

## SRI983 Electro-Pneumatic Positioner - explosion proof or EEx d version



The SRI983 Positioner is for operation of pneumatic valve actuators from control systems and electrical controllers with electric control signals. It is used to reduce the adverse effects of valve friction, for higher thrust and shorter positioning time.

### FEATURES

- Independent adjustment of stroke range and zero
- Adjustable amplification and damping
- Split range up to 3-fold possible
- One version for 4 ... 20 mA input
- Supply pressure up to 6 bar (90 psig)
- Low vibration effect in all directions
- Mounting according to IEC 534, part 6 (NAMUR)
- Rotation adapter for angles up to 120°
- Explosion protection:  
II 2 G EEx D IIC T4...T6 according to ATEX or explosion proof, intrinsic safety acc. to FM / CSA
- EMC in accordance with the international standards and laws (CE)

## TECHNICAL DATA

### Input

Signal range	4 ... 20 mA
Input resistance	< 260 Ω
Stroke range	8 ... 100 mm (0.3 ... 4 in)
Angular range	
linear	30 ° ... 120 °
equal percentage	90 °; from 70 ° linear

### Output

Output to actuator	0 ... 100 %
	supply air pressure

### Supply

Supply air pressure	1.4 ... 6 bar (20 ... 90 psig)
Supply air	free of oil, dust, water according to IEC 654-2

### Ambient conditions

Ambient temperature	-40 °C (-40 °F) to ... (see page 3)
Relative humidity	up to 100 %
Operating conditions	
as per IEC 654-1	The device can be operated at a class Dx location

Transport and storage	
temperature	-40 ... 80 °C (-40 ... 176 °F)
Protection class	
pneumatic part	IP 54
electrical part	
ATEX	IP 65
FM + CSA	NEMA 4

### Electromagnetic compatibility EMC

Operating conditions	industrial environment
Immunity according to	
- NAMUR recommendation NE21	fulfilled
- EN 61 326	fulfilled
- EN 61 000-6-2	fulfilled
Emission according to	
- EN 55 011,	
Group 1, Class A	fulfilled
- EN 61 000-6-2	fulfilled

### CE marking

Electromagnetic compatibility	89/336/EWG
Low voltage regulations	w/o Ex: 73/23/EWG fulfilled (with Ex: not applicable)

### Response characteristic<sup>1)</sup>

Amplification	adjustable
Sensitivity	< 0.1 % F.S.
Non-linearity (terminal based adjustment)	< 1.0 % F.S.
Hysteresis	< 0.5 % F.S.
Supply air dependency	< 0.3 % / 0.1 bar (1.5 psi)
Temperature effect	< 0.5 % / 10 K

### Air consumption

supply air pressure	air consumption
single acting	
1.4 bar (20 psig)	200 l <sub>n</sub> /h ( 7.1 scfh)
3.0 bar (45 psig)	350 l <sub>n</sub> /h (12.4 scfh)
6.0 bar (90 psig)	600 l <sub>n</sub> /h (21.2 scfh)
double acting	
1.4 bar (20 psig)	300 l <sub>n</sub> /h (10.6 scfh)
3.0 bar (45 psig)	500 l <sub>n</sub> /h (17.7 scfh)
6.0 bar (90 psig)	950 l <sub>n</sub> /h (33.5 scfh)

### Air output

Load effect <sup>2)</sup>	-3 % for delivery flow 2 350 l <sub>n</sub> /h (83 scfh)
	+3 % for exhausted flow 1 900 l <sub>n</sub> /h (67 scfh)

Capacity at max. deviation	
supply air pressure	air output capacity
1.4 bar (20 psig)	2 700 l <sub>n</sub> /h ( 95 scfh)
2.0 bar (30 psig)	3 500 l <sub>n</sub> /h (124 scfh)
4.0 bar (60 psig)	5 500 l <sub>n</sub> /h (194 scfh)
6.0 bar (90 psig)	7 500 l <sub>n</sub> /h (265 scfh)

### Materials

Base plate, manifold, I/P-housing,	
rotation adapter	Aluminum (Alloy No. 230) finished with DD-varnish gray blue
Cover	impact resistant polyester gray blue

All moving parts of	
feedback system	1.4305 / 1.4571
Mounting bracket	1.4301

### Weight

single acting	
without gauges	approx. 1.5 kg (3.3 lbs)
with gauges	approx. 1.7 kg (3.7 lbs)
double acting	approx. 1.7 kg (3.7 lbs)
attachment kit	
for diaphragm actuators	approx. 0.3 kg (0.6 lbs)
for rotary actuators	approx. 0.5 kg (1.1 lbs)

