The following chapter contains reduced Product Specifications of the instruments:

SRD960	Intelligent Positioner with HART, PROFIBUS or FOUNDATION Fieldbus – EEx d Explosion Proof
SRD991	Intelligent Positioner with HART, PROFIBUS or FOUNDATION Fieldbus – EEx ia Intrinsically Safe
DTM	SRD991 and SRD960 DTM (Valve Monitor) for configuration and diagnostics. Valve Health Report generator
PST	Partial Stroke Testing for SRD991 and SRD960 LCP960 Local Control Panel for PST monitoring
SRI990	Analog Positioner
SRI986	Electro-Pneumatic Positioner
SRI983	Electro-Pneumatic Positioner – Explosion Proof or EEx d version
SRP981	Pneumatic Positioner
SMI983	Electrical Position Transmitter
SMP981	Pneumatic Position Transmitter
SGE985	Inductive Limit Switch
FRS	Filters regulators
IP24	IP Transducer for field service
	Accessories for Positioners

For detailed technical specifications, visit our homepage www.foxboro-eckardt.com or ask your local distributor for the requested Product Specifications PSS.

SRD960 Intelligent Positioner with HART, PROFIBUS PA or FOUNDATION Fieldbus H1 for EEx d Explosion-proof Application

The intelligent positioner SRD960 is designed to control pneumatic valve actuators and is available in the version EEx d (flame-proof)/explosion-proof. It can be operated from any control systems (e.g. the Foxboro I/A Series System).

All the diagnostics features can be easily configured and displayed by the Positioner DTM (Valve Monitor). Moreover, the Positioner DTM enables to editing of a complete "health" report of the valve with all configuration data and diagnostics.

The positioner is available with HART, Profibus PA or Foundation Fieldbus H1 communication protocols.

The SRD960 also has the capability to control a Partial Stroke Test (PST) that offers operators a tool to identify the trouble-proof function of ESD (Emergency Shut Down) valves.

For complete specifications, refer to Product Specification Sheet PSS EVE0109 A-(en).

- Display and Local User Interface:
  - Friendly and easy configuration by means of 4 external pushbuttons
  - Multilingual Full-Text Graphic-backlit-LCD
  - Status- and Diagnostic-Messages displayed on LCD
- Accessories
  - Booster
  - Gauges
- Suitable for safety applications up to SIL 3
- Partial Stroke Test (PST) for Emergency Shutdown applications
- Additional Inputs/Outputs (optional):
  - 2 binary outputs (limits)
  - Position feedback 4 to 20 mA, 1 alarm output
  - 2 binary inputs
  - Binary Inputs/Outputs dedicated to SIS logic solvers
  - Built-in independent inductive limit switches or micro switches (optional)
- Autostart with self calibration
- Communication HART, FOUNDATION Fieldbus H1, PROFIBUS-PA
- Diagnostics capabilities
  - Self-diagnostic, status and diagnostic messages
  - Advanced diagnostics for valve predictive maintenance
  - Premium diagnostics for valve footprints, on-line friction, ...
- Configuration by means of local keys, handheld terminal, PC or I/A Series system
- DTM (Valve Monitor) (see page 7-10)
  - DTM for configuration and display of diagnostics capabilities
  - DTM in HART, Profibus PA and FF H1 certified by FDT Group
  - User friendly DTM with "all in one glance" screenshot
  - DTM compliant with FDT Style Guide and NAMUR NE107 recommendation
  - "Valve Health Report" generator included in the DTM
- For all Versions:
  - Stroke range 8 to 260 mm (0.3 to 10.2 in)
  - Angle range up to 95°
  - Supply air pressure up to 6 bar (90 psig), with "Spool Valve" up to 7 bar (105 psig)
  - Single or double acting
  - Mounting on linear actuators according to NAMUR:
    – IEC 534 Part 6
    – VDI/VDE 3847
  - Direct mounting on actuators FlowPak and FlowTop
  - Mounting on rotary actuators acc. to VDI/VDE 3845
  - Protection class IP 66, NEMA 4X
  - Explosion protection:
    – II 2 G EEx d (Flame-proof) according to ATEX
    – Explosion-proof according to FM

Input

With HART communication

Two-wire system

Reverse polarity protection	built-in standard feature
Signal range	4 to 20mA
Operating range	3.6 to 21mA
Voltage	DC 12 to 36 V (unloaded circuit)
Max. load	360 Ohms (7.8 V at 20 mA)
Communication signal	HART, 1200 Baud, FSK modulated on 4 to 20 mA

With Fieldbus communication (acc. to FISCO)

Input signal	digital fieldbus
Supply voltage	DC 9 to 32 V
Operating current (base current)	10.5 mA ±0.5 mA
Current amplitude	±8 mA
Fault current	base current +0 mA (+4 mA by means of independent FDE-safety circuit)

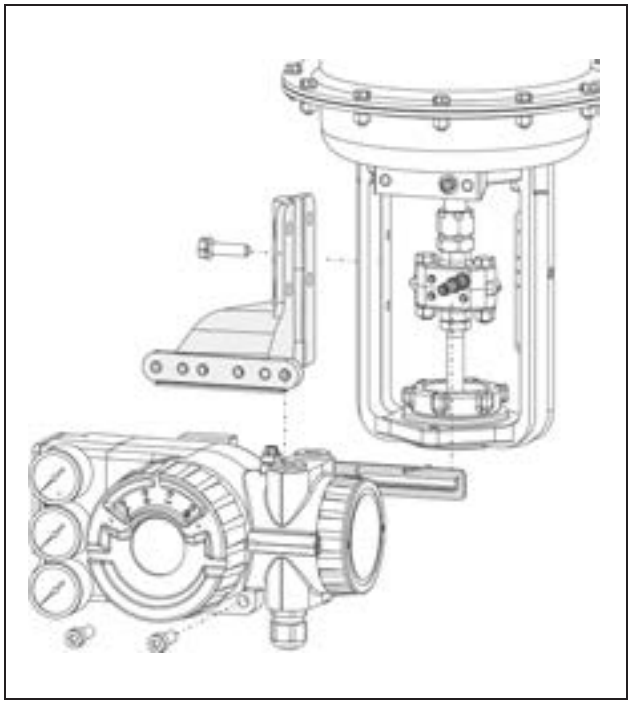
PROFIBUS-PA

Data transfer	acc. to PROFIBUS- PA profile class B based on EN 50170 and DIN 19245 part 4

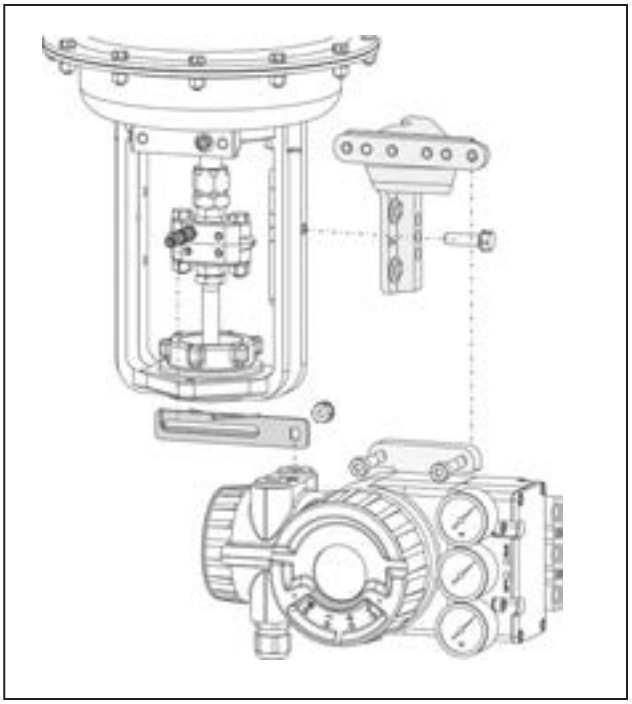
7

Mounting types

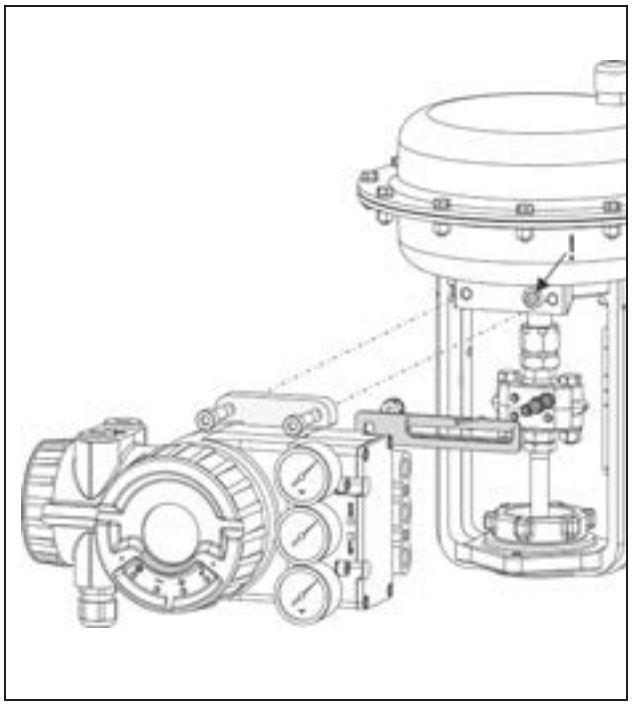
NAMUR mounting – left hand



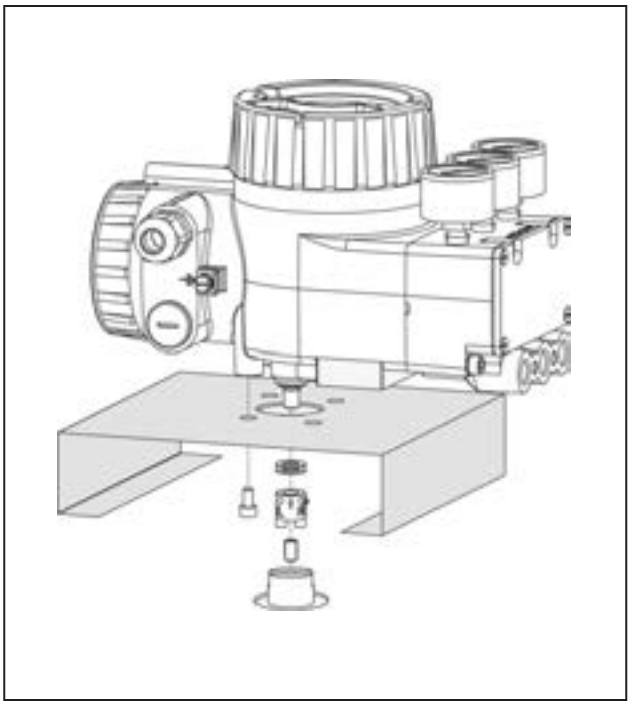
NAMUR mounting – right hand



Direct mounting



Mounting to rotary actuators



FOUNDATION Fieldbus H1

Data transfer	FF Specification Rev. 1.4, Link-Master (LAS)
Function blocks	PID, AO, 2xDI, DO, IS, OS, AI, MAI

Response characteristic

Sensitivity	<0.1% of travel span
Non-linearity (terminal based adjustment)	<0.4% of travel span
Hysteresis	<0.3% of travel span
Supply air dependence	<0.1%/1 bar (15 psi)
Temperature effect	<0.3%/10 K
Mechanical vibration 10 to 60 Hz up to 0.14 mm, 60 to 500 Hz up to 2 g	<0.25% of travel span

Pneumatic connection

NAMUR mounting	3x female threads ¼-18 NPT or G¼ for pipe diameter 6 to 12 mm (0.24 to 0.47 in)
Direct mounting	Instead of the output y1 an air connection on the backside with O-ring is used (closed at NAMUR mounting).

