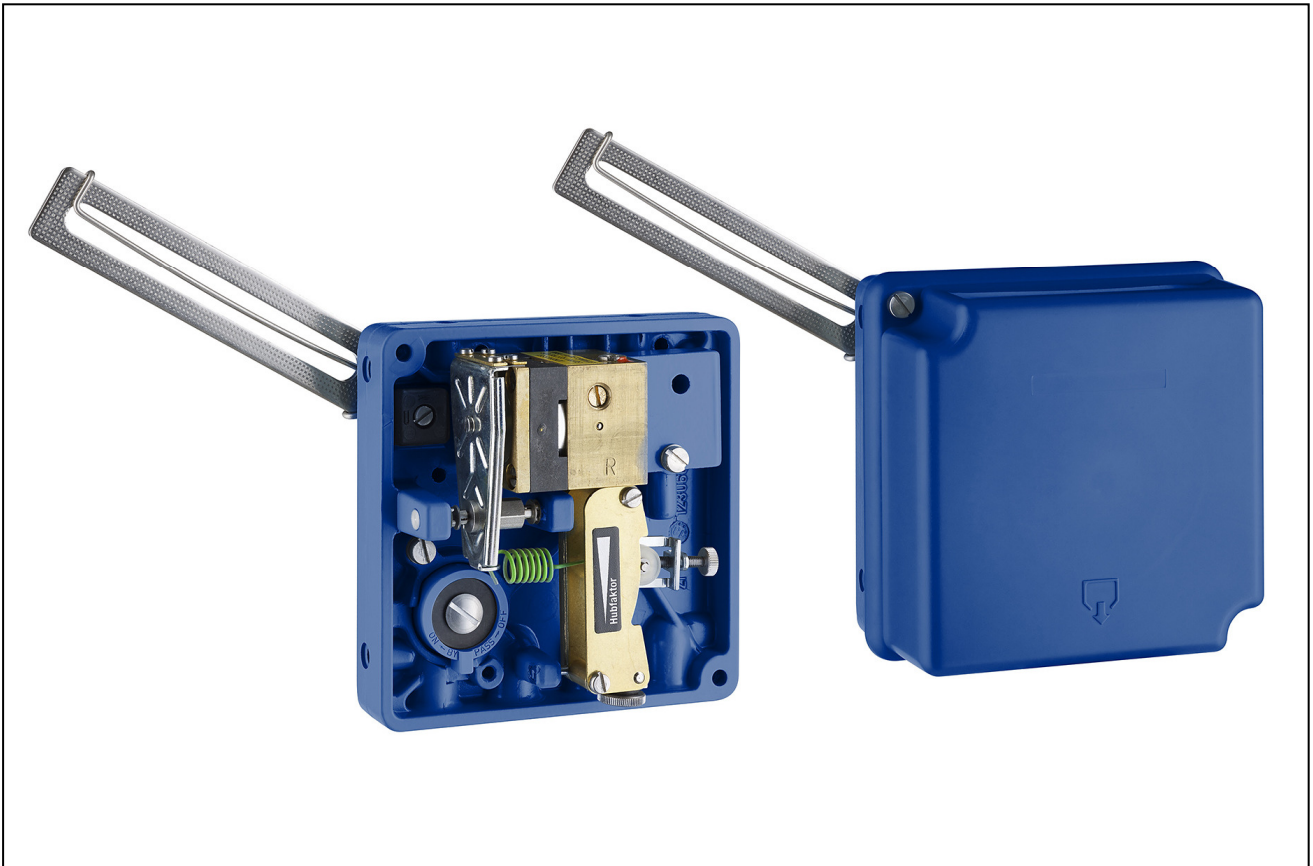


SMP981 Pneumatic Position Transmitter



The SMP981 converts the linear or rotary movement of valve actuators into a 0.2 to 1 bar pneumatic signal.

FEATURES

- Non-reactive conversion of stroke position into a 0.2 to 1 bar pneumatic standard signal
- Simple installation and adjustment
- Zero and range settings non-interactive
- Attachment acc. to DIN IEC 534 part 6 (NAMUR)
- Robust, corrosion-protected design
- Simple matching to strokes of 8 to 115 mm and, by means of rotary adaptor, to angular displacements of 30° to 120°
- Protection class IP 54
- Explosion protection "constructive safety" according to ATEX and CU TR

*Equipment should be installed, operated, serviced, and maintained only by qualified personnel.
No responsibility is assumed by Schneider Electric for any consequences arising from the use of this material.*

TECHNICAL DATA

Input

Stroke range ¹⁾	8 to 115 mm with attachment kit for diaphragm actuators ²⁾
Rotation angle range	30° to 120° with attachment kit for rotary actuators

Output

Signal range	0.2 to 1 bar (3 to 15 psi) ³⁾ or split range
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Note: For stability reasons, the output should be connected to a signal line of at least 8 m (24 ft) length.

