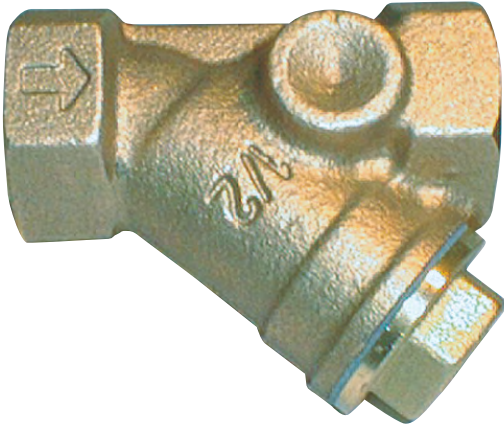
1 - 420 l/min water in 1 l/min steps.

By adding several elements on one limiter disc, nearly any flow quantities can be achieved.



FT-01

Strainer with and without Magnetic Separator



Features

- / For pipes of G 1/4" to G 2"
- / Filter mesh from 0.25 to 1 mm
- / Compact design
- / Gunmetal or st. steel

Description:

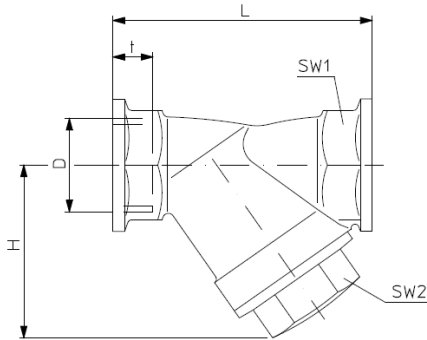
The FT-01 series of strainers is designed as slanted seat filter; they reliably prevent damages to the devices installed inside the pipe caused by impurities in the medium. Especially measuring devices with magnetic components can be protected by strainers with magnetic separators against malfunctioning due to ferrite particles.

Application:

The strainer has to be installed in the marked direction of flow and the filter should point downwards so particles can be deposited accordingly. The FT-01 can be used for fluids, gases (with the exception of fluids group 1 from guideline 2014/68/EU) and vapours up to 150°C, water, mineral, gear, heating and hydraulic oils etc. so as to protect pumps, gearboxes and flow measuring devices.



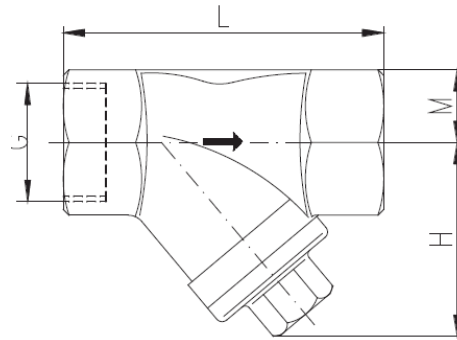
Dimensions Gunmetal:



Version: with magnetic separator, mesh 0,60 mm

D	L	t	H	SW1	SW2
1/4"	56	11	34	21	17
3/8"	63,5	10,1	34	21	17
1/2"	66,5	13,2	42	27	22
3/4"	76,5	14,5	52	32	27
1"	90	15	61	38	32
1 1/4"	112	18	73	47	41
1 1/2"	120	18	82	54	46
2"	150	22	94	66	56

Dimensions Stainless Steel:



Version: without magnetic separator, mesh 0,50 mm

D	L	M	H
1/2"	65	12,5	42,5
3/4"	75	15,5	49
1"	90	18,5	57,5
1 1/4"	110	23	65
1 1/2"	120	26,5	74
2"	150	33,5	85

Version: without magnetic separator, mesh 0,25 mm

D	L	t	H	SW1	SW2
1/4"	56	11	34	21	17
3/8"	63,5	10,1	34	22	17
1/2"	66,5	13,2	42	27	22
3/4"	76,5	14,5	52	32	27
1"	90	15	61	38	32
1 1/4"	112	18	73	47	41
1 1/2"	120	18	82	54	46
2"	150	22	94	66	56

Version: without magnetic separator, mesh 0,25 mm

D	L	M	H
1/2"	65	12,5	42,5
3/4"	75	15,5	49
1"	90	18,5	57,5
1 1/4"	110	23	65
1 1/2"	120	26,5	74
2"	150	33,5	85

Version: with magnetic separator, mesh 0,60 mm

D	L	t	H	SW1	SW2
1/2"	66,5	13,2	42	27	22
3/4"	76,5	14,5	52	32	27
1"	90	15	61	38	32
1 1/4"	112	18	73	47	41
1 1/2"	120	18	82	54	46
2"	150	22	94	66	56

