Positioners

SRD998 Intelligent Positioner with HART Communication

Product Specification

PSS EVE0108, Rev E

March 2026

https://www.se.com

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The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

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Overview

The SRD998 Intelligent Positioner operates pneumatic valve actuators. It can be operated from a control system such as EcoStruxure™ Foxboro™ DCS, controllers, or PC-based configuration and operation tools such as the VALcare™ FDT/DTMs.

The positioner is available with the HART 7 communication protocol. The extra-large, full-text, multilingual graphical LCD, in conjunction with the rotary selector, allows comfortable and easy local configuration and operation.

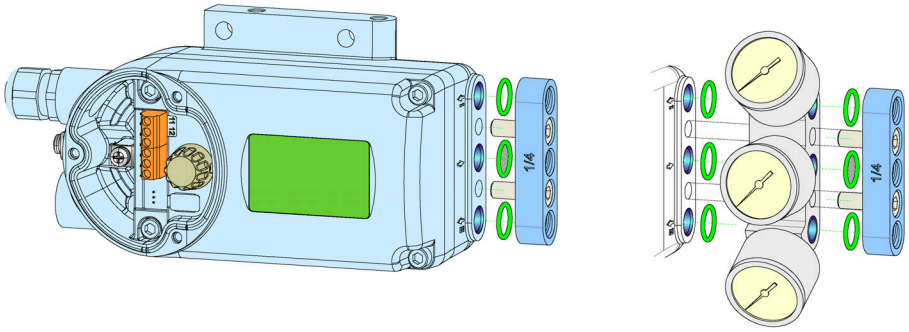
For installations in contact with explosive atmospheres, certificates are available.

Features

- Autostart with self-calibration
- Self diagnostics, status, and diagnostic messages
- Device Type Manager (DTM) for valve diagnostics and predictive maintenance
- Easy local operation with the rotary selector
- Extra-large, full-text, multilingual graphical LCD; AD and PD versions with backlight
- HART 7 communication
- Stroke 8 to 260 mm (0.3 to 10.2 in) with standard lever; larger stroke with special lever
- Angle range up to 95 degrees (up to 120 degrees on request)
- Mounting onto any linear or rotary actuator
- Supply air pressure up to 10 bar (145 psi)
- Single acting or double acting
- Protection class IP66
- Explosion protection, intrinsic safety according to ATEX/IECEx, INMETRO, NEPSI, CCC, and KCs
- Approved for SIL applications

Design

Figure 1 - Design



Using the modular concept of the SRD998, the positioner can be optimally adapted to the application. In addition to connection manifolds with various threads, mounting kits for each drive, and extensive accessories, these also include integrated pneumatic amplifiers in various performance classes.

Pneumatic Amplifiers

Depending on the actuator, use a single or double-acting pneumatic amplifier.

- Codes B*xx* - Single Acting
- Codes C*xx* - Double Acting

Single-acting pneumatics versions B0S, B1S and B2S differ in air flow. Double-acting pneumatics versions C0S, C1S and C3S differ in the air performance.

For drives with increased air output, a correspondingly powerful supply air station is required.

Technical Data

Supply

Supply air pressure:

- B0S, C0S - 1.4 to 6 bar (20 to 87 psi)
- B1S, B2S - 1.4 to 10 bar (20 to 145 psi)
- C1S, C3S - 1.4 to 10 bar (20 to 145 psi)

Output to actuator - 0 to ~100% of supply air pressure (up to 5.5 bar at 6 bar supply air pressure)

Air supply - according to ISO 8573-1:

- Solid particle size and density - class 2
- Oil rate - class 3
- Pressure dew point 10 K under ambient temperature

We recommend the use of a filter regulator for air supply of the positioner. It reduces the air pressure to the actuator's maximum pressure, keeps it constant, and filters the air.

For the pneumatics with standard flow (B0S, B1S, C0S), we recommend the FRS02, FRS03, or FRS923 filter regulator. When using other brands, a filter grade of 30 µm or better is supported.

For the pneumatics with high flow (B2S, C1S, C3S), we recommend the High Flow Filter Regulator FRS04 or FRS05 with a filter grade of 5 µm. When using other brands, a filter grade of 5 µm is supported.

Travel Range

Stroke range	8 to 260 mm (0.3 to 10.2 in) with standard feedback levers; special levers on request
Rotation angle range	Without mechanical stop up to 95˚ angle (up to 120˚ on request)

Response Characteristic

NOTE: The response characteristic data is measured according to VDI/VDE 2177 and IEC 61514-2 and a rotary actuator with 90° angle

Sensitivity	< 0.1% of travel span
Non-linearity (terminal based adjustment)	< 0.6% 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 effect according to IEC 60068-2-6 (2007) for 10 to 500 Hz up to 2 g	
For Pneumatics B0S	• < ±0.25% up to 80 Hz and 1 g • < ±0.25% up to 70 Hz and 2 g
For Pneumatics B1S, B2S	• < ±0.25% up to 70 Hz and 1 g • < ±0.25% up to 50 Hz and 2 g
For Pneumatics C0S	• < ±0.25% up to 400 Hz and 1 g • < ±0.25% up to 70 Hz and 2 g
For Pneumatics C1S, C3S	• < ±0.25% up to 55 Hz and 2 g

In case of high vibrations, we recommend using remote mounting solution.

Note for Single/Double Acting Operation

For optimal control performance, do not use double-acting membrane amplifier (C0S) positioners with single-acting actuators.