Auxiliary energy

Supply air pressure	1.4 bar ± 0.1 bar
Inherent air consumption . . .	approx. 70 l/h
Air supply ¹⁾	according to ISO 8573-1
Solid particle size and density class	class 2
Oil rate	class 3
For air supply, we recommend the FRS923 filter regulator.	

Performance characteristics ³⁾

Non-linearity (terminal based adjustment)	< 1% of final value
Hysteresis	< 1%
Supply pressure dependency	< 0.2 % / 0.1 bar
Sensitivity	< 0.03 %
Temperature effect	< 0.3% / 10 K
Air capacity	2200 l/h

Ambient conditions

Ambient temperature	-40 to 80 °C (-40 to 176 °F)
Relative humidity	≤ 100 %
Operating conditions as per IEC 654-1	The device can be operated at a class D2 location
Transport and storage Temperature	-50 to 80 °C (-58 to 176 °F)
Protection class	IP 54 (IP 65 on request)

Mounting

Mounting to diaphragm actuators	acc. to DIN IEC 534-6 (NAMUR)
Mounting to rotary actuators	acc. to VDI/VDE 3845
Mounting orientation	any ⁴⁾

Pneumatic connections

Female thread	R 1/8 ports
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Materials

Base plate	Aluminum (alloy No. 230) finish with DD enamel
Cover	impact-resistant polyester
All moving parts of feedback system	1.4305 / 1.4571
Mounting bracket	1.4301

Weight

SMP981	approx. 1.4 kg (3.1 lbs)
Attachment kit for diaphragm actuators	approx. 0.3 kg (0.6 lbs)
for rotary actuators	approx. 0.5 kg (1.1 lbs)

Accessories

Additional limit signaling by means of inductive alarm units and el. Position Transmitter on request.

1) Standard; other stroke ranges as auxiliary

2) Feedback lever effective length 117.5 mm

3) Based on 30 mm stroke, spring 420 494 019 and feedback lever effective length 117.5 mm

4) In suspended mounting position protect vent hole against water ingress

RANGE SPRINGS

To permit matching to the stroke and output signal range, 5 differently rated springs are available. The particular spring required can be determined from the stroke factor U.

For actuators 1500 cm²
 Right-hand mounting: 122.5 / 146.5 mm
 Left-hand mounting: 98.5 / 122.5 / 152.5 mm
 By varying the effective length of the feedback lever supplied with the instrument, the following actuator strokes can be accommodated:

FOR LINEAR MOVEMENTS

Diaphragm actuators 250 to 1000 cm²:

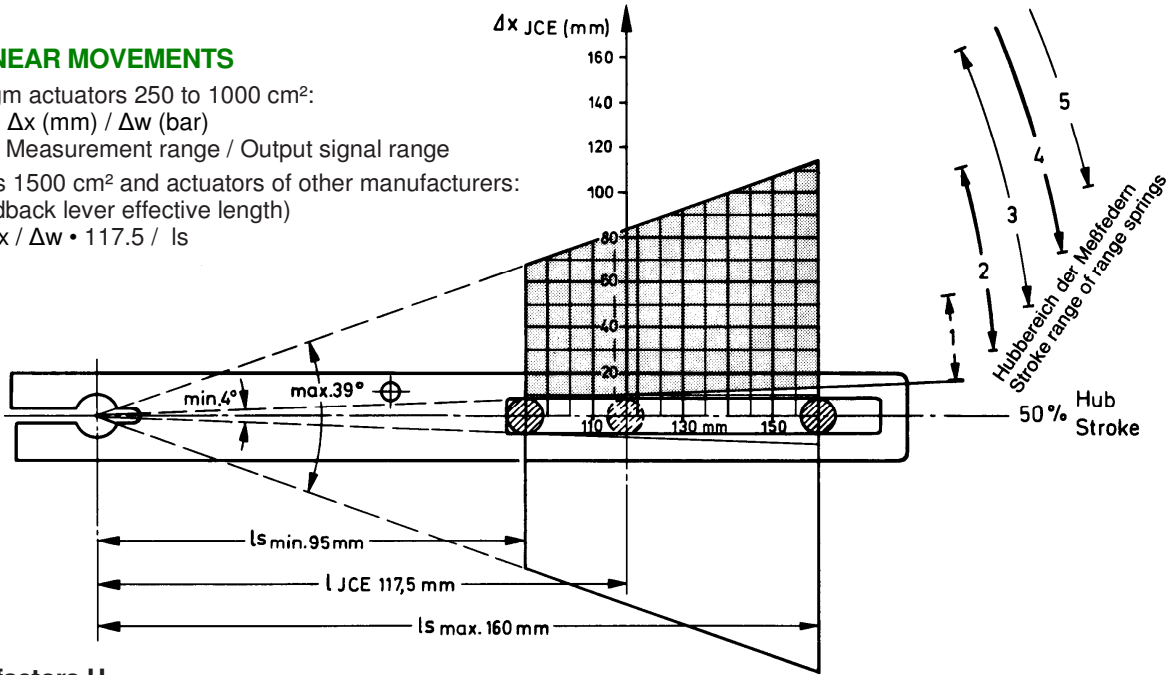
$$U_{xJCE} = \Delta x \text{ (mm)} / \Delta w \text{ (bar)}$$

= Measurement range / Output signal range

Actuators 1500 cm² and actuators of other manufacturers:

(ls = Feedback lever effective length)

$$U_x = \Delta x / \Delta w \cdot 117.5 / ls$$



Stroke factors U_x

Spring Ident No.	old ID.	Color	Stroke factor	Stroke ranges for ls = 117.5 mm / Δ w = 0.8	Comment	
1	420 493 013	FES 627/1	yellow	10 – 30 (max. 42)	8 – 34 mm	2)
2	420 494 019	FES 628/1	green	22 – 60 (max. 84)	17 – 68 mm	built-in
3	502 558 017	FES 612/1	w/o	35 – 90 (max. 130)	28 – 105 mm	2)
4	420 496 011	FES 715/1	gray	50 – 140 (max. 190)	40 – 115 mm	2)
5	420 495 014	FES 629/1	blue	70 – 180 (max. 250)	55 – 115 mm	2)

FOR ROTARY MOVEMENTS

In conjunction with attachment kit for rotary actuators, the rotation angle factor U_φ can be determined as follows:

$$U_{\phi} = \Delta \phi / \Delta w = \text{Rotation angle range} / \text{Output signal range}$$

Stroke factors U

Spring	Cam				Comment	
	linear	equal percentage ¹⁾				
	max. 120 °	70 °	60 °	50 °		
1	420 493 013	42 – 120 (max. 170)	51 – 110 (max. 145)	45 – 105 (max. 130)	40 – 90 (max. 112)	2)
2	420 494 019	90 – 230 (max. 350)	91 – 170 (max. 205)	81 – 150 (max. 180)	70 – 130 (max. 153)	built-in
3	502 558 017	150 – 360 (max. 540)	130 – 210 (max. 241)	115 – 180 (max. 206)	100 – 155 (max. 178)	2)
4	420 496 011	210 – 540 (max. 810)	160 – 240 (max. 269)	140 – 210 (max. 235)	120 – 180 (max. 200)	2)
5	420 495 014	290 – 690 (max. 1030)	190 – 250 (max. 280)	165 – 220 (max. 244)	140 – 190 (max. 205)	2)

1) Using the equal percentage cam, the rotation angle factors are depending on the corresponding rotation angle
 2) Included in spring set FESG-FN

MODEL CODES SMP981

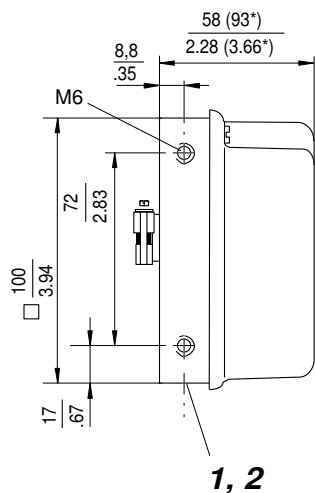
Pneumatic Position Transmitter	SMP981	060715
Output		
Signal range 0.2 - 1 bar / 3 -15 PSI / 20 - 100 kPa	-I	
Attachment kit		
Order as auxiliary	N	
Options		
Certificate EN 10204-2.1 - Certificate of compliance with the order	-1	
Tag No. Labeling Stamped with weather resistant color	-G	
Tag No. Labeling Stainless steel label fixed with wire	-L	
EAC Approved	-R	