Version: with magnetic separator, mesh 0,50 mm

D	L	M	H
1/2"	65	12,5	42,5
3/4"	75	15,5	49
1"	90	18,5	57,5
1 1/4"	110	23	65
1 1/2"	120	26,5	74
2"	150	33,5	85



Technical Specifications:

Temperature /
 -10. . .+150 °C gunmetal
 -30. . .+180 °C st. steel

Materials gunmetal /

Housing: gunmetal
 Sieve, strainer: stainless steel
 Magnetic system: hard ferrite

Materials st. steel /

Housing: SS 1.4408
 Sieve, strainer: SS 1.4301
 Seal: PTFE
 Magnetic system: hard ferrite

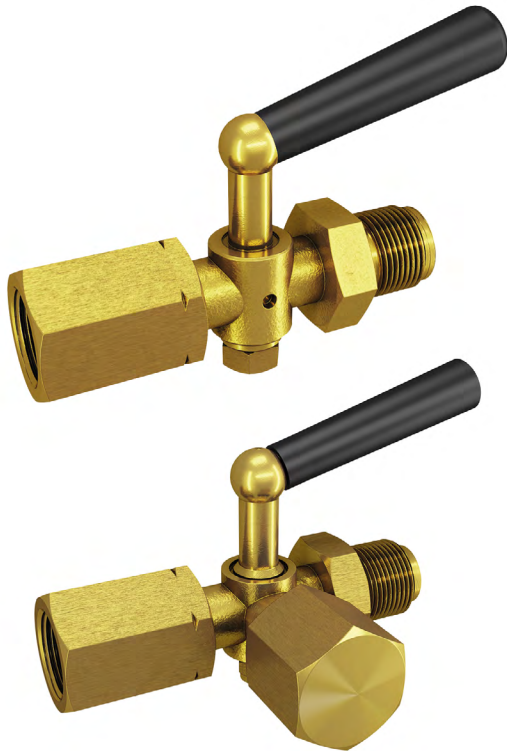
max. Pressure /

Gunmetal: 25 bar
 Stainless steel: 40 bar (16 bar with magn. separator)

Ordering Codes:

Order number	FT-01.	1.	3.	4.	2
FT-01 Strainer					
Version /					
1 = without magnetic separator					
2 = with magnetic separator (for SS only ½" to 1"; for GM ½" to 2")					
Material /					
1 = gunmetal (for nominal diameters only ¼" to 2")					
3 = stainless steel (for nominal diameters only ½" to 2")					
Connection /					
0 = female thread G ¼" (FT-01.x.1 only)					
1 = female thread G 3/8" (FT-01.x.1 only)					
2 = female thread G ½"					
3 = female thread G 3/4"					
4 = female thread G 1"					
5 = female thread G 1¼"					
6 = female thread G 1½"					
7 = female thread G 2"					
Filter mesh grade /					
1 = 0.6 mm (only gunmetal)					
2 = 0.25 mm					
3 = 0.5 mm (only SS ½" to 2")					





AH-65

Manometer Gauge Stopcock According to DIN 16262 A/B & 16263

Features

/ Monitor and vent the pipe

/ Brass or stainless steel

/ -10°C to 50°C

/ Up to 25 bar

Description:

A stopcock is used for the inlet, flow or outlet in pipes to control liquids and gases. Depending on the switch position, measuring devices can receive pressure (operating mode), or be relieved from it (de-pressuring mode). In the blow-out position, fluids and gasses can pass through the stopcock.

Application:

Stopcocks are available with or without an additional test connector (DIN 16263). This connector can be used for another measuring device, to test an installed pressure gauge. The stopcock can be installed via G $\frac{1}{4}$ " or G $\frac{1}{2}$ " threads.



Technical Specifications:

Process connection / G ½" or G ¼"

max. Pressure /

G ½" Brass: 25 bar

G ½" SS: 16 bar

G ¼" Brass: 6 bar

G ¼" SS: 6 bar

max. Media temperature / -10°C to 50°C

Materials /

Body: Brass, SS 1.4571

Handle: PP

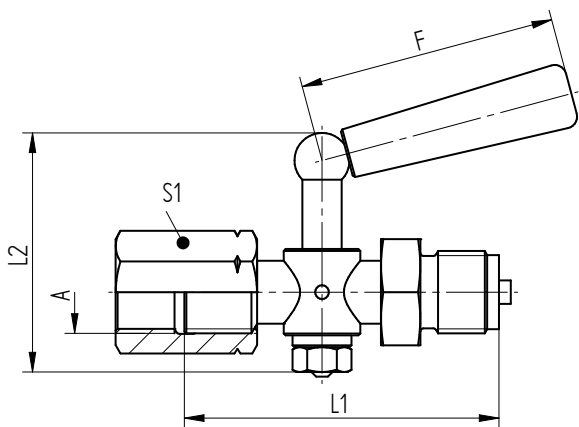
When connecting to a Manometer, please use flat gaskets DIN 1625!