Data measured according to VDI/VDE 2177

- 1) Data based on following parameters:  
stroke 30 mm (1.28 in), range spring FES 628/1, feedback lever  
effective length 117.5 mm (4.63 in), max. amplification,  
supply air pressure 3 bar (45 psig)
- 2) measured at air supply 1.4 bar (20 psig) and 50 % of signal range



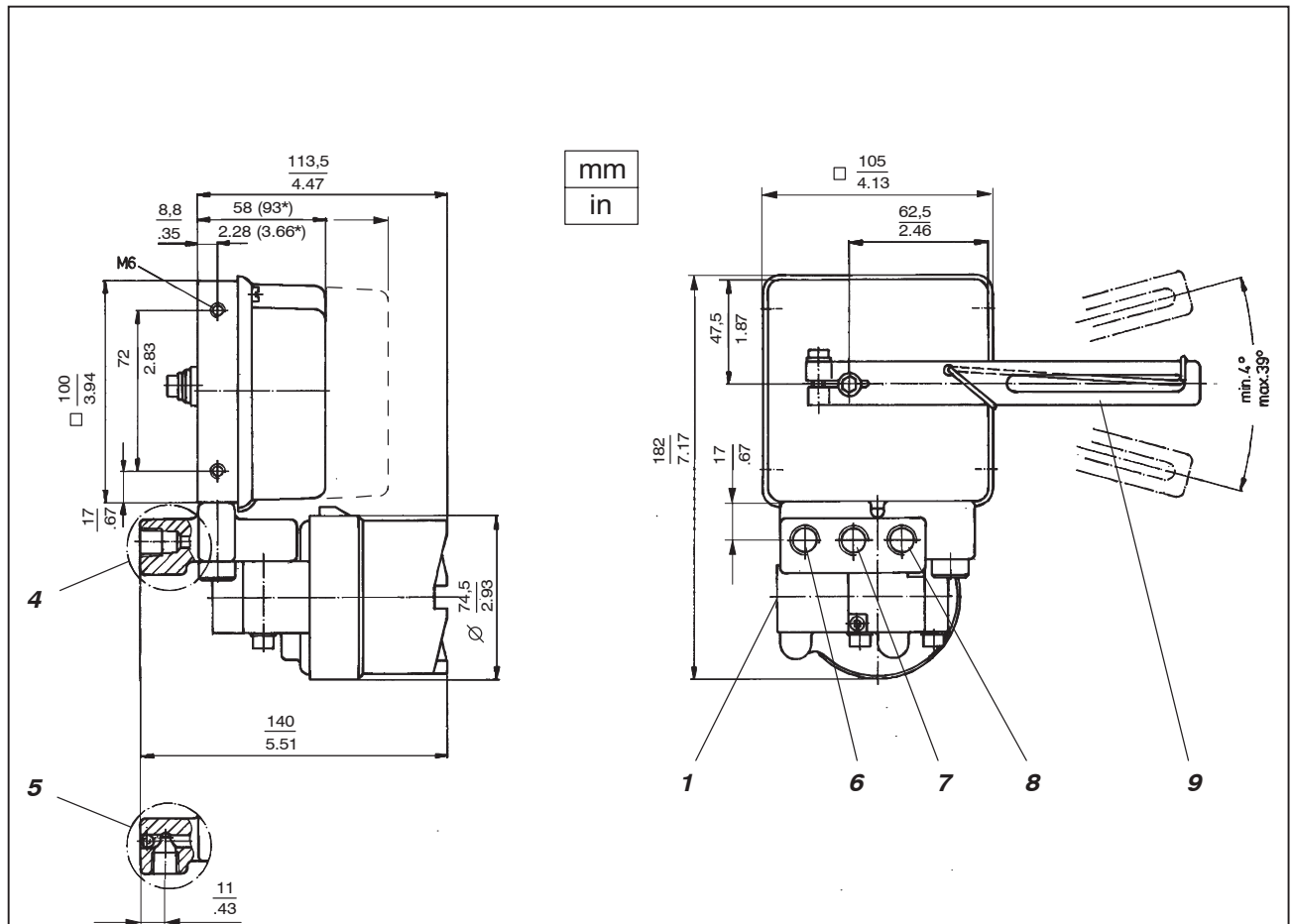
**MODEL CODES SRI983**

<b>Electro-pneumatic Positioner</b>	<b>SRI983</b>							01406		
<b>Version</b>										
Single Acting . . . . .	-B									
Double Acting . . . . .	-C									
<b>Input</b>										
Signal Range 4 - 20 mA. . . . .		-I								
<b>Mode of Action</b>										
Increasing Input Increases Output . . . . .				D						
Increasing Input Decreases Output. . . . .				R						
<b>Gauges</b>										
Without Gauges . . . . .						L				
Two Built-In Gauges (bar/psi) . . . . . (a)						M				
<b>Electrical Certification</b>										
II 2 G EEx d IIC T6 . . . . .							EDZ			
FM Approved For Explosionproof Class I, Division 1, Groups B,C,D, Dust-Ignitionproof, Class II, Division 1, Groups E, F,G Hazardous Locations . . . . .							FDZ			
CSA Approved For Explosionproof Class I, Division 1, Groups B,C,D, Dust-Ignitionproof, Class II, Division 1, Groups E, F,G Hazardous Locations . . . . .							CDZ			
<b>Pneumatic Connection</b>										