MODEL CODES ACCESSORIES

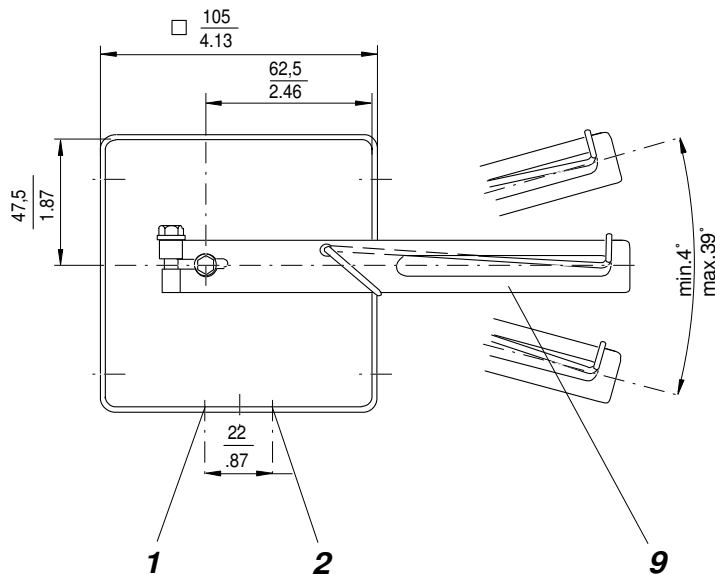
Attachment kit	EBZG
For diaphragm actuators with casting yoke acc. NAMUR (incl. standard Couple Lever) (for SRP981, SRI983, SMP981, SMI983, SGE985)	-GN
For diaphragm actuators with pillar yoke acc. NAMUR (incl. standard Couple lever) (for SRP981, SRI983, SMP981, SMI983, SGE985)	-FN
For rotary actuators, without flange, 3 drill holes 6.5 mm (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-PN
For rotary actuators, without flange, 4 threads M6 (e.g. for Petras actuators) (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-NN
For rotary actuators, with flange (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-JN
For rotary actuators acc. to VDI/VDE 3845, with shaft (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-ZN
For Masoneilan type Camflex II (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-RN
For Masoneilan type 37/38, Fisher Elliott type 656, 667 (for SRP981, SRI983, SGE985, SMI983, SMP981) ...	-TN
For Masoneilan type 87/88 (for SRP981, SRI983, SMP981, SMI983, SGE985)	-EN
For Masoneilan VariPak (for SRP981, SRI983, SGE985, SMI983, SMP981)	-MN
For IAL actuators (for SRP981, SRI983, SGE985, SMI983, SMP981)	-VN
Brackets VDI/VDE 3845 (A = 130 mm/5.12 in; B = 50 mm/1.97 in) (for SRP981, SRI983, SRI986, SGE985, SMI983, SMP981)	-C3
Brackets VDI/VDE 3845 (A = 80 mm/3.15 in; B = 30 mm/1.18 in) (for SRP981, SRI983, SRI986, SGE985, SMI983, SMP981)	-C2
Brackets VDI/VDE 3845 (A = 80 mm/3.15 in; B = 20 mm/0.79 in) (for SRP981, SRI983, SRI986, SGE985, SMI983, SMP981)	-C1
Couple Lever / Cam	
Standard (a = 72 mm) (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-AN
Extended (a = 91 mm) (for SRP981, SRI983, SRI986, SMP981, SMI983, SGE985)	-BN
Inverse equal percentage cam for rotary actuators (for SRP981, SRI983, SRI986)	-CN

DIMENSIONS

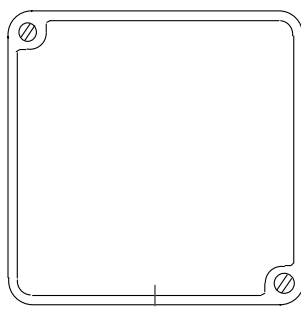
Pneumatic position transmitter



mm
in



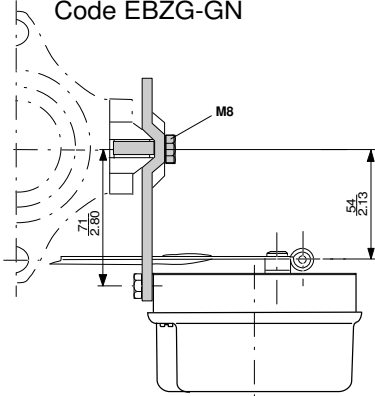
Pneumatic position transmitter, front view