Ordering Codes:

Order number	AH-65.	1.	2.	0
AH-65 Manometer Gauge Stopcock				
Connection /				
1 = G ½"				
2 = G ¼"				
Material /				
1 = brass				
2 = stainless steel 1.4571				
Test Connector for G½" /				
0 = without (DIN 16262 A/B)				
9 = with Test Connector M20 x 1.5 (DIN 16263)				

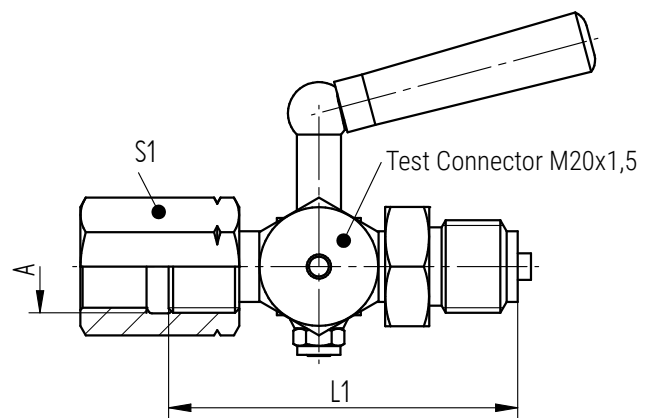
Please consider the pressure as indicated on the left.

Dimensions in mm:



Version	L1 / mm	L2 / mm	F / mm	S1
Brass G¼"	55	39	28	17
Brass G½"	79,5	60	62	27
SS 1.4571 G¼"	57	63	48	17
SS 1.4571 G½"	80	67	60	27

Dimensions (test connector):



Version	L1 / mm	S1
Brass	80	27
SS 1.4571	80	27



AV-67

Manometer Gauge shut-off Valve according to DIN 16270 A & 16271 A



Features

/ Up to 400 bar and 200°C

/ Closing, opening and throttling

/ Additional test connector

Description:

This shut-off valve can also throttle the pressure in a pipe, instead of just opening and closing it. The AV-67 is, in its stainless steel version, very tough, and can resist pressures up to 400 bar and 200°C. An optional test connector can be used to replace measuring instruments or test the measurement result with another device, without removing it from the process or interrupting the actual operation.

Application:

Shut-off valves can be installed in front of devices operating only within a certain pressure range or a certain amount of media. This way, measuring devices can be started slowly and protected from pressure surges.



Technical Specifications:

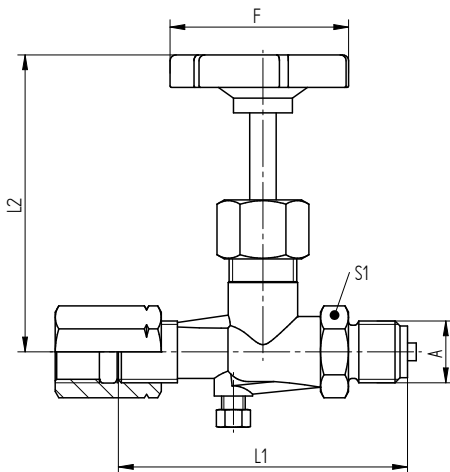
Process connection /	G 1/2"
max. Pressure /	400 bar; 250 bar (Brass)
max. Media temperature /	-10°C to 200°C; resp. -10°C to 120°C (Brass)
Materials /	
Seal:	Steel = Graphite Brass and SS = PTFE
Body:	Brass, Steel 1.0460, SS 1.4571
Handwheel:	Bakelit

When connecting to a Manometer, please use flat gaskets DIN 1625!

Ordering Codes:

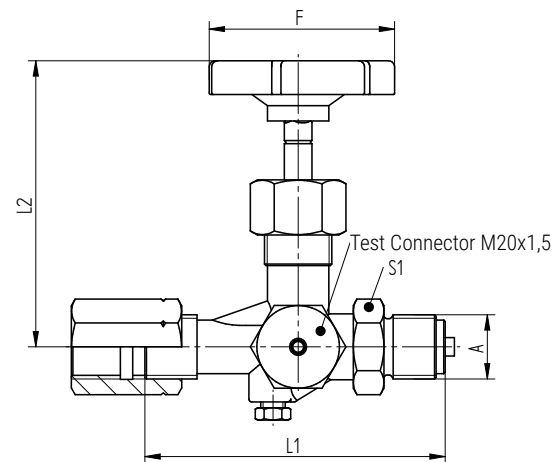
Order number	AV-67. B. 0
AV-67 Manometer Gauge shut-off Valve	
Version /	
A = 250 bar - 120 °C - Brass	
B = 400 bar - 120 °C - Steel 1.0460	
C = 400 bar - 200 °C - SS 1.4571	
Test Connector /	
0 = without (DIN 16270 A)	
9 = with test connector M20 x 1,5 (DIN 16271 A)	