Electrical connection

Line entry	1or 2cable glands M20 x1.5 or ½-14 NPT (others with Adapter AD-...)
Cable diameter	6 to 12 mm (0.24 to 0.47 in)
Screw terminals	2 terminals for input, 4 terminals for additional inputs/outputs Wire cross section 0.3 to 2.5 mm2 (AWG 22-14)
Test Sockets	for connection of communicator

Supply

Supply air pressure	1.4 to 6 bar (29 to 90 psig)
with spool valve	1.4 to 7 bar (20 to 105 psig)
Supply Air quality	according to ISO 8573-1
Max. particle size and -density	Class 2
Max. oil contents	Class 3

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How to Order – Specify model number SRD960

Version				
Single Acting	-B			
Double Acting	-C			
Position Transmitter (w/o pneumatic components)	-T			
Local Control Panel b(LCP960) for PST monitoring	-L			
Input/Communication				
HART (4-20 mA)(g)(p)		H		
Profibus PA based on IEC 1158-2 (MBP) according to FISCO (Fieldbus)(g)(p)		P		
FOUNDATION Fieldbus H1 based on IEC 1158-2 (MBP) according to FISCO (Fieldbus)(g)(p)		Q		
(not applicable)(f)		X		
Additional Inputs/Outputs				
Without Additional Inputs/Outputs(n)(p)			N	
Binary Input – integrated(g)(p)			B	
Binary Output – integrated(g)(p)			P	
Binary Inputs/Outputs (mandatory for ESD application)			E	
Analog Position Feedback (4-20 mA)			Q	
– integrated and connected as Option Board(g)(p)				
– stand alone feedback unit(f)(p)				
Potentiometer Input (for remote mounting – main unit)(g)(p)			D	
Limit Switches (standard version SJ2-N)(g)(p)			T	
Limit Switches (security version SJ2-SN)(g)(p)			U	
Limit Switch (three-wire version)(g)(p)			R	
Mechanical Switches (Micro-Switches)(g)(p)			V	
Display/Indication				
LEDs (cover without window and without external pushbuttons)(p)				S
Grafical LCD (cover with window and with external pushbuttons)(g)				D
LEDs (cover with window and with external pushbuttons)(g)(p)				L
Gauges				
Without Gauges				S
Built-In Gauges with scale in bar/psi(g)(p)				M

Pneumatical Connection
- ¼-18 NPT[g][p] . . . N
- G¼[g][p] . . . G
- not applicable[f] . . . X

Electrical Connection
- ½-14 NPT (w/o cable glands or plugs for certified SRD960) . . . 6
- M20 x 1.5 (w/o cable glands or plugs for certified SRD960) . . . 7

Electrical Certification/Explosion Protection
- Flameproof II 2 G EEx d IIB/IIC T4/T5/T6 according to ATEX (w/o cable glands or plugs) . . . EDZ
- Explosion-proof according to FM (w/o cable glands or plugs)[g][p] . . . FDZ
- GOST Approved for Explosion-proof[g][p] . . . GDZ
- Without Ex (with cable glands and plugs) . . . ZZZ

Mounting Preparation on Positioner
- NAMUR acc. to IEC 534-6/direct mounting to Flowserve actuators FlowPak and FlowTop/Rotary Actuators according to VDI/VDE 3845[p] . . . N
- Rotary actuators according to VDI/VDE 3845[p] . . . R
- Integrated attachment with air channels on back/rotary actuators according to VDI/VDE 3845[g][p] . . . T
- Direct mounting acc. to NAMUR VDI/VDE 3847/rotary actuators according to VDI/VDE 3845[a][g][p] . . . D
- NAMUR acc. to IEC 534-6/rotary actuators according to VDI/VDE 3845 . . . F

Language
- LCD Language in English/German/French[e][g][p] . . . A
- LCD Language in English/German/Spanish[e][g][p] . . . B
- LCD Language in English/German/Portuguese[e][g][p] . . . C
- LCD Language in English/German/Polish[e][g][p] . . . D
- LCD Language in English/German/Czech[e][g][p] . . . E
- LCD Language in English/German/Italian[e][g][p] . . . F
- LCD Language in English/German/Turkish[e][g][p] . . . G
- LCD Language in English/German/Swedish[e][g][p] . . . H
- LCD Language in English/German/Finnish[e][g][p] . . . J
- LCD Language in English/German/Chinese[a][e][g][p] . . . K
- LCD Language in English/German/Russian[e][g][p] . . . L
- LCD Language in English/German/Hungarian[e][g][p] . . . M
- LCD Language in English/German/Serbian[e][g][p] . . . N
- LCD Language in English/German/Dutch[e][g][p] . . . O
- LCD Language in English/German/Romanian[e][g][p] . . . P
- Without[h][p] . . . S

Options
- Diaphram amplifier for double acting positioner[j][p] . . . -M
- Premium diagnostics features (made with built-in pressure sensors) (HART); Built-in pressure sensors (FF, Profibus)[d][g][p] . . . -B
- Infrared Interface for communication by means of IRCOM[d][g][k][p] . . . -I
- Cover for protection of local push buttons[g][k] . . . -X
- Approved for SIL2/SIL3 application[i][p] . . . -Q
- Custom Configuration[g][p] . . . -T
- ATEX application down to -40°C[l] . . . -F
- Certificate EN 10204-2.1 – certificate of compliance with order . . . -1
- Cage Clamp Connection (WAGO) instead of screw terminals[p] . . . -W
- Feedback-unit for remote mounting – version of position transmitter only with a potentiometer[m][p] . . . -H
- Version for ESD valve with PST functionality[b][p] . . . -E

Tag No. Labeling
- Stamped With Weather Resistant Color . . . -G
- Stainless Steel Label Fixed With Wire . . . -L

Notes
- a Not released
- b Only with (additional inputs/ outputs E) and (optional feature -B)
- d Not available with Input/ Communication D
- e Only with Display/Indication D
- f Not with Version -B, Version C
- g Not available with Version -T
- h Not available with Display/ Indication D
- i Only available for Version single-acting -B in connection with Input/Communication D and H
- j Only with (Version: C)
- k Not in connection with Display/Indication S
- l Only with electrica classification EDZ
- m Only available with Version T, Input/communication X, additional inputs outputs N, Display S, Gauges S, pneumatical connection X, electrical classification EDZ or GDZ or ZZZ, mounting preparation F, Language S
- n With (Version: B, C) or with (Version: T) and (Input: X) and (Optional features: H)
- p Not with Version -L

Accessories for Positioners – see EVE9902
Accessories for Instruments – see EOO9001

SRD991 Intelligent Positioner with HART, PROFIBUS PA or FOUNDATION Fieldbus H1 for EEx ia Intrinsically Safe Applications

The intelligent positioner SRD991 is designed to control pneumatic valve actuators and is available in the version EEx ia (Intrinsic Safety) and can be operated from any control systems (e.g., the Foxboro I/A Series system).

All the diagnostics features can be easily configured and displayed by the Positioner DTM (Valve Monitor). Moreover, the Positioner DTM enables editing a complete "health" report of the valve with all configuration and diagnostics data.

The positioner is available with different communication protocols. This includes versions with analog setpoint (4 to 20 mA) and superimposed HART signal; digital with Profibus communication according to PROFIBUS-PA or FOUNDATION fieldbus H1 according to IEC 1158-2 based on FISCO.

The SRD991 also has the capability to control a Partial Stroke Test (PST) that offers operators a tool to identify the trouble-proof function of ESD (Emergency Shut Down) valves.

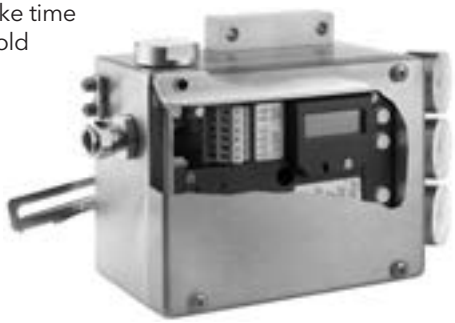
For complete specifications, refer to Product Specification Sheet PSS EVE0105 A-(en) or PSS EVE0105 E-(en).

Version "Intelligent"
- Autostart with self calibration
- Self diagnostic, status and diagnostic messages

Version "Intelligent with Communication"
- Communication HART, FOUNDATION Fieldbus H1 or PROFIBUS-PA
- Configuration by means of local keys, Hand Held Terminal, PC or I/A Series system

Version "Intelligent without Communication"
- Input signal 4-20 mA

For all Versions
- Stroke range 8 to 260 mm (0.3 to 10.2 in)
- Angle range up to 95°
- Supply air pressure up to 6 bar (90 psig), with "Spool Valve" up to 7 bar (105 psig)
- Single or double acting
- Mounting on linear actuators according to NAMUR:
  - IEC 534 Part 6
  - VDI/VDE 3847
- Direct mounting on actuators FlowPak and FlowTop
- Mounting on rotary actuators acc. to VDI/VDE 3845
- Protection class IP 66, NEMA 4X
- Explosion protection:
  - II 2 G EEx i / II 2 G EEx n (intrinsic safety) according to ATEX
  - Intrinsic safety according to FM and CSA
- Ambient temperature -40 to 80°C (-40 to 176°F)
- Display and Local User Interface:
  - Multilingual Full-Text Graphic LCD
  - Status- and Diagnostic-Messages displayed on LCD
  - Easy configuration by means of 3 pushbuttons
- Autostart with self-calibration
- Diagnostics capabilities
- Self-diagnostic, status and diagnostic messages
- Advanced diagnostics for valve predictive maintenance
- Premium diagnostics for valve footprint, online friction, ...
- DTM (Valve Monitor) (see page 7-10)
- Suitable for safety applications up to SIL 3
- Partial Stroke Test (PST) for Emergency Shut Down applications
- Infrared Interface for wireless communication
- Stainless Steel housing for Offshore or Food and Beverage applications
- Additional Inputs/outputs (optional):
  - 2 binary outputs (limits)
  - Position feedback 4 to 20 mA, 1 Alarm output
  - 2 binary inputs
  - Built-in independent inductive limit switches (2- 3-wire) or micro switches
  - Sensors for supply air pressure and output pressure
  - Binary Inputs/Outputs dedicated to SIS logic solvers
- Accessories
  - Booster relay to minimize stroke time
  - Gauge Manifold



Input

With HART communication

Two-wire system
Reverse polarity protection . . built-in standard feature
Signal range . . . . . 4 to 20 mA
Operating range . . . . . 3.6 to 21 mA
Voltage . . . . . DC 12 to 36 V (unloaded circuit)
Max. load. . . . . 420 Ohms (8.4 V at 20 mA)
Communication signal . . . . . HART, 1200 Baud, FSK modulated on 4 to 20 mA

With Fieldbus communication (acc. to FISCO)

Input signal . . . . . digital fieldbus
Supply voltage . . . . . DC 9 to 32 V
Operating current . . . . . 10.5 mA ±0.5 mA (base current)
Current amplitude . . . . . ±8 mA
Fault current . . . . . base current +0 mA
(+4 mA by means of independent FDE-safety circuit)

PROFIBUS-PA

Data transfer . . . . . acc. to PROFIBUS- PA profileclass B based on EN 50170 and DIN 19245 part 4

FOUNDATION Fieldbus H1

Data transfer . . . . . FF Specification Rev. 1.4, Link-Master (LAS)
Function blocks . . . . . PID, AO, 2xDI, DO, IS, OS, AI, MAI

Without communication 4 to 20 mA

Two-wire system
Reverse polarity protection . . built-in standard feature
Signal range . . . . . 4 to 20 mA
Operating range . . . . . 3.8 to 21.5 mA
Voltage . . . . . DC 8 to 36 V (unloaded circuit)
Max. load . . . . . 300 Ohms (6 V at 20 mA)

Common data for all versions

Supply

Supply air pressure . . . . . 1.4 to 6 bar (29 to 90 psig)
with spool valve . . . . . 1.4 to 7 bar (20 to 105 psig)
Supply air quality . . . . . according to ISO 8573-1
Max. particle size and density . . . .Class 2
Max. oil contents . . . . . Class 3

Response characteristics

Min. Sensitivity . . . . . <0.1% of travel span
Non-linearity
terminal based adjustment <0.4% of travel span
Hysteresis. . . . . <0.3% of travel span
Supply air dependence . . . . . <0.1%/1 bar (15 psi)
Temperature effect . . . . . <0.3%/10 K
Mechanical effect
10 to 60 Hz up to 0.14 mm,
60 to 500 Hz up to 2 g . . . . <0.25 of travel span

Pneumatic connection

NAMUR mounting . . . . . 3x female threads ¼-18 NPT or G¼ for pipe diameter 6 to 12 mm (0.24 to 0.47 in)
Direct mounting . . . . . Instead of output y1 an air connection on the backside with O-ring is used (closed at NAMUR mounting).