Rear Facing NPT 1/4, Prepared For Linear Actuators . . . . .								N		
Down Facing NPT 1/4, Prepared For Rotary Actuators. . . . .								Q		
<b>Options</b>										
<b>Tag No. Labeling</b>										
Stamped With Weather Resistant Color . . . . .								-G		
Stainless Steel Label Fixed With Wire . . . . .								-L		
Example Model Code:	SRI983	-B	I	D	L	EDZ	Q	-L		
(a) Only available with Version -B										
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Auxiliary Fittings</td> <td>see EVE9902 see EOO9001</td> </tr> </table>									Auxiliary Fittings	see EVE9902 see EOO9001
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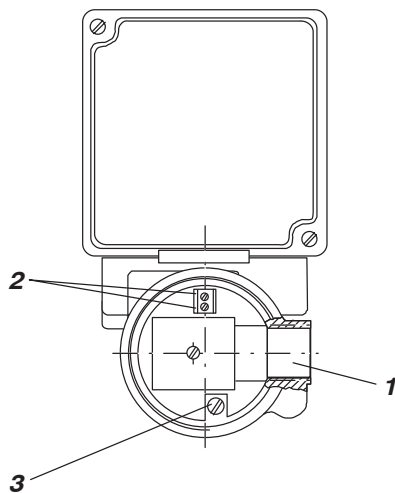
**MODEL CODES Accessories**

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

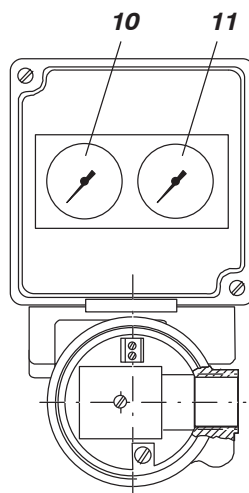
**DIMENSIONS, CONNECTIONS**



**Front view \***  
Code L



Code M, N

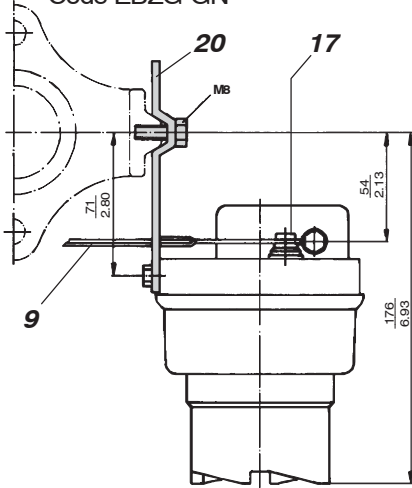


- 1 Electrical connection, line entry
- 2 Screw terminals (+/-) for signal input
- 3 Earth connection
- 4 Rear facing pneumatic connections (when using linear actuators)
- 5 Angled pneumatic connections (when using rotary actuators)
- 6 Output II (only on double-acting valve positioners)
- 7 Supply air
- 8 Output I
- 9 Feedback lever
- 10 Gauge for internal I/P-output (w)
- 11 Gauge for output (y)