Dimensions in mm:



Version	L1 / mm	L12 / mm	F / mm	S1
Brass	100	100	63	27
Steel 1.0460	100	94	63	27
SS 1.4571	100	94	63	27

Dimensions (test connector):

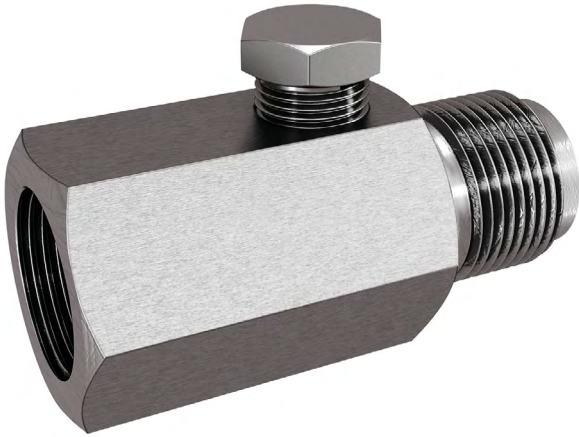


Variante	L1 / mm	L12 / mm	F / mm	S1
Brass	100	100	63	27
Steel 1.0460	100	94	63	27
SS 1.4571	100	94	63	27



RS-68

Shock Preventer



Features

/ Variable configuration

/ Easy to handle

/ Different materials

/ PN 250 and PN 400

Description:

The RS-68 is a shock preventer to limit pressure surges and pulsations from damaging pressure gauges and transmitters. It can also be integrated into any process easily, to protect a variety of other devices too. The throttling effect is generated through changing the flows inlet size with an adjusting screw.

Application:

Whether in general mechanical engineering, hydraulics, compressors, pumps or plant engineering, the RS-68 is used everywhere, where pressure peaks may occur. The adjusting screw should be screwed in completely, before installing the reducer, because it has to be adjusted to the local measuring conditions. After starting the plant or process, the screw should be screwed outwards just as much as pressure surges can not be seen on the pressure gauges scale anymore. Only fluids without impurities should be used for the reducer to work. Otherwise a clogging of the flow opening can endanger the pressure impulse reducer.



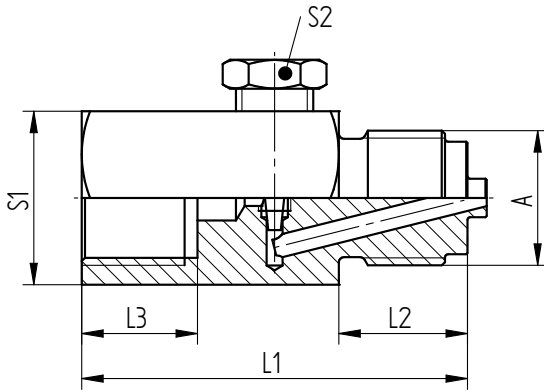
Technical Specifications:

Process connection /	G ½" or G ¼"
max. Pressure /	250 bar for brass 400 bar for steel & st. steel
max. Temperature /	
Brass:	-10°C up to 120°C
Steel:	-10°C up to 200°C
Stainless Steel:	-10°C up to 200°C
Material /	
Body:	brass, steel, SS 1.4571

Ordering Codes:

Order number:	RS-68.	1.	2
RS-68 Shock Preventer			
Process connection /			
1 = G ½"			
2 = G ¼"			
Material /			
1 = brass			
2 = steel			
3 = stainless steel 1.4571			

Dimensions in mm:



Version	L1 / mm	L2 / mm	L3 / mm	S1	S2
Brass G¼"	46	14	11	19	12
Brass G½"	60	20	18	27	14
Steel G¼"	47	13	11	19	14
Steel G½"	60	20	18	27	14
SS 1.4571 G¼"	47	13	11	19	12
SS 1.4571 G½"	60	20	18	27	14



UM-01

Universal Transmitter for RTD, TC, Ohm, Potentiometer, mA and V



Features

- / Ideal for evaluation of resistance thermometers or levelmeters
- / Galv. separation of analogue signals
- / Models with relay and analogue output
- / Optionally with DNV approval
- / Universal power supply through 21.6 - 253 V AC or 19.2 - 300 V DC
- / Including sensor power supply
- / Attachable display
- / SIL 2

Description:

The UM-01 universal transmitter is a module for assembling into a switchgear cabinet that can receive at the input measured values from resistance thermometers, thermo-elements, ohmic resistors, potentiometers or devices with analogue signals and translates them into a galvanically separated analogue signal. Optionally, the UM-01 can also be equipped with two additional programmable relay outputs; alternatively it can be supplied only as a cost-effective switching unit with relay outputs. The UM-01 is programmed through a separately available mountable display PE451 which is fixed on the front side of the measurement converter to display continuously the input signal, the units, the device TAG-No. and the relay or the output status, as required. The special feature of PE451 is, however, that the UM-01 operates even without it and that the program parameters in the PE451 remain saved. Programming more than one UM-01 is, therefore, a child's play. Once the configuration is done, the settings are easily read into any new measurement converter on mounting and pressing the button; cumbersome resetting of parameters is, therefore, unnecessary. The UM-01 measurement converter is powered universally by DC or AC voltages and is compatible with most common transmitter devices like thermo-elements of type B to type LR, resistance thermometers NI100 and PT100 as 2, 3 or 4-wire and transmitters with analogue output range of 0-20 mA or 0-10 V DC. The UM-01 has been developed in accordance with the most stringent safety measures and hence can be used in installations with SIL 2.

Application:

Wherever temperatures are measured using thermo-elements or resistance thermometers or levels are output by levelmeters as a potentiometer signal, the UM-01 is the ideal supplement in the line of measuring devices. It converts the linear input signal into an analogue output signal and offers, additionally, the facility of tapping two setpoints as a potential-free relay NO contact. Since the transmitter connected at the input of UM-01 is powered directly by the UM-01, the measurement converter is perfectly suited as a signal separator that establishes a galvanic



separation between the measuring and analyzing circuits. The UM-01 has been conceived for universal application so as to enable the user to save costs on inventory, since he would only need a single device as against two to three variants earlier. Optionally, the UM-01 can be supplied with UL approval for markets in USA or with DNV approval for shipping applications.

Electrical Specifications:

Ambient temperature /	-20°C...+60°C
General specifications /	
Universal power supply:	21,6...253 VAC, 50...60 Hz or 19,2...300 VDC
Power consumption:	≤ 2,0 W (≅ 2,5 W, UM-01.3)
Fuse:	400 mA T / 250 VAC
Insulation voltage, Test/Operation:	2,3 kVAC / 250 VAC
Communication interface:	Programming front PE451
Signal/Noise ratio:	min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%):	
· Temperature input:	≤ 1 s
· mA-/V input:	≤ 400ms
Calibration temp.:	20...28°C

Compliance with directives /

EMV:	2014/30/E4
LVD:	2014/35/E4
FM:	3025 177
UL, Standard f. Safety	UL 508

2-wire power supply

(terminals 44, 43) / 25...16 VDC / 0...20 mA

Cable diameter / 1 x 2.5 mm² max. flex

Terminal joint torque / 0.5 Nm

Rel. humidity / <95% RF (non-condensing)

Dimensions with PE451 / 109 x 23.5 x 116 mm (H x W x D)

Dimensions without PE451 / 109 x 23.5 x 104 mm (H x W x D)

Protection class

Housing/Terminal / IP50 / IP20

Weight / Basic weight 145 g plus
25 g in relay outputs plus
15 g with PE451

Accuracy Basic Values:

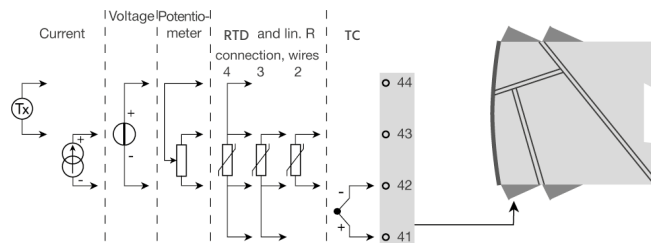
Input type	Basic accuracy	Temp. coefficient
mA	≤ ± 4 μA	≤ ± 4 μA / °C
Volt	≤ ± 20 μV	≤ ± 2 μV / °C
RTH	≤ ± 0.2°C	≤ ± 0.01°C / °C
Lin. R	≤ ± 0.1 Ω	≤ ± 0.01 Ω / °C
Potentiometer	≤ ± 0.1 Ω	≤ ± 0.01 Ω / °C
TE-Types E, J, K, L, N, T, U	≤ ± 1°C	≤ ± 0.05°C / °C
TE-Types R, S, W3, W5, LR	≤ ± 2°C	≤ ± 0.2°C / °C
TE-Type: B 85°C...200°C	≤ ± 4°C	≤ ± 0.4°C / °C
TE-Type: B 200°C...1820°C	≤ ± 2°C	≤ ± 0.2°C / °C