Electrical connection

Line entry . . . . . 1 or 2 cable glands M20 x1.5 or ½-14 NPT (with Adapter) (for additional Adapter see AD-...)
Cable diameter. . . . . 6 to 12 mm (0.24 to 0.47 in)
Screw terminals . . . . . 2 terminals for input, 4 terminals for additional inputs/outputs
Wire cross section 0.3 to 2.5 mm2 (AWG 22-14)
Test Sockets. . . . . for connection of communicator

Technical Data for Stainless Steel Housing

Material Stainless Steel . . . . . 1.4404/316, 1.25 mm
Protection Class . . . . . IP 66 acc. to EN 60529
Impact Resistance . . . . . 7 Joule acc. to EN 50014
Seals . . . . . VMQ (Silicone)
Weight (Complete Positioner) . . . . . 3.5 kg
Pneumatic Connection . . . . . 1/4–18 NPT on manifold, prepared for gauges (option)
Electrical Connection . . . . . M20 x 1.5 (others with Adapter AD...)

How to Order – Specify model number SRD991

Version						
Single Acting	-B					
Double Acting	-C					
Input/Communication						
Intelligent without communication (4 - 20 mA)		D				
HART Communication (4 - 20 mA)		H				
PROFIBUS-PA (acc. to FISCO)		P				
FOUNDATION Fieldbus H1 (including PID-Function Block, acc. to FISCO)		Q				
Additional Inputs/Outputs						
Prepared For Additional In-/Outputs			N			
Two Binary Outputs			P			
Position Feedback 4 - 20 mA and one binary output for alarm			F			
Binary Inputs[z]			B			
Binary Inputs-Outputs (mandatory for ESD application)[z]			E			
Built-In Limit Switch						
Without Built-In Limit Switch				S		
Inductive Limit Switch – Intrinsically Safe (Standard Version SJ2-N)				T		
Inductive Limit Switch – Intrinsically Safe (Security Version SJ2-SN)				U		
Inductive Limit Switch – Three wire version[u]				R		
Mechanical Switches (Micro-Switches)/UL- and CSA-approved[u]				V		
Potentiometer Input – CEM Filter (for remote mounting – main unit)[t][k]				D		
Cable Entry						
M20 x 1.5 Without cable gland					1	
½"-14 NPT (with adapter(s) M20 x 1.5 to ½"-14 NPT)					6	
M20 x 1.5 With one plastic cable gland					7	
Electrical Classification						
Without Ex						ZZZ
for Input/Communication D, H[c]						
for Input/Communication H[x]						
EEx ia IIC T4 according to ATEX[c]						EA4
II 2 G EEx ia IIC T6 according to ATEX[d]						EAA
II 2 G EEx ia IIC T4 according to ATEX + Zone 20 Dust[c]						ED4
II 2 G EEx ia IIC T6 according to ATEX + Zone 20 Dust[d]						EDA
FM Nonincendive For Class I, Division 2, Groups A, B, C, D,						
Hazardous Locations Indoors and Outdoors, NEMA 4X						NFM
for Input/Communication D, H[y]						
FM Approved For Intrinsic Safety Class I, Division 1, Groups A, B, C, D,						
Hazardous Locations Indoors and Outdoors, NEMA 4X						FAA
for Input/Communication D, H[y]						
CSA Approved for Intrinsic Safety Class I, Division 1, Groups A, B, C, D,						
Hazardous Locations Indoors and Outdoors, NEMA 4X						CAA
for Input/Communication D, H[y]						
GOST Approved for Intrinsic Safety Exia II CT4[c]						GA4
GOST Approved for Intrinsic Safety Exia II CT6..T4[d]						GAA

7

Attachment Kit
- Order as Auxiliary . . . . . N

Manifold
- Pneumatic connection ¼–18 NPT made of an additional manifold . . . . . Y
- Pneumatic connection G ¼ . . . . . R

Options
- Premium diagnostics made with built-in Pressure Sensors(v) . . . . . -B
- Position free of copperand its alloys(h) . . . . . -C
- Infrared interface for communication by means of IRCOM(s) . . . . . -I
- Pneumatic amplifier in the "Spool Valve" version (n) . . . . . -S
- Approved for SIL2/IL3 application(w) . . . . . -Q
- Custom configuration . . . . . -T
- Version of positioner according to VDI/VDE 3847 . . . . . -N
- Version for ESD Valve with PST functionalities(a) . . . . . E
- Stainless Steel Housing(f) . . . . . Z
- Stainless Steel Housing without SST gauges Z1
- Top Mounting Version . . . . . W
- LCD with Menu-Language in English/German/French . . . . . -V01
- LCD with Menu-Language in English/German/Spanish . . . . . -V02
- LCD with Menu-Language in English/German/Portuguese . . . . . -V03
- LCD with Menu-Language in English/German/Polish . . . . . -V04
- LCD with Menu-Language in English/German/Czech . . . . . -V05
- LCD with Menu-Language in English/German/Italian . . . . . -V06
- LCD with Menu-Language in English/German/Turkish . . . . . -V07
- LCD with Menu-Language in English/German/Swedish . . . . . -V08
- LCD with Menu-Language in English/German/Finnish . . . . . -V09
- LCD with Menu-Language in English/German/Chinese(b) . . . . . -V10
- LCD with Menu-Language in English/German/Russian . . . . . -V11
- LCD with Menu-Language in English/German/Hungarian . . . . . -V12
- LCD with Menu-Language in English/German/Serbian . . . . . -V13
- LCD with Menu-Language in English/German/Dutch . . . . . -V14
- LCD with Menu-Language in English/German/Romanian . . . . . -V15

Tag No. Labeling
- Stamped with weather resistant color . . . . . -G
- Stainless steel label fixed with wire . . . . . -L

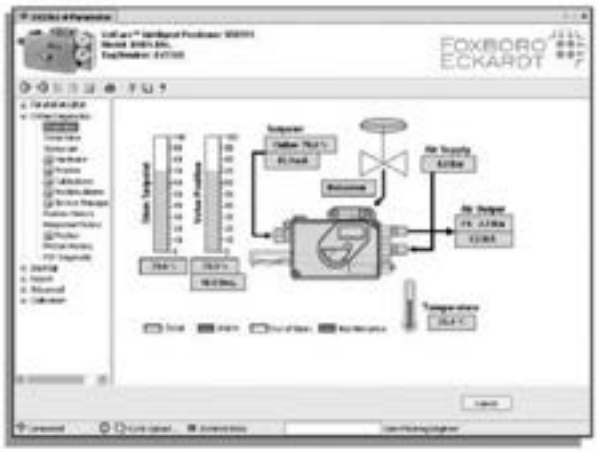
Notes
- a Only with (Version: B) and (additional Inputs/Outputs: E) and (Optional Feature: -B)
- b Not released
- c Only with Input/Communication D, H
- d Only with Input/Communication H, P and Q
- f Available with (Version: C) and (Built-in Limit Switch: S) and (Electrical Classification: ZZZ, EA4, EAA, GA4, GAA) and (Manifold: Y) and (Optional Features: S) or with (Version: B) and (Built-in Limit Switch: S) and (Electrical Classification: ZZZ, EA4, EAA, GA4, GAA) and (Manifold: Y)
- h Available with (Version: B) or with (Version: C) and (Optional Features: S)
- k Only with Electrical Classification EA4, EAA, ZZZ
- n Only with Version -C
- s Only available with Optional Feature LCD (-V01 to -Vxx)
- t Not with additional Input/Outputs D
- v Only available for (Input/Communication F, H, P, Q) and (Electrical Classification ZZZ, FAA, NFM, EAA, CAA, GAA)
- w Only available for (Version single-acting -B) and (Input/Communication D, H)
- x Only in connection with Optional Features -B
- y Not with Optional Features -B
- z Not available with Electrical Classification FAA, NFM, CAA

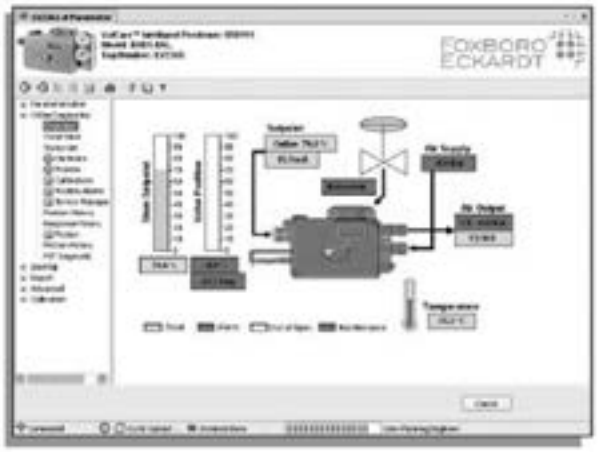
Accessories for Positioners – see EVE9902
Accessories for Instruments – see EOO9001

SRD991 and SRD96O DTM (Valve Monitor) for configuration and diagnostics. Valve Health Report generator

Intelligent Valve Diagnostics for Predictive Maintenance
The valve diagnostic software VALcare™ is available as Device Type Manager (DTM) for integration into control systems based on the Field Device Tool (FDT) technology such as the Foxboro I/A Series system. It is designed to support methods for evaluation of the valve health, operation and configuration. The DTMs support the communication protocols HART, Profibus PA and FOUNDATION Fieldbus H1.

- Data stored inside positioner memory, up to 5 years
- Determination of Stem Friction to prevent leakage and stuck stem
- On Line Friction Histograms
- Partial Stroke Test function for ESD applications
- Diagnosis for failed PST or stuck valve
- Predictive Maintenance capabilities
- Intelligent Alarm Management
- Self surveillance in accordance with NE107
- Service Management
- Histograms for Valve Position and Response History





All in one glance!
Ease of use and easy to understand are the principal characteristic of the new VALcare DTM interlace. With one glance, users can identify if the equipment is running well (in green), needs maintenance (in blue), or indicates a failure (in red). The color code complies with NAMUR NE107 standard.

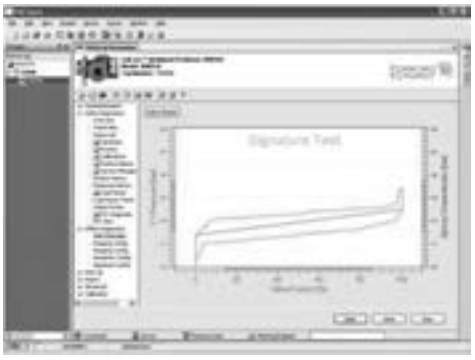
Simple Configuration
The easiest way to configure a valve positioner. All configuration screens have been optimized with intuitive input and graphical elements that make it easy for anyone to configure a valve positioner while minimizing configuration errors.

Valve Footprints
Valve Footprint is an off-line function that defines a reference behavior of the valve/actuator/positioner entity. Several types of signatures are available to define precisely the overall characteristic of the final control element:

- Valve Footprint
- Ramping Signature
- Stepping Signature
- Sensitivity Signature
- On-Line Friction Signature

On Line Friction
An innovative On-Line Friction signature and a Friction calculation are also available to check the valve without disturbing the running process.

With an easy, friendly interface, it is possible to highlight unusual friction.