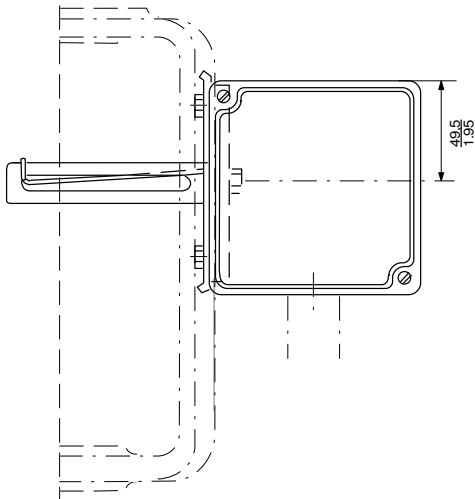
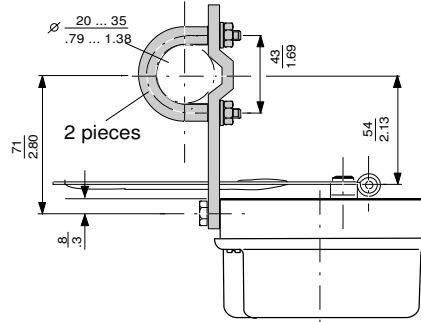
- 1** Output 0.2 to 1 bar
- 2** Supply air 1.4 bar
- 9** Feedback lever

ATTACHMENT KIT FOR DIAPHRAGM ACTUATORS

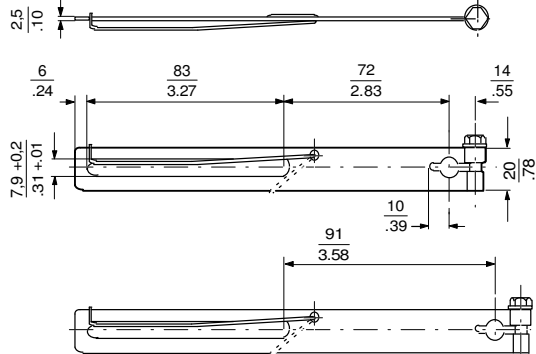
Attachment to casting yoke
according to IEC 534-6 (NAMUR)
Code EBZG-GN



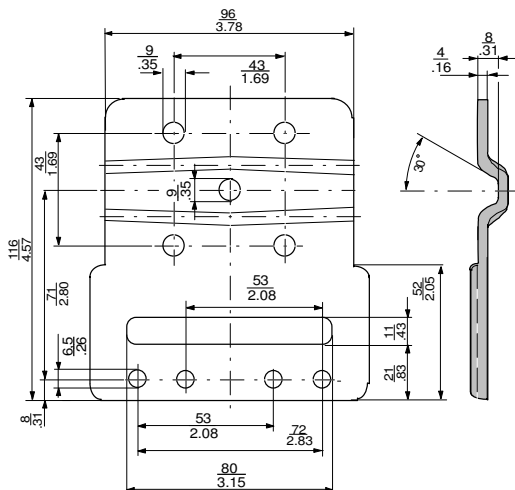
Attachment to pillar yoke
according to IEC 534-6 (NAMUR)
Code EBZG-FN



Feedback lever
Code EBZG-AN, -FN, -GN
Code EBZG-BN (extended version)