Accuracy in general /

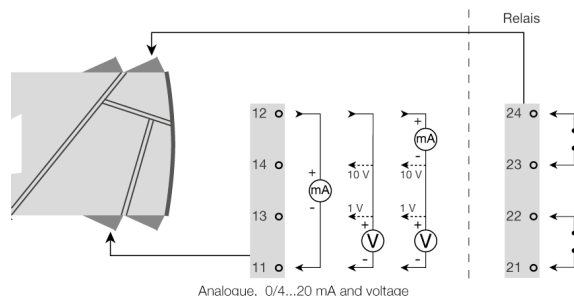
Absolute accuracy:	≤ ± 0.1% of operating range
Temperature coefficient:	≤ ± 0.01% of operating range per °C
EMV error voltage factor:	≤ ± 0.5% of measuring range
Extended EMV error stability:	NAMUR NE21, criterion A
Burst:	≤ ± 1% of measuring range

Applications

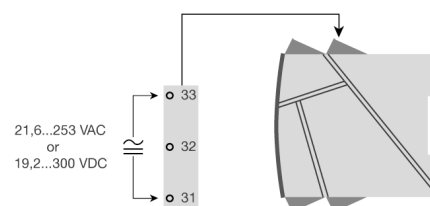
Input signals:



Output signals:



Power supply:





Inputs:

RTD-, linear resistance and potentiometer /

Eingangstyp	MIN-Wert	MAX-Wert	Norm
Pt100	-200°C	+850°C	IEC60751
Ni100	-60°C	+250°C	DIN 43760
Lin. R	0 Ω	10000 Ω	-
Potentiometer	10 Ω	100 kΩ	-

Cable resistance per wire for RTD: 50 Ω max.
 Sensor current for RTD: nom. 0.2 mA
 Effect of wire resistance (3- or 4-wire RTD): < 0.002 Ohm / Ohm
 Sensor recognition RTD: yes
 Short-circuit detection RTD: < 15 Ω

Thermo-element input /

Type	MIN-Value	MAX-Value	Standard
B	0°C	+1820°C	IEC 60584-1
E	-100°C	+1000°C	IEC 60584-1
J	-100°C	+1200°C	IEC 60584-1
K	-180°C	+1372°C	IEC 60584-1
L	-200°C	+900°C	DIN 43710
N	-180°C	+1300°C	IEC 60584-1
R	-50°C	+1760°C	IEC 60584-1
S	-50°C	+1760°C	IEC 60584-1
T	-200°C	+400°C	IEC 60584-1
U	-200°C	+600°C	DIN 43710
W3	0°C	+2300°C	ASTM E988-90
W5	0°C	+2300°C	ASTM E988-90
LR	-200°C	+800°C	GOST 3044-84

Compensations accuracy (CJC) through internal sensors: ± (2,0°C + 0,4°C * Δt)
 Sensor detection all TC types: yes
 Sensor error current on detection: nom. 2 µA, otherwise 0 µA

Power input /

Operating range: 0 .. 20 mA
 Programmable op. ranges: 0 .. 20 and 4 .. 20 mA
 Input resistance: nom. 20 Ω + PTC 50 Ω

Voltage input /

Operating range: 0 V .. 12 VDC
 Programmable op. ranges: 0/0,2 .. 1; 0/1 .. 5; 0/2 .. 10 VDC
 Input resistance: nom. 10 MΩ

Outputs:

Current output (UM-01.2 and UM-01.3 only) /

Signal range: 0 .. 20 mA
 Programmable operating ranges: 0/4 .. 20 or 20 .. 4/0 mA
 Load: 800 Ω
 Load stability: ≤ 0.01% of measuring range / 100 Ω
 Sensor error detection: 0 / 3.5 / 23 mA / keine
 NAMUR NE43 Up-/Downscale: 23 mA / 3.5 mA
 Power limiting: ≤ 28 mA

Voltage output (UM-01.2 and UM-01.3 only) /

Signal range: 0 .. 10 VDC
 Programmable operating ranges: 0/0,2 .. 1; 0/1 .. 5; 0/2 .. 10; 1 .. 0,2/0; 5 .. 1/0; 10 .. 2/0 VDC
 Load: ≥ 500 kΩ

Relay outputs (UM-01.1 and UM-01.3 only) /

Relay function: Setpoint value, Window, Sensor error, Power and Off
 Hysteresis: 0 .. 100%
 On-/Off delay: 0 .. 3600 s
 Maximum voltage: 250 VRMS
 Maximum current: 2 A / AC or 1 A / DC
 Maximum AC power: 500 VA
 Sensor error confirmation: Close / Open / Hold

Ordering Codes:

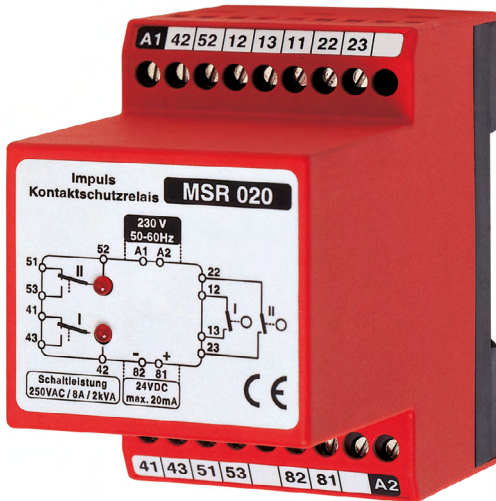
Order number	UM-01.	2.	1
UM-01 Universal Transmitter			
Output variants /			
1 = Limit switch with two potential-free relays			
2 = Transmitter with 4-20 mA- or 0-10 V DC output			
3 = Transmitter with 4-20 mA- or 0-10 V DC output and two potential-free relays			
Programming unit PE451 /			
0 = none			
1 = with programming unit PE451 for front-side mounting on the UM-01			





MSR

Multifunctional Relay



Features

/ Protects your sensor elements

/ Practical time response

/ Additional DC voltage output

Description:

The MSR series includes the range of multifunctional relays MSR 10, MSR 11 and MSR 20 that cover all commonly known applications. Thus, the MSR 10 and the MSR 20 are purely contact protecting relays for one or two control signals which protect the contacts in measuring devices against overload due to high switching operations especially in inductive or capacitive loads. In these units, a smartly selected drop-out delay ensures that highly frequent switching of sensor contacts is disregarded and, therefore, the switching points are unambiguously defined. The MSR 11 has a highly qualified bistable interval relay with self-preservation that is capable of controlling the pump completely in combination with two fill level switches.

Application:

Naturally, this unit also protects the contacts of the switch connected to it against overloads. The MSR series of devices is designed for a standard supply voltage of 230 V AC, but they possess also a 24 V DC DC voltage output. Optionally, they are available for connecting to 115 V AC, 24 V AC and 24 V DC. On request, the MSR 10, MSR 11 and MSR 20 can be provided with 24 V DC PNP electronic outputs. The polyamide housing has a housing of type IP 20 protection; however, it can be equipped with an outer housing in IP 65 available as accessory. The device can be assembled on a standard mounting rail as per DIN 50022 or by means of an adapter for individual mounting through screw fitting.



Versions:

MSR Multifunctional Relay

Type: MSR10

monostable contact protective relay for single contacts

Type: MSR11

bistable interval relay with locking feature

Type: MSR20

monostable contact protective relay for double contacts

Supply voltage:

standard 230 VAC;

optional 115 VAC, 24 VAC or 24 VDC

Electrical Specifications:

Standards /

EN 50 178:	electrical safety
EN 61 000-6-2:	stability
EN 61 000-6-3:	fault reporting
EN 60 947-5-1:	low voltage switch-gear

Auxiliary power /

Supply voltage / 230 VAC (standard),
50 to 60 Hz

Consumption / MSR 10 typ. 6 VA
MSR 11 typ. 6 VA
MSR 20 typ. 6 VA

Control signals /

Control voltage:	35 to 40 VDC Pulse
Pulse-Pause ratio:	0.5 ms / 50 ms (+/-20%)
Switching threshold:	9.7 VDC (+/-10%)
Input impedance:	3300 Ohm, 100 nF (+/-20%)
Line and contact resistance:	max. 4700 Ohm, 47 nF

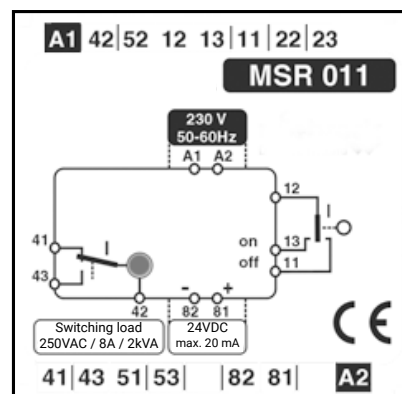
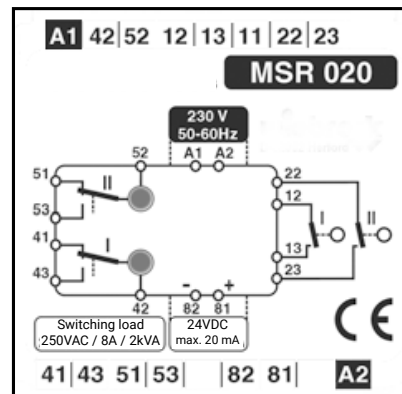
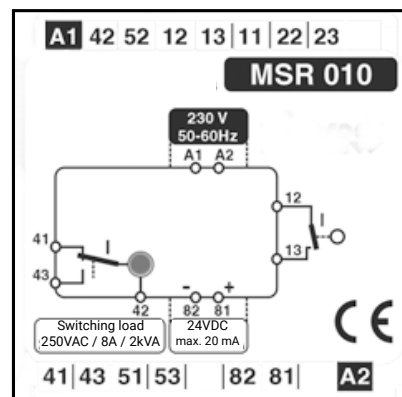
Output /