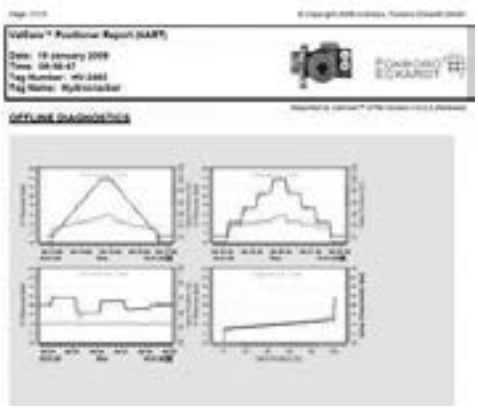
Valve Health Report Generator
With only one click, you can generate a comprehensive and functional valve/positioner report. The 8-page report covers all information regarding the identification, configuration, status, diagnostic state of the positioner-valve combination and of course the valve signature, ramping/stepping/sensitivity signature. For ease of portability and archiving, this report can be printed or stored in PDF format for future reference.

How to order
Advanced Diagnostics is available in every intelligent positioner.

Premium Diagnostics must be selected in the Model code of the device (option -B).

The DTM (Valve Monitor) to configure and read the diagnostics is available free of charge to download from our website.

Eventually the DTM can be ordered (CD-rom) too.



Partial Stroke Testing with SRD991 and SRD960 LCP960 Local Control Panel for PST monitoring

Final control elements in ESD applications such as ON/OFF-, Blow Down- and Venting-Valves remain in one position over a longer time without any mechanical movement. These valves can show the tendency to get stuck and in result might not operate upon demand. This can have a severe impact to the functionality of a Safety System and in result to the operating personnel, plant equipment and the environment. The Partial Stroke Test (PST) offers operators a tool to identify the trouble proof function of such ESD valves. The test can be easily executed via the FDT-DTM based configuration and diagnostic tool ValCare™ and Valve Monitor.

For complete specifications, refer to technical document TI EVE0105 PST.

PST made with intelligent positioners SRD991 for Intrinsically Safe application or SRD960 for Explosion Proof application with specific functionality of PST.

- Supply 24VDC or 4-20mA
- Communication protocols HART, PROFIBUS PA, FOUNDATION Fieldbus H1
- Additional binary inputs and outputs for request from SIS logic solver and feedback status
- FDT-DTM software for configuration and advanced diagnostics (see page 7-10)

Benefits

- Partial Stroke Test (PST) function
- Manual or automatic activation of test
- Freely definable stroke ranges
- On-Line Testing and Diagnosis
- PST Signature by mean of SRD's DTM
- Status- and diagnostic messages displayed on multilingual graphical LCD
- Maintenance alarm in the event of a stuck valve
- Break Pressure trend and Re-inflate time trend for predictive maintenance
- Positioner suitable for use in SIL applications
- Diagnosis date stored in positioner memory
- Positioners can be mounted onto all actuators
- Safety up to SIL 3
- SOV Monitoring with pressure dip detection
- FST (Full Stroke Test) monitoring with trigger capabilities

Activation of Test

- Manually (locally on push button with LCD display or remote)
- Automatic
- Through separate binary input for SIS logic solver
- By means of the LCP96O

Testing Status

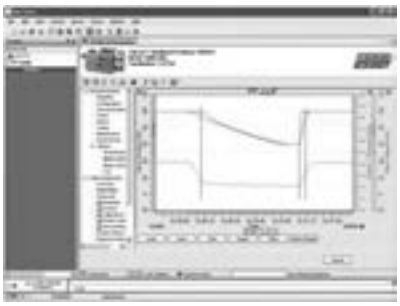
- Not Done
- Running
- Restricted
- OK

Status to be visualized on the LCP960.

Status PST available through digital outputs SIS logic solver or external signalization.

Configuration

- Test Interval (Hours)
- Setpoint Change (%) – Limited at maximum 30%
- Setpoint Change (%) can be fixed or random



7

High Safety of the PST

- Maximum Wait Time (Seconds)
- Minimum Pressure (bar) – Minimum pressure between 0 to 6 bars
- Soft PST (Seconds) – Ramp freely configurable up to l00s
- SIL (Safety Integrity Level) – SRD991 ad SRD 960 are suitable for use in a safety related application up to SIL 3 according to IEC 61511-1. Certificate released by Exida
- Configuration Fail Open or Fail Close

Environment Integration

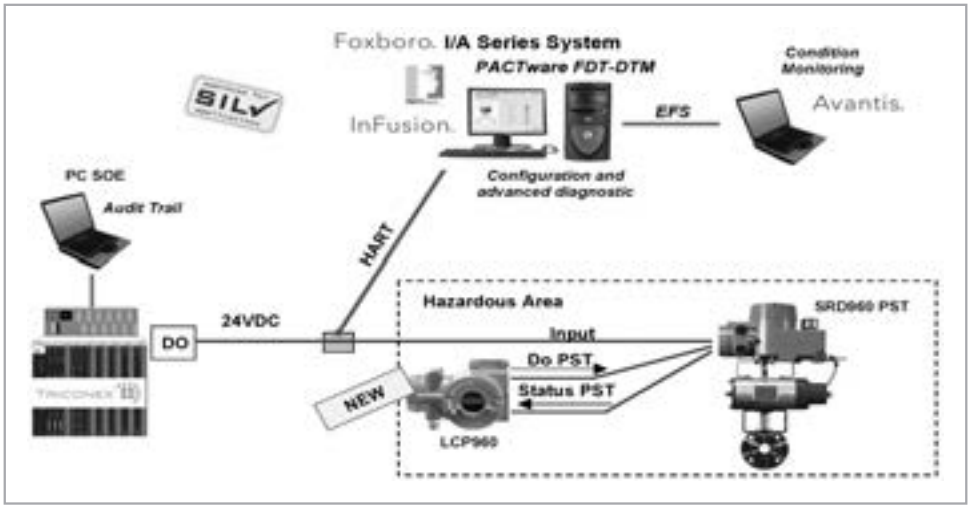
- Full integration into I/A Series system (FBM214 for HART communication) and Avantis CM
- Full integration into any other DCS that supports FDT-DTM standard
- Full integration with Triconex SIS logic solver (Tricon and Trident)
- Full integration with any other SIS logic solver
- Full integration with a HART multiplexer and DCS or stand-alone PC network
- SR991 and SRD960 can be mounted easily onto any ESD (Emergency Shut Down) or ESV (Emergency Shut Vent) valves. Both offer a wide range of mounting kits.

LCP96O Local Control Panel for PST activation and monitoring

- One push button for PST launch
- Backlighted LCD for a better reading in any weather condition
- LCP96O with Explosion Proof certification.
- Can be mounted directly on the near on the Safety valve in the Explosion Proof area.
- Timer to visualized when was done last PST

How to order LCP960

Order under SRD960-LXEDSXxxxxxx



SRI990 Analog Positioner

The Analog Positioner SRI990 with analog input 4 to 20 mA is designed to control pneumatic valve actuators. The modular structure of the SRI990 and SRD991 product lines enables conversion from an analog to an "intelligent" positioner with HART or Fieldbus.

It offers an easy adjustment by means of switches and potentiometers.

For complete specification, refer to Product Specification Sheet PSS EVE0107A-(en).

Input
Two-wire system
Reverse polarity protection . built-in standard feature
Signal range. . . . . 4 to 20 mA
Characteristic of setpoint. . . linear
Operating range . . . . . 3 to 21.5 mA
Voltage . . . . . DC 6 to 36 V (unloaded circuit)
Load. . . . . 300 Ohms, 6 V at 20 mA

Supply
Supply air pressure. . . . . 1.4 to 6 bar (20 - 90 psig)
Supply air . . . . . according to IEC 654-2

Response characteristic
Sensitivity . . . . . < 0.2% of travel span
Non-linearity . . . . . < ±0.8% of travel span
Hysteresis . . . . . < 0.5% of travel span
Temperature effect. . . . . < ±0.5%/10 K
Supply air dependence . . . . < 0.3%/1 bar (15 psi)
Mechanical vibration
10-60 Hz up to 0.14 mm,
60-500 Hz up to 2 g . . . . . < 0.25% of travel span

- Ambient temperature –40 to 80°C (–40 to 176°F)
- Additional Inputs/outputs (optional):
  - Position feedback 4 to 20 mA
  - Built-in independent inductive limit switches (2-/3-wire) or micro switches
- Accessories
  - Booster relay to minimize stroke time
  - Fail Freeze/Fail in place relay
  - Gauge Manifold
- Configuration by means of switches and potentiometers
- Load 300 Ohms
- Low air consumption
- Stroke 8 to 260 mm (0.3 to 10.2 in)
- Angle range up to 95 degree
- Supply air pressure up to 6 bar (90 psig), with "Spool Valve" up to 7 bar (105 psig)
- Single acting or double acting
- Mechanical travel indicator
- Reverse polarity protection and interlock diode
- Switch for Pneumatic Test
- Mounting on linear actuators according to NAMUR:
  - IEC 534 Part 6
  - VDI/VDE 3847
- Direct mounting on actuators FlowPak and FlowTop
- Mounting on rotary actuators acc. to VDI/VDE 3845
- Protection class IP 66 with ATEX and NEMA 4X with FM and CSA
- Explosion protection:
  - II 2 G EEx i/II 2 G EEx n (intrinsic safety) according to ATEX
  - Intrinsic safety according to FM and CSA
- Stainless Steel housing for Offshore or Food and Beverage applications

How to Order – Specify model number SRI990

Version

Single Acting	-B
Double Acting	-C
Position Transmitter (without pneumatic components)	-T

Input

Signal Range 4 - 20 mA(h)	I
Not applicable (without Input Signal or Pneumatics)(f)	X

Additional Inputs/Outputs

Without Additional Inputs/Outputs(q)	M
Position Feedback 4 - 20 mA	Q

Built-In Limit Switch

Without Built-In Limit Switch	S
Inductive Limit Switch – Intrinsic Safe (Standard Version SJ2-N)	T
Inductive Limit Switch – Intrinsic Safe (Security Version SJ2-SN)	U
Inductive Limit Switch (Three Wire Version)(g)	R
Mechanical Switches (Micro Switches) / UL- and CSA-approved(g)	V
Potentiometer Input (for Remote Mounting – main unit)(z)	D

Cable Entry

½"-14 NPT (with Adapter(s) M20x1.5 to ½"-14 NPT)	6
M20 x 1.5 With One Plastic Cable Gland	7

Electrical Classification

Without Ex	ZZZ
II 2 G EEx ia IIC T6 according to ATEX	EAA
II 3 G EEx ia IIC T6 according to ATEX + Zone 20 Dust	EDA
FM Approved Nonincendive For Class I, Division 2, Groups A, B, C, D, E, F & G Hazardous Locations Indoors And Outdoors, NEMA 4X(k)	NFM
FM Approved For Intrinsic Safety Class I, Division 1, Groups A, B, C, D, E, F & G Hazardous Locations Indoors And Outdoors, NEMA 4X(k)	FAA
CSA Approved For Intrinsic Safety Class I, Division 1, Groups A, B, C, D, Hazardous Locations Indoors And Outdoors, NEMA 4X(b)(k)	CAA
GOST Approved For Intrinsic Safety	GAA

Options

Pneumatic connection 1/4–18 NPT made of an additional manifold(p)	-Y
Pneumatic connection G 1/4(p)	-R
Positioner free of copper and its alloys(i)	-C
Pneumatic Amplifier in the Version "Spool Valve"(e)	-S
Approved for SIL2/SIL3 application(l)	-Q
Version of Positioner according to VDI/VDE 3847	-N
Feedback-Unit for Remote Mounting – Version of Position Transmitter only with a potentiometer(f)(k)	-H
Version of Position Transmitter with additional cable connections for solenoid-valve-connection(f)	-D
Certificate EN 10204-2.1 – Certificate of compliance with the order	-1
Stainless Steel Housing(n)	-Z
Stainless Steel Housing without SST gauges(n)	-Z1
Top Mounting version	W

Tag No. Labeling

Stamped With Weather Resistant Color	-G
Stainless Steel Label Fixed With Wire	-L

Notes

- b On request
- d Not released
- e Only with Version -C
- f Only with Version -T
- g Not available with Electrical Classification EAA, ED3, NFM, FAA, CAA, GAA
- h Not available with Version -T
- i Available WITH (Version: B) OR WITH (Version: C) AND (Optional Features: S)
- k Not available with Additional Inputs/Outputs Q
- l Only available for Version single-acting -B
- n Available WITH (Version C) AND (Built-in Limit Switch: S) AND (Electrical Classification: ZZZ, EAA, GAA) AND (Optional Features: S) OR WITH (Version: T) AND (Built-in Limit Switch: S) AND (Electrical Classification: ZZZ, EAA, GAA) OR WITH (Version: B) A
- p One of the option -Y or _R is mandatory to be select
- q WITH (Version: B, C) OR WITH (Version:T) AND (Input: X) AND (Optional Features: H) OR WITH (Version: T) AND (Input: X) AND (Built-in Limit Switch: T, U, R, V)
- z Not available with Electrical Classification FAA, NFM, CAA

SRI986 Electro-Pneumatic Positioner

The SRI986 Positioner is designed to control 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.

