SRD991 Intelligent Positioner with HART, PROFIBUS, FOUNDATION Fieldbus or FoxCom

Version "Intelligent"

- Autostart with self calibration
- Self diagnostic, status and diagnostic messages

Version "Intelligent with Communication"

- Communication HART, FOUNDATION Fieldbus H1, PROFIBUS-PA or FoxCom
- Configuration by means of local keys, Hand Held Terminal, PC or I/A Series system or with an infrared interface by means of IRCOM

Version "Intelligent without Communication"

- Input signal 4-20 mA

For all Versions

- Stroke range 8 to 120 mm / 260 mm (0.3 to 4.7 in / 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 65, 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 ... 80 °C (–40 ... 176 °F)
- Display and Local User Interface:
  - Multilingual Full-Text Graphic LCD or LEDs
  - Status- and Diagnostic-Messages displayed on LCD
  - Easy configuration by means of 3 pushbuttons

The microprocessor controlled positioner SRD991 is designed to control pneumatic valve actuators and can be operated locally or by means of control systems (e.g. the Foxboro I/A Series System), controllers or PC-based configuration- and operation tools such as PC50 (FDT-Software).

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

- Mechanical travel indicator
- 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
- Accessories
  - Booster relay to minimize stroke time
  - Gauge Manifold

Input All "intelligent" versions are with micro controller

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 *
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 profile class 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	AO, PID, Transducer, Resource

*) unloaded circuit

Input (continued)

With FoxCom communication **)

Operating mode **digital**
Input signal . . . . . digital
Supply voltage . . . . . DC 13 to 36 V
Supply current . . . . . ~ 9 mA at 24 V
Communication signal . . . . . FoxCom digital, 4800 Baud, FSK modulated on supply voltage

Operating mode **analog**
Two-wire system
Reverse polarity protection . . built-in standard feature
Signal range . . . . . 4 to 20 mA
Operating range . . . . . 3.6 to 21.5 mA
Voltage . . . . . DC 13 to 36 V
max. Load . . . . . 650 Ohms (13 V at 20 mA)
Communication signal . . . . . FoxCom, 600 Baud, FSK modulated on 4 to 20 mA

Without communication 4...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 *
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 1/4-18 NPT or G1/4 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 1/2-14 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 mm^2 (AWG 22-14)
Test Sockets . . . . . for connection of communicator

*) unloaded circuit
**) After 1. July 2003 in the region of validity for ATEX this version with Electrical Classification acc. to CENELEC is only available as a spare part

Model Codes

Intelligent Positioner	**SRD991**											241005
Version												
Single Acting		-B										
Double Acting		-C										
Input/Communication												
Intelligent without communication (4 - 20 mA)			D									
HART Communication (4 - 20 mA)			H									
FoxCom Communication (4 - 20 mA/IT1)			E									
FoxCom Communication (Digital/IT2)			F									
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				Q								
Binary Inputs	(z)			B								
Sensor Input	(b)			C								
Potentiometer Input				D								
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)	(u)				R							
Mechanical Switches (Micro Switches) / UL- and CSA-approved	(u)				V							
Cable Entry												

(continued on next page)

Model Codes (continued)

Cable Entry				
M20 x 1.5 Without Cable Gland	1			
1/2"-14 NPT (with Adapter(s) M20 x 1.5 to 1/2"-14 NPT)	6			
M20 x 1.5 With One Plastic Cable Gland	7			
Electrical Classification				
Without Ex		ZZZ		
II 2 G EEx ia IIC T4 /according to ATEX (c) / according to CENELEC (e)(p)(t)		EA4		
II 2 G EEx ia IIC T6 according to ATEX (d)		EAA		
II 3 D EEx ia IIC T6 according to ATEX		ED3		
FM Nonincendive For Class I, Division 2, Groups A, B, C, D, Hazardous Locations Indoors And Outdoors, NEMA 4X		NFM		
FM Approved For Intrinsic Safety Class I, Division 1, Groups A, B, C, D, Hazardous Locations Indoors And Outdoors, NEMA 4X		FAA		
CSA Approved For Intrinsic Safety Class I, Division 1, Groups A, B, C, D, Hazardous Locations Indoors And Outdoors, NEMA 4X		CAA		
GOST Approved For Intrinsic Safety (b)		GAA		
Attachment Kit				
Order as Auxiliary			N	
Manifold				
Order as Auxiliary				A
Options				
Two Built-In Presure Sensors For Supply Air And Output To Actuator Y1 (v)				-B
Amplifier Free Of Nonferrous Metals (w)				-C
Infrared Interface For Communication By Means Of IRCOM (s)				-I
Pneumatical Connections G 1/4 instead of 1/4-18 NPT				-P
Pneumatic Amplifier in the Version "Spool Valve" (n)				-S
Certificate for SIL2 / SIL3 application (w)				-Q
Custom Configuration				-T
Version of Positioner according to VDI/VDE 3847(m) (g)(m)				-N
LCD with Menu-Language in English / German / French (k)(f)				-V01
LCD with Menu-Language in English / German / Spanish (k)(f)				-V02
LCD with Menu-Language in English / German / Portuguese (k)(f)				-V03
LCD with Menu-Language in English / German / Polish (k)(f)				-V04
LCD with Menu-Language in English / German / Czech (b)(k)(f)				-V05
LCD with Menu-Language in English / German / Italian (k)(f)				-V06
LCD with Menu-Language in English / German / Turkish (b)(k)(f)				-V07
LCD with Menu-Language in English / German / Swedish (k)(f)				-V08
LCD with Menu-Language in English / German / Finnish (k)(f)				-V09
LCD with Menu-Language in English / German / Chinese (b)(k)(f)				-V10
LCD with Menu-Language in English / German / Russian (k)(f)				-V11
LCD with Menu-Language in English / German / Hungarian (k)(f)				-V12
LCD with Menu-Language in English / German / Serbian (k)(f)				-V13
LCD with Menu-Language in English / German / Dutch (k)(f)				-V14
Tag No. Labeling				
Stamped With Weather Resistant Color				-G
Stainless Steel Label Fixed With Wire				-L

(b) Not released
(c) Only with Input/Communication D, H
(d) Only with Input/Communication F, H, P and Q
(e) Not with Input/Communication D, P and Q
(f) One of the Optional Features V01 to V14 is required
(g) On request
(k) Not with Input/Communication E
(m) In addition select one Mounting Adapter EBZG-N1 to -N4
(n) Only with Version -C
(p) Not with Input/Communication D, H
(s) Only available with Optional Feature LCD (-V01 to -V14)
(t) After 1. July 2003 in the region of validity for ATEX this version with Electrical Classification acc. to CENELEC is only available as a spare part
(u) Not available with Electrical Classification EA4, EAA, NFM, FAA or CAA
(v) Only available for Input/Communication F, H in connection with Electrical Classification ZZZ, FAA, NFM, EAA or CAA
(w) Only available for Version single-acting -B in connection with Input/Communication -D or -H
(x) For Input/Communication H, F only in connection with Optional Features -B
(y) Not with Option -B
(z) Not available with Electrical Classification FAA, NFM or CAA

Accessories for Positioners	see EVE9902
Accessories for Instruments	see EOO9001

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