Relay output.:	1 or 2 potential-free change-over
Draw-up and drop-out delay:	10 ms / 450 ms +/- 20% + 50 ms
Contact material:	AgCdO or AgNi+Au
Switching load:	max. 250 VAC; 8 A min. 24 VDC; 100 mA
Short-circuit fuse element:	F 10 A (max. short-circuit current < 100 A)
Voltage output:	(cond. short-circuit protected)
Voltage:	24 VDC (+/-10%)
Load:	max. 20 mA

Technical Specifications:

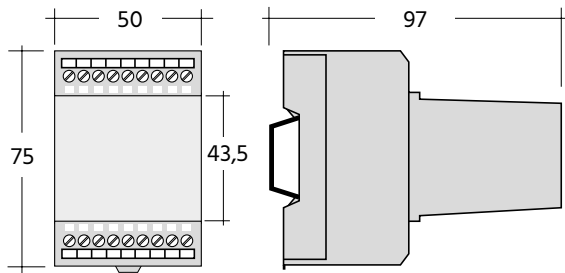
max. Ambient temp. /	0°C to 70°C
Protection class /	IP 20
Assessed insulation voltage /	250 VAC
Housing /	polyamide 6.6
Fixture /	standard rail 35 x 7.5 DIN50022
Connection cross-sections /	0.5 bis 2.5 mm ² (single or fine-wire)

(for individual fixture an adapter is provided)





Dimensions in mm:



Ordering Codes:

Order number	MSR.	10.	2
MSR Multifunctional Relay			
Type /			
10 = monostable contact protective relay for single contacts			
11 = bistable interval relay with locking feature			
20 = monostable contact protective relay for double contacts			
Supply voltage /			
1 = 230 VAC standard			
2 = 115 VAC			
3 = 24 VAC			
4 = 24 VDC			





KE-01

Cooling Line for Pressure Metering Points up to 200°C



Features

- / Available in brass, steel or stainless steel
- / Pressure up to 600 bar
- / Temperature up to 200°C
- / Female thread for instrument
- / Gauge connection to measuring point

Description:

The full stainless steel cooling tower KE-01 connects a pressure measuring point, which is due to high media temperatures too hot for a direct connection, to a pressure instrument like a pressure gauge, a pressure switch or a pressure sensor. The cooling tower reduces the temperature of the pressure medium significantly by air circulation and thermal radiation, in order to avoid wrong measuring values or damages of the pressure instrument. It is recommended to use the cooling tower KE-01 at process temperatures in excess of 100°C.

Application:

Too high media temperatures at pressure metering points are frequently restricting the facility to display, measure and evaluate the process pressure accurately, thus pressure instruments are usually calibrated to a specified temperature range or the inaccuracy caused by higher or lower temperatures is compensated. Temperatures out of this range lead to disproportionate imprecision or damage of the internal electronic components. In this case the cooling tower KE-01 offers a priceworthy and practical solution, which increases the measuring accuracy and the lifespan of such instruments.



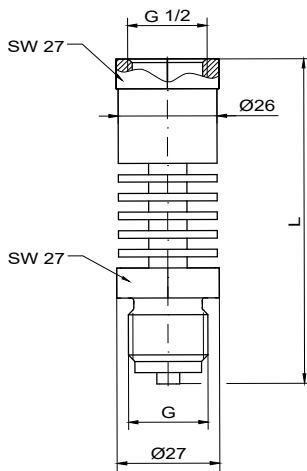
Technical Specifications:

Materials /	brass, steel or stainless steel 316Ti
max. Pressure /	brass: 250 bar steel: 400 bar st. steel: 600 bar
Temperature /	brass: 100°C steel: 155°C st. steel: 200°C
Connecting thread /	
Instrument:	G 1/2"-female
Process:	G 1/2"B-male or G 1/4"B-male
Weight /	
	G1/4"B: 100g G1/2"B: 120g

Ordering Codes:

Order number	KE-01.	1.	2.
KE-01 Cooling Line			
Material /			
1 = brass			
2 = steel			
3 = stainless steel 316Ti			
Process connection /			
1 = G 1/2"B-male			
2 = G 1/4"B-male			

Dimensions in mm:



Version	Thread	mm
KE-01	G	L
KE-01.x.1	G 1/2B	87
KE-01.x.2	G 1/4B	79