It offers an easy adjustment by two mechanical screws.

For complete specification, refer to Product Specification Sheet PSS EVE0102 A-(en).

- Independent adjustment of stroke range and zero
- Adjustable amplification and damping
- Split range up to 3-fold possible
- Input Signal from 0 to 20 mA or 4 to 20 mA
- Supply pressure up to 6 bar (90 psig)
- Single or double acting
- Low vibration effect in all directions
- Mounting on linear actuators according to NAMUR: IEC 534 Part 6
  Stroke range 8 to 100 mm (0.3 to 4 in)
  (larger strokes on request)
- Mounting on rotary actuators acc. to VDI/VDE 3845 for rotation angles up to 120°
  - Angular range
    linear: 30° to 120°
    equal percentage: 90°; linear from 70°
- Protection class IP54 or IP65
- Explosion protection:
  - II 2 G EEx i (intrinsic safety) according to ATEX
  - Intrinsic safety according to FM and CSA
- Ambient temperature* –40 to 80°C (–40 to 176°F)
- EMC in accordance with the international standards and laws (CE)
- Additional Inputs / outputs (optional):
  - Position feedback 4 to 20 mA
  - Built-in independent inductive limit switches (2-/3-wire) or micro switches
- Accessories
  - Booster relay to minimize stroke time
  - Fail Freeze/Fail in place relay
  - Gauge Manifold

Input

Signal range . . . . . .0 to 20 mA/4 to 20 mA
Input resistance . . . . . .< 200 Ohms at 20°C

Supply

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

Pneumatic connection

Female threads . . . . . .G 1/8 acc. to ISO 228

Response characteristic

Amplification. . . . . .adjustable
Sensitivity. . . . . .<0.1% F.S.
Non-linearity (terminal based adjustment). . . . . .<1.0% F.S.
Hysteresis . . . . . .<0.3% F.S.
Supply air dependency. . . . .<0.3%/0.1 bar (1.5 psi)
Temperature effect . . . . . .<0.5%/10 K
Mechanical vibration
10-60 Hz up to 0.14 mm,
60-500 Hz up to 2 g. . . . . .<0.25% of travel span

* dependent on Ambient Temperature classes

How to Order – Specify model number SRI986

Version
- Single Acting . . . -B
- Double Acting . . . -C

Input
- Signal Range 4 - 20 mA . . . -I

Mode of Action
- Standard Version Increasing Input Increases Output . . . D
- Universal Version Set To Increasing Input Decreases Output . . . R

Built-In Limit Switch/Position Transmitter
- Without . . . S
- Inductive Limit Switch Three-Wire Technique, Without Explosion Protection[a] . . . R
- Inductive Limit Switch (Standard Version)[a] . . . T
- Inductive Limit Switch (Security Version)[a] . . . U
- Two Micro Switches, Without Explosion Protection[a] . . . V
- Position Transmitter 4-20 mA[a] . . . F

Cable Entry
- ½"-14 NPT (with Adapter(s) M20x1.5 to ½"-14 NPT) . . . 6
- M20 x 1.5 With One Plastic Cable Gland, Color Gray . . . 7

Electrical Certification: (Only Standard Device)
- II 2 G EEx ia IIC T6 according to ATEX[d] . . . EAA
- FM Approved For Intrinsic Safety Class I, Division 1, Groups A,B,C,D Hazardous Locations Indoors . . . FAA
- CSA Approved For Intrinsic Safety Class I, Division 1, Groups A,B,C,D Hazardous Locations Indoors . . . CAA
- GOST Approved for Intrinsic Safety . . . GAA
- Without . . . ZZZ

Attachment Kit
- Order as Auxiliary . . . N

Manifold
- Order as Auxiliary . . . A

Options
- Amplifier Free Of Nonferrous Metals[a, b] . . . -C
- Protection Class IP65 . . . -F
- Designed For Auxiliary Energy Oxygen Max 6 Bar . . . -S

Tag No. Labeling
- Stamped With Weather Resistant Color . . . -G
- Stainless Steel Label Fixed With Wire . . . -L

Notes
- a Not available with FAA & CAA
- b Only available with Version -B
- d Not available with Limit Switch Codes R, V

Auxiliary – see EVE9902
Fittings – see EOO9001

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

The SRI983 Positioner is designed to control 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.

It offers an easy adjustment by two mechanical screws.

For complete specification, refer to Product Specification Sheet PSS EVE0103 A-(en).

- Independent adjustment of stroke range and zero
- Adjustable amplification and damping
- Split range up to 3-fold possible
- Input Signal from 0 to 20 mA or 4 to 20 mA
- Supply pressure up to 6 bar (90 psig)
- Single or double acting
- Low vibration effect in all directions
- Mounting on linear actuators according to NAMUR: IEC 534 Part 6
  Stroke range 8 to 100 mm (0.3 to 4 in)
  (larger strokes on request)
- Mounting on rotary actuators acc. to VDI/VDE 3845 for rotation angles up to 120°
  - Angular range
    linear: 30° to 120°
    equal percentage: 90°; linear from 70°
- Protection class
  - Pneumatic Unit IP54 or IP65
  - Electrical Unit IP65 with ATEX and NEMA 4 with FM and CSA
- Explosion protection:
  II 2 G EEx d (flameproof) according to ATEX
  explosion proof according to FM and CSA
- Ambient temperature* –40 to 80°C (–40 to 176°F)
- EMC in accordance with the international standards and laws (CE)

* dependent on Ambient Temperature classes

Input

Signal range . . . . . .0 to 20 mA / 4 to 20 mA
Input resistance . . . . . .<260 Ohms
Stroke range . . . . . .8 to 100 mm (0.3 to 4 in)
Angular range
  linear. . . . . .30° to 120°
  equal percentage. . . . . .90°; from 70° linear

Response characteristic

Amplification. . . . . .adjustable
Sensitivity. . . . . .<0.1% F.S.
Non-linearity
(terminal based adjustment) <1.0% F.S.
Hysteresis . . . . . .<0.3% F.S.
Supply air dependency. . . . .<0.3%/0.1 bar (1.5 psi)
Temperature effect . . . . . .<0.5%/10 K
Mechanical vibration
  10-60 Hz up to 0.14 mm,
  60-500 Hz up to 2 g. . . . . .<0.25% of travel span

Supply

Supply air pressure . . . . . .1.4 to 6 bar (20 to 90 psig)

Pneumatic connection

Female threads. . . . . .Q ¼-18 NPT
  acc. to DIN 45 141

Materials

Base plate, manifold, I/P-housing,
  rotation adapter . . . . . .Aluminum (Alloy No. 230)
  finished with DD-varnish
Cover . . . . . .impact resistant polyester
All moving parts of:
  feedback system. 1.4305/1.4571
  mounting bracket. 1.4301

7

How to Order – Specify model number SRI983

Version
- Single Acting . . . -B
- Double Acting . . . -C

Input
- Signal Range 4 - 20 mA . . . -I

Mode of Action
- Increasing Input Increases Output . . . D
- Increasing Input Decreases Output . . . R

Gauges
- Without Gauges . . . L
- Two Built-In Gauges (bar/psi)[a] . . . M
- Two Built-In Gauges (kPa/psi)[a] . . . N

Electrical Certification
- 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

Pneumatic Connection
- Rear Facing NPT ¼, Prepared For Linear Actuators . . . Q
- Down Facing NPT ¼, Prepared For Rotary Actuators . . . N

Tag No. Labeling
- Stamped With Weather Resistant Color . . . -G
- Stainless Steel Label Fixed With Wire . . . -L

Note

a Only available with Version -B

Auxiliary – see EVE9902
Fittings – see EOO9001

SRP981 Pneumatic Positioner

The SRP981 Positioner is designed to control pneumatic valve actuators with pneumatic control signals.

It is used to reduce the adverse effects of valve friction, for higher thrust and shorter positioning time.

It offers an easy adjustment by two mechanical screws.

For complete specification, refer to Product Specification Sheet PSS EVE0101 A-(en).

- Independent adjustment of stroke range and zero
- Adjustable amplification and damping
- Split range up to 4-fold possible
- Input Signal from 0.2 … 1 bar (3 … 15 psig)
- Supply pressure up to 6 bar (90 psig)
- Single or double acting
- Low vibration effect in all directions
- Mounting on linear actuators according to NAMUR: IEC 534 Part 6
  Stroke range 8 to 100 mm (0.3 to 4 in)
  (larger strokes on request)
- Mounting on rotary actuators acc. to VDI/VDE 3845 for rotation angles up to 120°
  - Angular range
    linear: 30° to 120°
    equal percentage: 90°; linear from 70°
- Ambient temperature –40 to 80°C (–40 tp 176°F)
- Protection class IP54 or IP65
- Explosion protection:
  II 2 G EEx c (constructive safety) + Accessories in
  II 2 G EEx i according to ATEX
- Stainless Steel housing (optional)
- Additional Inputs/outputs (optional):
  - Position feedback 4 to 20 mA
  - Built-in independent inductive limit switches (2-/3-wire) or micro switches
- Accessories
  - Booster relay to minimize stroke time
  - Lock-in relay (in case of lost air supply)
  - Gauge Manifold
- Gauges (optional)
  - External gauge manifolds
  - Integrated gauges
    Indicating ranges:
    Input 0 to 1.6 bar (0 to 23 psig)
    Output 0 to 10 bar (0 to 150 psig)

Input

Signal range . . . . . .0.2 to 1 bar (3 to 15 psig) or split range down to Δw 0.2 bar (3 psi)

Response characteristic

Amplification. . . . . .adjustable
Sensitivity. . . . . .<0.1% F.S.
Non-linearity
(terminal based adjustment) <1.0% F.S.
Hysteresis . . . . . .<0.3% F.S.
Supply air dependency. . . . .<0.3% / 0.1 bar (1.5 psi)
Temperature effect . . . . . .<0.5% / 10 K
Mechanical vibration
10-60 Hz up to 0.14 mm,
60-500 Hz up to 2 g. . . . . .<0.25% of travel span

Supply

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

Connection

Pneumatic . . . . . .Female threads G ⅛ acc. to ISO 228

Materials

Base plate . . . . . .Aluminum (Alloy No. 230) finished with DD-varnish
All moving parts of:
feedback system. 1.4305/1.4571
mounting bracket. 1.4301

How to Order – Specify model number SRP981

Version
- Single Acting . . . -B
- Double Acting . . . -C

Input
- Signal Range 0.2 to 1 bar/3 to 15 psi/ 20 - 100 kPa;
- Split-Range Up To 4-Fold Possible, Must Be Specified . . . -I

Mode of Action
- Increasing Input Increases Output . . . D
- Increasing Input Decreases Output . . . R

Gauges
- Without Gauges . . . L
- Two Built-In Gauges (bar/psi)[a] . . . M
- Two Built-In Gauges (kPa/psi)[a] . . . N