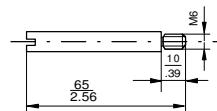


Mounting bracket
according to IEC 534-6 (NAMUR)
for Code EBZG-GN, FN



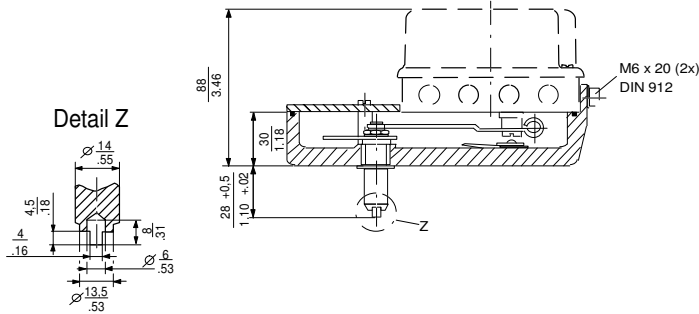
mm
in

Carrier bolt
for attachment to valve stem

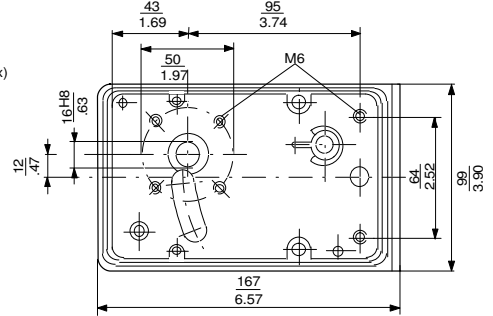


ATTACHMENT KIT FOR ROTARY ACTUATORS

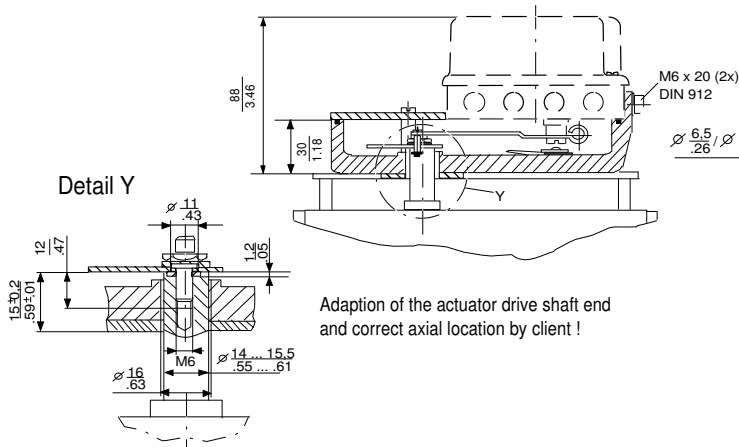
With shaft
(according to VDI/VDE 3845)
Code EBZG-ZN



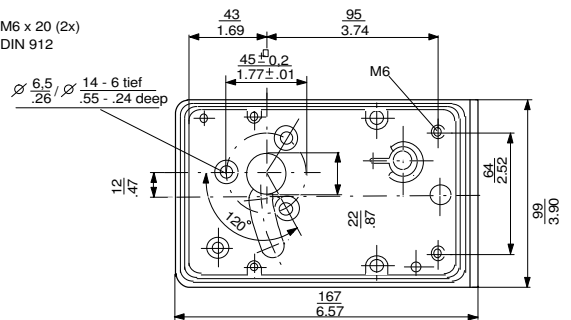
Housing dimensions
Attachment kit with shaft
resp. without flange
Code EBZG-NN



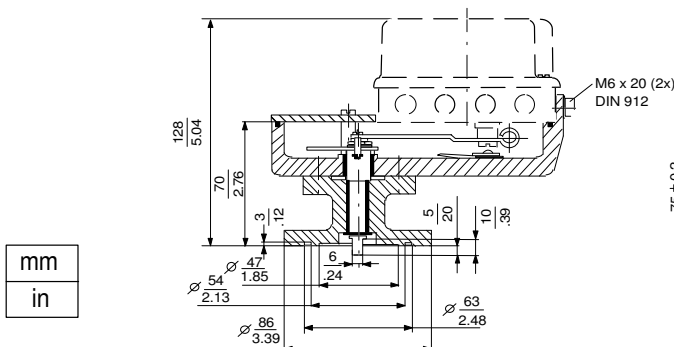
Without flange
Code EBZG-NN, -PN



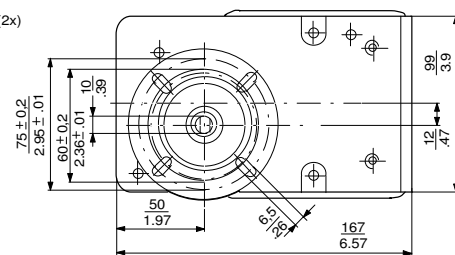
Housing dimensions
Attachment kit without flange
Code EBZG-PN



With flange
Code EBZG-JN



mm
in



Rotation angle max 120°; torque requirement 14 Nm

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