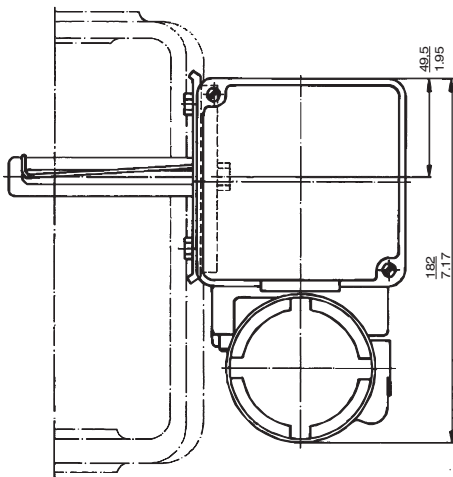
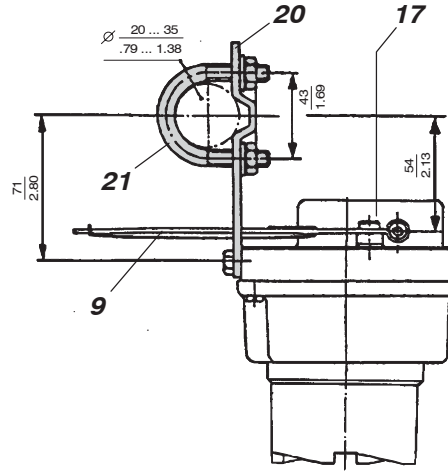
\* I/P converter cover removed

**ATTACHMENT KIT FOR DIAPHRAGM ACTUATORS**

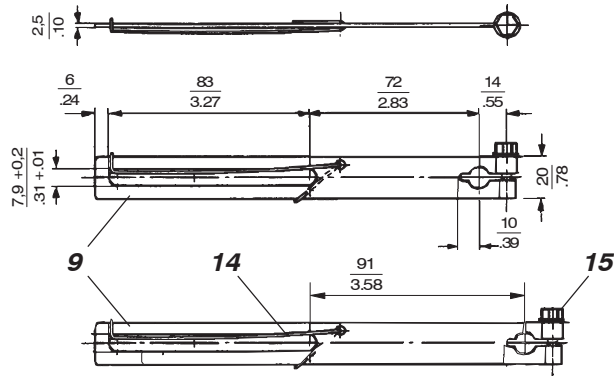
**Attachment to casting yoke**  
according to IEC 534-6 (NAMUR)  
Code EBZG-GN



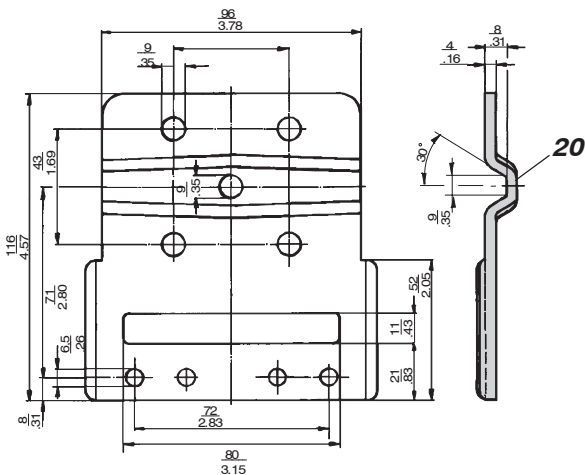
**Attachment to pillar yoke**  
according to IEC 534-6 (NAMUR)  
Code EBZG-FN



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

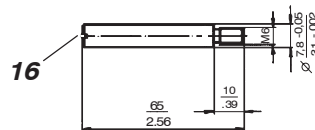


**Mounting bracket**  
according to IEC 534-6 (NAMUR)  
for Code EBZG-GN, FN



mm
in

**Carrier bolt**  
for attachment to valve stem



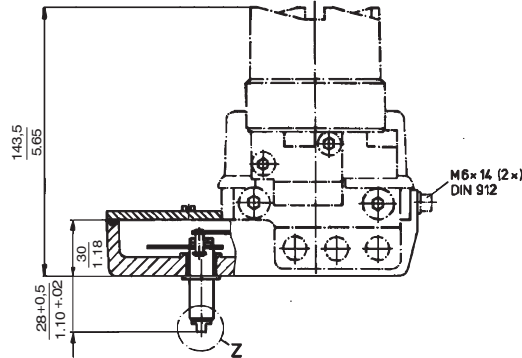
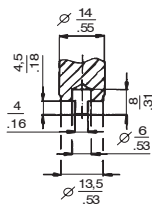
**ATTACHMENT KIT FOR ROTARY ACTUATORS**

**With shaft**

(according to VDI/VDE 3845)