Built-In Limit Switch/Position Transmitter
- Without . . . S
- Inductive Limit Switch Three-Wire Technique, Without Explosion Protection[b] . . . R
- Inductive Limit Switch (Standard Version) with Expl. Prot. II 2 G EEx ia IIC T6 acc. to ATEX[b] . . . T
- Inductive Limit Switch (Security Version) with Expl. Prot. II 2 G EEx ia IIC T6 acc. to ATEX[b] . . . U
- Two Micro Switches, Without Explosion Protection[b] . . . V
- Position Transmitter 4-20 mA, with Expl. Prot. II 2 G EEx ia IIC T6 acc. to ATEX[b] . . . W

Cable Entry
- Without Cable Gland . . . 1
- M20 x 1.5 With One Plastic Cable Gland, Color Gray[c] . . . 7

Attachment Kit
- Order as Auxiliary . . . N

Manifold
- Order as Auxiliary . . . A

Options
- Amplifier Free Of Nonferrous Metals[a] . . . -C
- Manual Bypass Switch[a] . . . -T
- Protection Class IP65[b] . . . -F
- Assembled Free Of Oil And Grease / Designed for Aux. Energy Oxygen . . . -S

Tag No. Labeling
- Stamped With Weather Resistant Color . . . -G
- Stainless Steel Label Fixed With Wire . . . -L

Notes
- a Only available with Version -B
- b Not available with Gauge Code M or N
- c Not available with Built-In Limit Switch / Position Transmitter Code S

Auxiliary – see EVE9902
Fittings – see EOO9001

SMI983 Electrical Position Transmitter

The electrical position transmitter SMI983 converts the linear or rotary movement of a valve/actuator into a 4 to 20 mA standard electrical signal. The configuration of the feedback signal in correspondence to the position of the actuator is easily performed by the two push-buttons.

For complete specifications, refer to Product Specification Sheet PSS EVE0202 A-(en).

- Non-reactive conversion of valve-/actuator-position into a load-independent 4 to 20 mA DC signal
- Two-wire circuit
- Easy adjustment of zero and span by two push buttons
- Operating condition is displayed by two LEDs
- Easy configuration of the feedback signal from 'direct' to 'reverse'
- The feedback signal can be randomly adjusted between 4 to 20 mA
- Wear-free, high linear scanning with conductive plastic precision potentiometer
- Mounting on linear actuators according to NAMUR: IEC 534 Part 6
  Stroke range 8 to 100 mm (0.3 to4 in)
  (larger strokes on request)
- Mounting on rotary actuators acc. to VDI/VDE 3845 for rotation angles up to 120°
  - Angular range
    linear: 30° to 120°
    equal percentage: 90°; linear from 70°
- Protection class IP54 or IP65
- Explosion protection:
  - II 2 G EEx i (intrinsic safety) according to ATEX
  - Intrinsic safety according to FM (in preparation)
- Ambient temperature* –40 to 80°C (–40 to 176°F)
- EMC in accordance with international standards and laws (CE)

* dependent on Ambient Temperature classes

Power supply

Supply voltage . . . . . .12 to 36 V dc
Permitted ripple . . . . . .<10% p.p.
Supply voltage dependency .<0.2%
Supply (via signal circuit) . . .eg. FOXBORO ECKARDT-Power supply unit

Response characteristic

Non-linearity (terminal based adjustment) . . . . . .<1% F.S.
Hysteresis . . . . . .<0.5% F.S.
Load dependency . . . . . .<0.2%/.RBmax.
Temperature effect . . . . . .<0.3%/10 K
Mechanical vibration
10-60 Hz up to 0.14 mm,
60-500 Hz up to 2 g. . . . . .<0.25% of travel span

Electrical connection

Line entry. . . . . .1 cable gland M20 x1.5
Cable diameter. . . . . .6 to 12 mm (0.24 to 0.47 in)
Screw terminals . . . . . .3 terminals for additional
Wire cross section . . . . . .0.3 to 2.5 mm^2 (AWG 22-14)

Auxiliary – see EVE9902
Fittings – see EOO9001

How to Order – Specify model number SMI983

Output
Signal Range 4 - 20 mA . . . . . -I

Cable Entry
M20 x 1.5 With One Plastic Cable Gland, Color Gray. 7

Explosion Protection
II 2 G EEx ia IIC T6 according to ATEX. . . . . EAA
Without . . . . . ZZZ

Attachment Kit
Order as Auxiliary . . . . . N

Options
Tag No. Labeling
Stamped With Weather Resistant Color . . . . . -G
Stainless Steel Label Fixed With Wire . . . . . -L

SMP981 Pneumatic Position Transmitter

For the conversion of linear or rotary movements of actuators into a 0.2 to 1 bar pneumatic signal.

For complete specifications, refer to Product Specification Sheet PSS EVE0203 A-(en).

- Force balance system
- Additional limit signaling by means of inductive alarm units
- Mounting kits for linear and rotary movements actuators
- Universal matching to all strokes by means of differing range springs
- Simple installation and adjustment. Zero and range settings non-interactive
- Robust, corrosion-protected design, protection class IP54 or IP65
- Ambient temperature –25 to 80°C (–13 to 176°F)
- Explosion protection II2 G EEx c (constructive safety)

Input

Stroke 8 to 115 mm
Angle . . . . . .30 to 120 degree

Output

Signal range . . . . . .0.2 to 1 bar (3 to 15 psi)or split range

Performance characteristics

Non-linearity (terminal based adjustment) . . . . . .<±1% of final value
Hysteresis . . . . . .<1%
Supply press. dependency. .<0.2%/0.1 bar
Sensitivity . . . . . .<0.05%
Temperature effect . . . . . .0.3%/10 K
Air capacity . . . . . .2200 l/hr

How to Order – Specify model number SMP981

Output

Signal range 0.2-1 bar/3-15 PS /20-100 kPa . . . . . -I

Attachment kit

Order as auxiliary . . . . . N

Options

Tag.No. Labeling

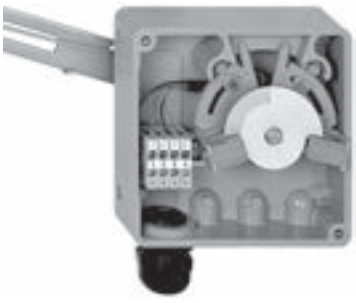
Stamped with weather resistant color . . . . . -G
Stainless steel label fixed with wire. . . . . -L

Auxiliary – see EVE9902
Fittings – see EOO9001

SGE985 Inductive Limit Switch

- Inductive sensors acc. to DIN19234 or respective NAMUR or in three-wire-technology
- Inductive sensors for security application (self monitoring)
- Mechanical Switches (Micro switches)
- Exact switching point due to adjustable transmission
- Switching points freely definable
- Rugged design. Low vibration effect in all directions
- Mounting on linear actuators according to NAMUR: IEC 534 Part 6
  Stroke range 8 to 100 mm (0.3 to 4 in)
  (larger strokes on request)
- Mounting on rotary actuators according to VDI/VDE 3845 For rotation angles up to 120°
  - Angular range
    linear: 30° to 120°
    equal percentage: 90°; linear from 70°
- Protection class IP54 or IP65
- Explosion protection*:
  - II 2 G EEx i (intrinsic safety) according to ATEX
- Ambient temperature** –40 to 80°C (–40 to 176°F)
- EMV according to international standards and laws (CE)
- SIL3/SIL2 for inductive limit switch (optional)
- Double cable entries (optional)

* not for mechanical switches
** dependent on Ambient Temperature classes



Limit switch SGE985 serves as end position signalling of actuators and can be mounted to stroke actuators as well as to rotary actuators. It is constructed with inductive sensors or micro switches and signalizes exceeding or declining of two adjustable positions.

For complete specification, refer to Product Specification Sheet PSS EVE0201 A-(en).

Input
Stroke
with diaphragm actuators.....up to 100 mm
Rotary angle
with rotary actuators.....up to 120°

Response characteristic
Gain .....continuously adjustable from 1:1 to approx. 7:1
Switching point repeatability ..<0.2%

Electrical connection
Line entry .....1 cable gland M20 x1.5
Cable diameter .....6 to 12 mm (0.24 to 0.47 in)
Screw terminals.....3 terminals for additional
Wire cross section .....0.3 to 2.5mm^2 (AWG 22-14)

7

How to Order – Specify model number SGE985

Version

Inductive Limit Switch (Standard Version)	-S
Inductive Limit Switch (Security Version)	-T
Inductive Limit Switch (Three-Wire Version), Without Explosion Protection(b)	-U
Two Micro Switches, Without Explosion Protection(b)	-V

Cable Entry

M20 x 1.5 With One Plastic Cable Gland, Color Gray	7

Explosion Protection

II 2 G EEx ia IIC T6 according to ATEX	EAA
Without	ZZZ

Attachment Kit

Order as Auxiliary	N

Options

SIL3 for Inductive Limit switches	Q

Tag No. Labeling

Stamped With Weather Resistant Color	-G
Stainless Steel Label Fixed With Wire	-L

Note
b Only available with ZZZ

Auxiliary – see EVE9902
Fittings – see EOO9001

FRS Filters Regulators


FRS923


FRS02


FRS03

- Minimal effect of upstream pressure fluctuation
- Low inherent air consumption
- Control of instrument supply air pressure, and removal by filtration of dust particles and water content.
- Explosion protection II2 G EEx c (constructive safety)
- Compact attachment
- Stainless steel housing for Offshore and Food & Beverage applications

Pneumatic equipment and instrumentation such as positioners can only fuction efficiently when provided with an air supply which is dust-, oil- and moisture-free. The supply air pressure has also to be maintened within close limits, unaffected by changes in the rate of consumption.

Filters regulators FRS923, FRS02 and FRS03 provide the necessary control to the desired pressure with an additional filtration up to 30µm.

For complete specification, refer to Product Specification Sheet PSS EVE0301 A-(en) and TI EVE0302 A-(en).

FRS923 – FRS02 – FRS03

Input

Max. . . . . .10 bar/1 MPa/150 psig
Air throughput (FRS923). . . .max. 24 Nm3/h
Air throughput (FRS02/03) . .max. 18 Nm3/h
Upstream pressure
dependency . . . . . .<1 mbar/0.1 bar
Max. inherent air
consumption. . . . . .<0.001m3/h
Ambient temperature
range (FRS923). . . . . .–40 to +80°C
Ambient temperature
range (FRS02/03) . . . . . .–20 to +60°C
Pneum. connections . . . . . .internal thread 1⁄4–18 NPT

Materials

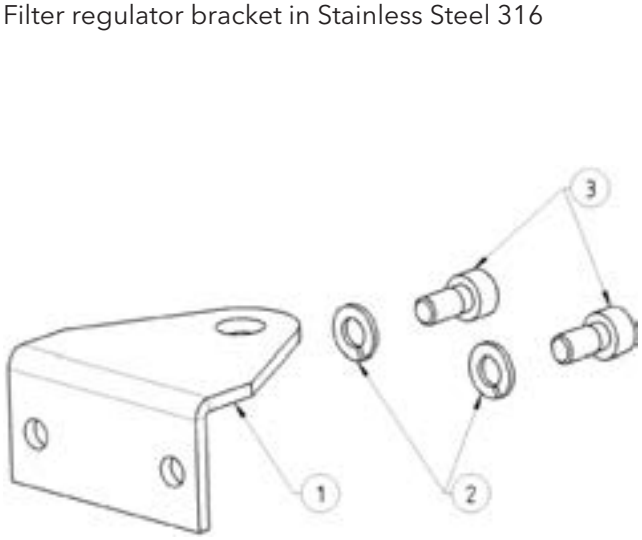
Filter . . . . . .Sintered bronze, diffusion tinned, filter grade 30 mm
Filter bowl (FRS923). . . . . .Diecast aluminum
Filter bowl (FRS02). . . . . .Diecast aluminum
Filter bowl (FRS03). . . . . .Stainless Steel 316
Gauge for standard
version (FRS923). . . . . .Housing: plastic
Gauge for standard
version (FRS02/03). . . . . .Housing: stainless steel
Measuring system . . . . . .brass
Gauge for version without
nonferrous metal (FRS923). . .1.4571

Attachment Kits

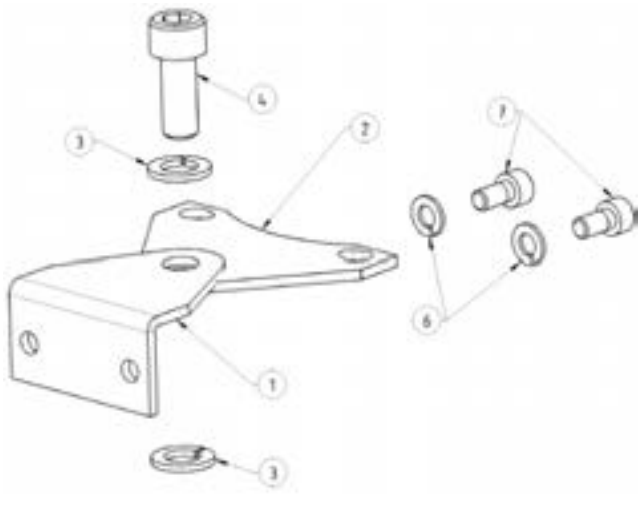
Tube for direct mounting FRS to positioner (1/4 NPT connection)

VG-91

Filter regulator bracket in Stainless Steel 316



EBZG-FR01



EBZG-FR02

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How to Order

Specify model number FRS02 Filter regulator FRS02 . . . . . FRS02

Specify model number FRS03 Stainless Steel filter regulator FRS03

Specify model number FRS923 Filter regulator FRS923 . . . . . FRS923

Control range				
0 to 2.5 bar; 0 to 35 psi	-1			
0 to 6 bar; 0 to 90 psi	-2			
Version				
Pressure Regulator without Filter		R		
Pressure Regulator with Filter		S		
Gauges				
Without[a]			W	
Gauge With Plastic Housing[b, d]			K	
Gauge With Housing in 1.4571[c]			V	
Optional Features				
Indication Range In kg/cm				-A
Indication Range In kPa				-B
Version Free Of Non Ferrous Metal				-C
Protection Class IP65				-F
Assembled free of oil and grease / Designed for Auxilliary Energy Oxygen				-S
Tag No. Labeling				
Stamped With Weather Resistant Color				-G
Stainless Steel Label Fixed With Wire				-L

Notes

a Not available with Optional Features -A, -B
b Not available with Optional Features -C
c Not available with Optional Features -A
d Not available with Optional Features -B

Fittings – see EOO9001

IP24 IP Transducer for Field Service

Input
Signal range . . . . . .4 to 20 mA/0 to 20 mA/
0 to 10 mA/0 to 10 V
Input resistance (at 20 °C)
Normal Version and
Version II 2 G EEx ia IIC T6
acc. to ATEX . . . . . .<220 Ohms
Signal Range
0 to 10 mA / 0 to 10 V. . . .<1000 Ohms

Output
Signal range normal . . . . . .0.2 to 1 bar, 3 to 15 psi,
20 to 100 kPa, 0.2 to 4 bar
Signal Range reverse. . . . . .1 to 0.2 bar, 15 to 3 psi,
100 to 20 kPa, 4 to 0.2 bar

Supply air . . . . . .1.4 ±0.1 bar (20 ±1.4 psi)
Air consumption. . . . . .<100 l/h
Supply air. . . . . .free of oil, dust, water
according to ISO 8573-1
Max. particle-size and -density. . Class 2
Max. oil contents . . . . . Class 3

Transmission performance
Non-linearity
(terminal based) . . . . . .<0.3% of final value
Hysteresis . . . . . .<0.1%
Supply pressure dependence <0.25 %/0,1 bar
Temperature influence
Output normal . . . . . .<0.3%/10 K
Output reverse . . . . . .<0.5%/10 K
Sensitivety level . . . . . .<0.02%
Housing
Material . . . . . .Aluminum casting, finished
Protection Class . . . . . .IP54 or IP65

For conversion of a standard electrical signal into a standard pneumatic signal.

For complete specification, refer to Product Specification Sheet PSS EVE0401 A-(en).

- High air capacity
- Low input resistance
- Easy adaptation of the Converter to ranges 0 to 20 mA or 4 to 20 mA
- Easy change of the output signal from bar to psi
- Mode of action normal or reverse
- Protection Class IP54 or IP65
- Version in II 2 G EEx ia IIC T6 acc. to ATEX
- Stainless Steel housing (optional)

How to Order – Specify model number IP24

Input
Signal Range 0 - 20 mA . . . . . -A
Signal Range 4 - 20 mA . . . . . -B
Signal Range 0 - 10 mA[(a)] . . . . . -C
Signal Range 0 - 10 V[(a)] . . . . . -D

Output
Signal Range 0. -1 bar . . . . . K
Signal Range 3-15 psi L
Signal Range 20-100 kPa . . . . . M
Signal Range 0.2-4 bar[(a)] . . . . . N
Signal Range 0.2-5 bar[(a)] . . . . . P
Signal Range 0.2-6 bar[(a)] . . . . . Q

Mode of Action
Normal (For Version ZZZ) . . . . . D
Normal (For Version EAA according to ATEX) . . . . . E
Reverse . . . . . R

Electrical Certification

II 2 G EEx ia IIC T6	EAA
Without	ZZZ

Options

Attachment Kit For Pipe Mounting	-A
Protection Class IP65	-B
Calibration In kp/cm	-C
Assembled free of oil and Grease / Designed for Aux. Energy Oxygen	-S

Tag No. Labeling

Stamped With Weather Resistant Color	-G
Stainless Steel Label Fixed With Wire	-L

Note

a Only available with Mode of Action Code D

Accessories for Positioners

Adapter **AD** made of stainless steel, brass zinc plated, or plastic, for connection of different threads.

Cable glands **BUSG** made of stainless steel, brass zinc plated, or plastic guide the electrical connection into the device and guarantee a centered, stress relieved and secure fit of the cable.

Attachment-Kits **EBZG** are customized and include all required parts to mount a positioner onto a specific valve/actuator.

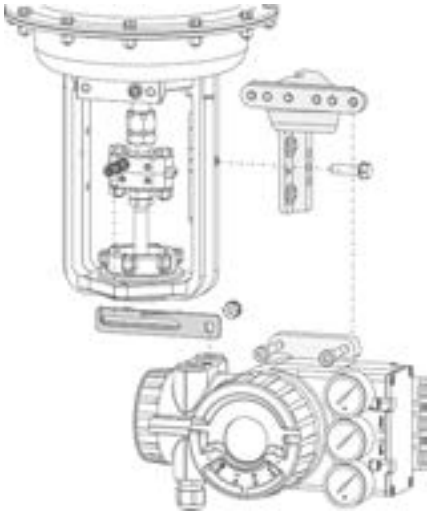
Manifolds **LEXG** allow, depending on the positioner version, different pneumatic connections or the option to include a manifold with gauges.

Booster-Relays deliver a higher air capacity, to reduce the stroke time for very large actuators:

- Direct mounted to the positioner
  LEXG (for SRD960, SRD991, SRI990)
  or **VKXG** (for SRI986 and SRP981)
- Remote mounted acc. to NAMUR
  LEXG (for all Positioners)

Technical Data for AD and BUSG, refer to Product Specification PSS EOO9001 A-(en).

For complete specification of the EBZG, LEXG and VKXG, refer to Product Specification for the individual positioner.



Adapter . . . . . **AD**
- Adapter ½" NPT to ¾" NPT (stainless steel) . . . . . -A3
- Adapter M20 x 1.5 to G½" (internal thread) (stainless steel) . . . . . -A8
- Adapter M20 x 1.5 to ½"-14 NPT (internal thread) (brass with nickel coating) . . . . . -A5
- Adapter M20 x 1.5 to ½"-14 NPT (internal thread) (stainless steel) . . . . . -A6
- Adapter (plastic) M20 x 1.5 to PG13.5 (internal thread) . . . . . -A9

Cable glands and plugs . . . . . **BUSG**
- M20 x 1.5 plastics, color blue . . . . . -K7
- M20 x 1.5 plastics, color white . . . . . -K9
- M20 x 1.5 stainless steel . . . . . -S6
- M20 x 1.5 plastics, color gray . . . . . -K6
- M20 x 1.5 HF-cable gland for Fieldbus . . . . . -P4
- M20 x 1.5 Plug-connector for Fieldbus (ss/threaded connection ⅞-UN) . . . . . -F2
- M20 x 1.5 Plug-connector for Fieldbus (ss/threaded connection M12) . . . . . -P3
- M20 x 1.5 stainless steel EEx d . . . . . -S7
- M20 x 1.5 brass zink plated EEx d . . . . . -S8
- ½-14 NPT cable gland 6...12 mm, Stainless steel, EEx d . . . . . -N1
- ½-14 NPT cable gland 6...12 mm, Steel zink plated, EEx d . . . . . -N2
- ½-14 NPT, brass zink plated, EEx d . . . . . -N3
- M20 x 1.5 plug, plastic . . . . . -V3
- M20 x 1.5 plug, Stailess steel, EEx d . . . . . -V4
- ½-14 NPT plug,Stainless Steel, EEx d . . . . . -V5
- M20 x 1.5 plug, brass zink plated, EEx d . . . . . -V6
- ½-14 NPT plug, brass zink plated, EEx d . . . . . -V7

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 casting yoke acc. NAMUR. (incl. standard Couple lever) (for SRI986)	-HN
For diaphragm actuators with pillar yoke acc. NAMUR. (incl. standard Couple lever) (for SRP981, SRI983, SMP981, SMI983, SGE985)	-FN
For diaphragm actuators with pillar yoke acc. NAMUR (incl. standard Couple lever) (for SRI986)	-KN
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 Sigma F (for SRI986, SRP981, SRI983)	-SN
For Masoneilan type 37/38, Fisher Elliott type 656, 667 (for SRP981, SRI983, SGE985, SMI983, SMP981)	-TN
For Guide type P (for SRP981, SRI983)	-UN
For Masoneilan type 87/88 (for SRI986)	-DN
For Masoneilan type 87/88 (for SRP981, SRI983, SMP981, SMI983, SGE985)	-EN
For Masoneilan VariPak (for SRI986)	-LN
For Masoneilan VariPak (for SRP981, SRI983, SGE985, SMI983, SMP981)	-MN
For Masoneilan type 37/38, Fisher Elliott type 656, 667, (SRI986)	-QN
For IAL actuators (for SRP981, SRI983, SGE985, SMI983, SMP981)	-VN
For IAL actuators (for SRI986)	-WN
For Velan - Sart von Rohr[g]	-XN
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	**.EBZG**
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

Spring Set	**.FESG**
Range-Springs (4 pc.) (for SRP981, SRI983, SRI986)	-FN

Manifold (Connection ¼-18 NPT)	**.LEXG**
Staggered connections (for SRP981, SRI986)	-BN
Connections same level (for SRP981, SRI986)	-CN
Staggered connections for ¼"-thread pneum. tube-connections (e.g. tube-diameter: 8 mm / 0.3 in) (for SRP981, SRI986)	-DN
With gauges for supply air, y, for version single acting (for SRP981, SRI986)	-JN
With gauges for supply air, w, for version single acting (for SRP981)	-KN
With gauges for supply air, w, y, for version single acting (for SRP981)	-LN
With gauges for supply air, y1, y2, for version double acting (for SRP981, SRI986)	-MN
With gauges for w, y1, y2, for version double acting (for SRP981)	-NN
Gauge manifold without gauge (for SRP981, SRI986)	-RN
Gauge manifold without gauge, for supply air, y1, y2, for version double acting (for SRP981, SRI986)	-SN
Gauge manifold without gauge, for w, y1, y2, for version double acting (for SRP981)[f]	-TN