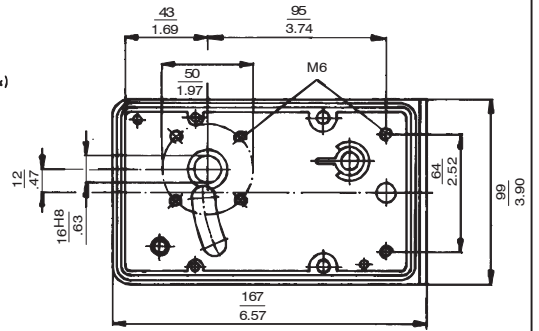
Code EBZG-ZN

**Detail Z**



**Housing dimensions**

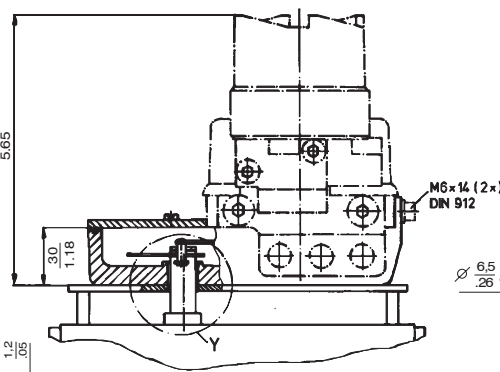
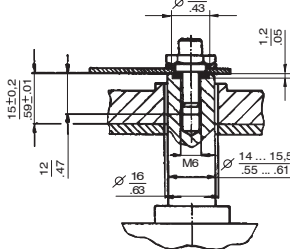
Attachment kit with shaft Code EBZG-ZN  
resp. without flange Code EBZG-NN



**Without flange**

Code EBZG-NN, -PN

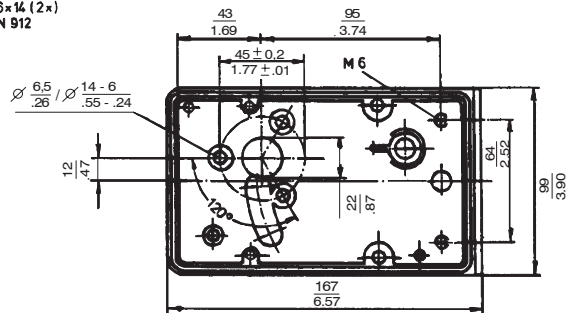
**Detail Y**



Adaption of the actuator drive shaft end  
and correct axial location by client !

**Housing dimensions**

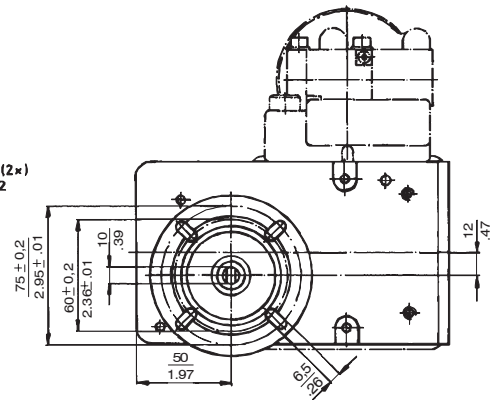
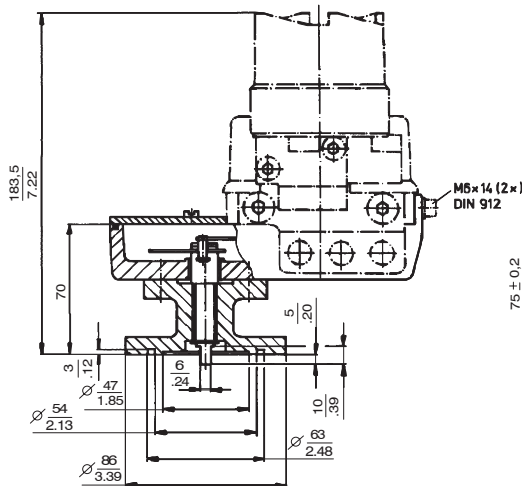
Attachment kit without flange  
Code EBZG-PN



**With flange**

Code EBZG-JN

mm  
in



Rotation angle max 120°; torque requirement 14 Nm

**Further Product Specification Sheets:**

PSS EVE0101A-(de)	SRP981	Pneumatic Positioner
PSS EVE0102A-(de)	SRI986	Electro-Pneumatic Positioner
PSS EVE0103A-(de)	SRI983	Electro-Pneumatic Positioner - explosion proof or EEx d version
PSS EVE0105A-(de)	SRD991	Intelligent Positioner
PSS EVE0107A-(de)	SRI990	Analog Positioner
PSS EVE0109A-(de)	SRD960	Universal Positioner

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