Booster (Connection ¼-18 NPT)	**VKXG**
For version single acting (for SRP981, SRI986)	-FN
For version double acting (for SRP981, SRI986)	-GN
For version single acting with doubled output capacity (for SRP981, SRI986)	-HN

ACCESSORIES FOR POSITIONER (SRD991, SRD992, SRI990, SRD960)

Filter Regulator

Filter Regulator FRS923-2SK for -40°C to +80°C	.FRS01
Filter Regulator for -20°C to +70°C	.FRS02
Nipple for direct mounting Filter regulator 1/4 NPT both sides	.VG-91

Communication/Modem/DTM

HART USB Modem (made by Itak) with ATEX IS Certification	.MOD900
DTM for SRD Serie for HART / FF / Profibus	VALCARE
ATEX IS Barrier Rail Mounted Module, 1 Channel, ATEX EEx ia IIC / FM Intrinsically Safe (TV228-SEGX)	.TV228

Attachment Kits	**EBZG**
For Diaphragm Actuators With Casting Yoke Acc. NAMUR (Includes Standard Couple Lever)	-H
For Diaphragm Actuators With Pillar Yoke Acc. NAMUR (Includes Standard Couple Lever)	-K
For Mounting To Rotary Actuators Acc. VDI/VDE 3845 (Without Bracket)	-R
For FoxTop/FoxPak	-E
For FoxTop/FoxPak	-E1
For Armstrong/Python/Dembia Series sizes 1" to 3"	-AM1
For Badger Meter – Research Control Series 754 And 755 Size ½-Inch	-B1
Attach Kit-Brackets VDI/VDE 3845 (A=80mm/3.15in Attachment Kit – Brackets VDI/VDE 3845 (A=80 mm/3.15 in; B=20 mm/0.79 in)	-C1
Attach Kit-Brackets VDI/VDE 3845 (A=80mm/3.15in Attachment Kit – Brackets VDI/VDE 3845 (A=80 mm/3.15 in; B=30 mm/1.18 in)	-C2
Attach Kit-Brackets VDI/VDE 3845 (A=130 mm/5.12 in Attachment Kit – Brackets VDI/VDE 3845 (A=130 mm/5.12 in; B=50 mm/1.97 in)	-C3
Attach Kit-Brackets VDI/VDE 3845 (A=130 mm/5.12 in Attachment Kit – Brackets VDI/VDE 3845 (A=130 mm/5.12 in; B=30 mm/1.18 in)	-C4
For Direct Mounting (Includes Standard Couple Lever)	-D
For Fisher 657, 667 (Linear) size 30 And 40	-F1
For Fisher 1051, 1052, 1061 size 40	-F2
For Fisher 657, 667 size 40 and 60	-F3
For Fisher 657, 667 size 70 and 100	-F4
For Fisher 1051, 1052, 1061 size 33	-F5
For Fisher 1051, 1052, 1061 size 60	-F6
For Fisher Baumann 9000	-F7
For Fisher Baumann 48000	-F8
For Fisher 20 DN15	-G1
For Foxboro P-Series such as EBZG-H With Installed Height 80 mm/3.15 in.	-H1
NAMUR – Attachment Kit for Centered Mounting Position On The Casting Yoke	-H2
For Mounting On ADAR Control Valve	-H3
For Mounting On ADAR Micro Flow Control Valve	-H4
For casting yoke 100mm wide max without fixing hole	-H5
For Diaphragm Actuators With Casting or Pillar Yoke Acc. NAMUR (Includes Standard Couple Lever)	-H6
For old Biffi rotary actuator	-J
For "old" Jamesbury QuadraPower	-J1
For "old" actuator Jamesbury RP/SR Series	-J2
For Diaphragm Actuators With Pillar Yoke Acc. NAMUR (Incl. Standard Couple Lever) such as EBZG-K With Installed 80 mm/3.15 in.	-K1
For Kinetrol (Actuator Size 05)	-K2
For Kinetrol (Actuator Size 07)	-K3
For Kinetrol (Actuator Size 09)	-K4
For Diaphragm Actuators With Pillar Yoke Pillar Diameter From 40 mm Up To 50 mm (Incl. Standard Couple Lever)	-K5
For Metso/Neles Rotary Actuators Type AB6 And Type BJ & BC Size 8 And 10, B1C11	-L1
For Metso/Neles Rotary Actuators Type BJ & BC Size 12 And 16, B1C17	-L2
For Metso/Neles Rotary Actuators Type BJ & BC Size 32[(h)]	-L3
For Metso/Neles Rotary Actuators Type EC / EJ Series	-L4
For Metso/Neles Rotary Actuators Type B1CU C/20	-L5
For Metso/Neles Rotary Actuators Type BJ and BC size 8 to 20	-L6

Couple Lever

Standard Couple Lever (Stroke 8 to 70 mm)	-A				
Extended Couple Lever, Max 260 mm Extended Couple Lever; Stroke Maximum 260 mm	-A1				
Extra Short Stroke Couple Lever (Stroke 5 to 15 mm)	-A2				
Fold Feedback Couple Lever (Stroke 8 to 70 mm)	-A3				
Short Stroke Couple Lever (Stroke 8 to 35 mm)	-A4				
Extended Couple Lever; Stroke Maximum 120 mm	-B				

Carrier Bolts	**SRXG**				
Carrier Bolt Extra Short 23 mm		-A			
Carrier Bolt 38 mm		-B			
Adjustable Carrier Bolt 20 to 37 mm		-C			
Carrier Bolt 47 mm		-D			
Carrier Bolt 57 mm		-E			
Carrier Bolt 65 mm		-F			
Adjustable Carrier Bolt with Fixing System for Stem Diameter up to 21 mm		-G			
Adjustable Carrier Bolt with Fixing System centered for Stem Diameter up to 21 mm		-G1			
Adjustable Carrier Bolt with Fixing System centered with extension up to 80 mm for Stem Diameter up to 21 mm		-G2			
Adjustable Carrier Bolt with Fixing System for Stem Diameter up to 34 mm		-H			
Carrier Bolt 80 mm		-I			
Adjustable Carrier Bolt for thread ⅜"		-J			
Adjustable Carrier Bolt for thread 5/16".		-K			
Extension for Carrier Bolt		-L			
Adjustable Carrier Bolt with Fixing System centered for Stem Diameter up to 64 mm		-M			

Manifold	**LEXG**				
Manifold – staggered connections in ¼" for pneumatic tube-connections (e.g. diameter: 8 mm/0.3 in)			-D		
Manifold – staggered connections for connection G ¼ NPT (e.g. diameter: 8 mm/0.3 in)			-D1		
Manifold w/connection G ¼			-K		
Manifold w/connection ¼-18 NPT			-L		

Gauges Manifold

Manifold w/gauges with connection ¼-18 NPT				-J	
Manifold w/gauges with connection G ¼				-J1	
Manifold w/gauges with connection ¼-18 NPT				-M	
Manifold w/gauges with connection G ¼				-M1	
Manifold w/gauges for SRI990 and SRD991 ECEP EP0200/NAFLinkIT with connection ¼-18 NPT				-M2	
Manifold w/o gauges with connection ¼-18 NPT				-N	
Manifold w/o gauges with connection G ¼				-N1	

Booster Relay

Booster Relay w/connection ¼-18 NPT					-F
Booster Relay w/connection G ¼					-F1
Booster Relay w/connection ¼-18 NPT. Approved for SIL3 application					-FQ
Booster Relay w/connection G ¼. Approved for SIL3 application					-FQ1
Booster Relay w/connection ¼-18 NPT					-G
Booster Relay w/connection G ¼					-G1
Booster Relay w/connection 1/2-18 NPT with double output capacity					-H
Booster Relay w/connection G ½ with doubled output capacity					-H1
Booster Relay w/connection ½-18 NPT with double output capacity. Approved for SIL3 application					-HQ
Booster Relay w/connection G ½ with doubled output capacity. Approved for SIL3 application					-HQ1
Booster Relay Type EIL-100 ¼NPT made by SMC (one piece for single acting)					-W11
Booster Relay Type EIL-100 ¼NPT made by SMC (two pieces for double acting)					-W12
Booster Relay Type XB100 ¼NPT made by HIC (one piece for single acting) (e)					-W21
Booster Relay Type XB-100 ¼NPT made by HIC (two pieces for double acting) (c)					-W22
Booster Relay w/connection G ¼ (for NAMUR mounting)					-X1
Booster Relay w/connection G ¼ (for NAMUR mounting)					-Y1
Booster Relay w/connection G ½ with doubled output capacity (for NAMUR mounting)					-Z1

Surge/Lightning Protection

Surge/Lightning Protection for 4-20 mA with or without HART type TP48-N-NDI	-L1				
Surge/Lightning Protection for FF/Profibus type TP32-N-NDI	-L4				

Cable Gland

Cable Gland, M20x1.5 Plug-Connector For Fieldbus (ss/Threaded Connection 7/8 – UN)		-F2			
Cable Gland, M20x1.5 Plastics, Color Gray/Black		-K6			
Cable Gland, M20x1.5 Plastics, Color Blue		-K7			
Cable Gland, M20x1.5 Plastics, Color White		-K9			
Cable Gland, M20x1.5 Plug-Connector For Fieldbus (ss/Threaded Connection M12)		-P3			
Cable Gland, M20x1.5 HF For Fieldbus.		-P4			
Cable Gland, M20x1.5 Stainless Steel		-S6			

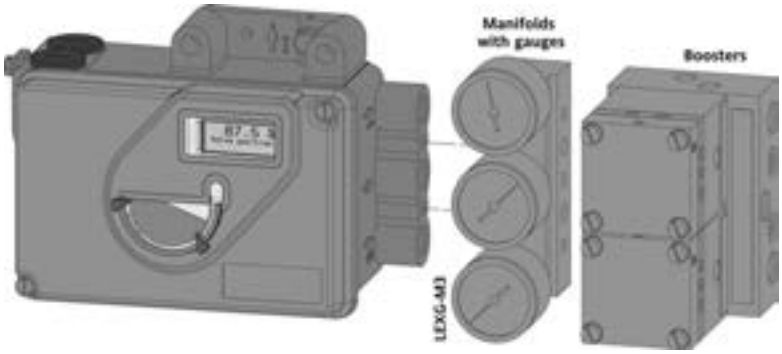
Tube Fitting

Tube Fittings, G ¼A, 6x1mm, 1 pc.			VG-01		
Tube Fittings, G ¼A, 6x1mm, 2 pc.			VG-02		
Tube Fittings, G 1/4A, 6x1mm, 3 pc.			VG-03		
Tube Fittings, ¼ NPT, 6x1mm, 2 pc.			VG-52		
Tube Fittings, ¼ NPT, 6x1mm, 3 pc.			VG-53		

Adapter

Adapter (Brass With Nickel Coating) M20 x 1.5 To ½-14 NPT (Internal Thread).				AD-A5	
Adapter (ss) M20 x 1.5 To ½-14 NPT (Internal Thread)				AD-A6	
Adapter (ss) M20 x 1.5 To G ½" (Internal Thread).				AD-A8	
Adapter (Plastic) M20 x 1.5 To PG13.5 (Internal Thread)				AD-A9	

Lock-In Relays.				**LEXG**	
Lock-In Relay for loss of air supply for single acting/NAMUR mounting					-VR1
Lock-In Relay (Fall Freeze) for loss of air supply and electric power for single and double acting/SRI990 direct mounting					-VR6



LEXG-M3: Sandwich Manifold with gauges, to be mounted together with Booster LEXG-Fx or Gx

Notes

a After 1, July 2003 in the region of validity for ATEX this version with Electrical Classification according to CENELE
b Not released
c Not released
d Please consult Eckardt production before ordering
e Not released
f Only available with Version -C
g Only available for SRI986

* We recommend to contact our field service before selection of these mounting kits. Further Attachment kits on request. See also http://www.foxboro-eckardt.com/pdf/TI_FoxEck/Attachment-kits.pdf.