Compatibility

SRD998 Pneumatic Type		SRD998 Pneumatic Technique	Recommended Filter Regulator	Booster, if required
Single Acting	B0S	Diaphragm Amplifier	FRS923/FRS02/FRS03	VBS200/VBS300 Series
Double Acting	C0S	Diaphragm Amplifier	FRS923/FRS02/FRS03	VBS200/VBS300 Series
Single Acting	B1S	Diaphragm Amplifier	FRS923/FRS02/FRS03	VBS200/VBS300 Series
Single Acting	B2S	Diaphragm Amplifier	FRS04/FRS05	VBS200/VBS300 Series
Double Acting	C1S	Spool Valve	FRS04/FRS05	Booster not recommended
Double Acting	C3S	Spool Valve	FRS04/FRS05	Booster not recommended

Pneumatic Performance - Air Flow

Air flow at Air Input/Output	3 bar
Pneumatic **Code B0S** Single Acting - Standard Flow, Standard Pneumatic	
To pressurize actuator	7000 Nl/h
To vent actuator	5000 Nl/h
Pneumatic **Code B1S** Single Acting - Standard Flow, High Performance Pneumatic	
To pressurize actuator	7000 Nl/h
To vent actuator	5000 Nl/h
Pneumatic **Code B2S** Single Acting - High Flow, High Performance Pneumatic Cv 0.58	
to pressurize actuator	21500 Nl/h
to vent actuator	15000 Nl/h
Pneumatic **Code C0S** Double Acting - Standard Flow, Standard Pneumatic	
To pressurize actuator	5000 Nl/h
To vent actuator	3750 Nl/h
Pneumatic **Code C1S** Double Acting - Standard Flow, High Performance Pneumatic	
To pressurize actuator	7000 Nl/h
To vent actuator	7000 Nl/h
Pneumatic **Code C3S** Double Acting - Very High Flow, High Performance Pneumatic Cv 0.85	
To pressurize actuator	33500 Nl/h
To vent actuator	33500 Nl/h

Recommended pneumatics, depending on the actuator size:

- For actuators < 1 dm^3, use the C0S, C1S, B0S, or B1S
- For actuators > 1 dm^3, use the B2S or C3S

Pneumatic Performance - Air Consumption

Table 1 - Pneumatic Performance - Air Consumption

Description	Air Consumption(1)
Air consumption at steady state	3 bar
Pneumatic Code **B0S** Single Acting - Standard Flow	250 Nl/h
Pneumatic Code **B1S** Single Acting - Standard Flow, High Performance Pneumatic	400 Nl/h
Pneumatic Code **B2S** Single Acting - High Flow, High Performance Pneumatic	400 Nl/h
Pneumatic Code **C0S**(Double Acting - Standard Flow	335 Nl/h
Pneumatic Code **C1S** Double Acting - Standard Flow, High Performance Pneumatic	400 Nl/h
Pneumatic Code **C3S** Double Acting - Very High Flow, High Performance Pneumatic	400 Nl/h

(1) Measured according to ANSI/ISA-75.13.01-2013.

Volume Booster Series for Increased Air Flow

For large actuators or to reduce action time, a volume booster (to order as an accessory) may be necessary.

VBS200/VBS201

Volume boosters with Cv1.4 and pneumatic connection 1/2”

Optional with Exhaust Collector or Silencer

Figure 2 - VBS201 Directly Flanged to the Positioner, with Optional Silencer

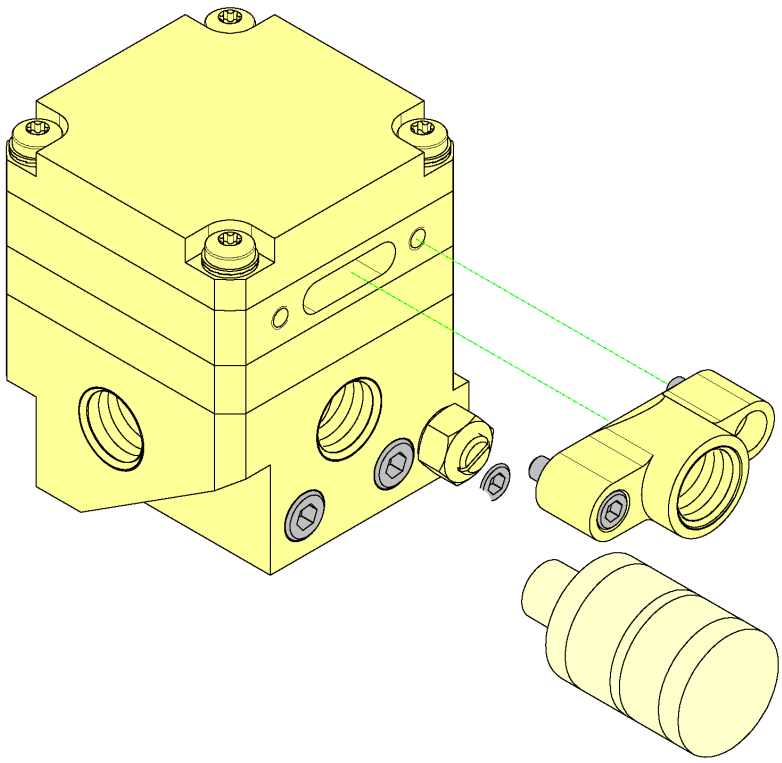
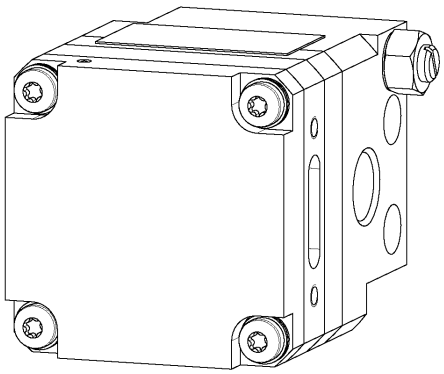
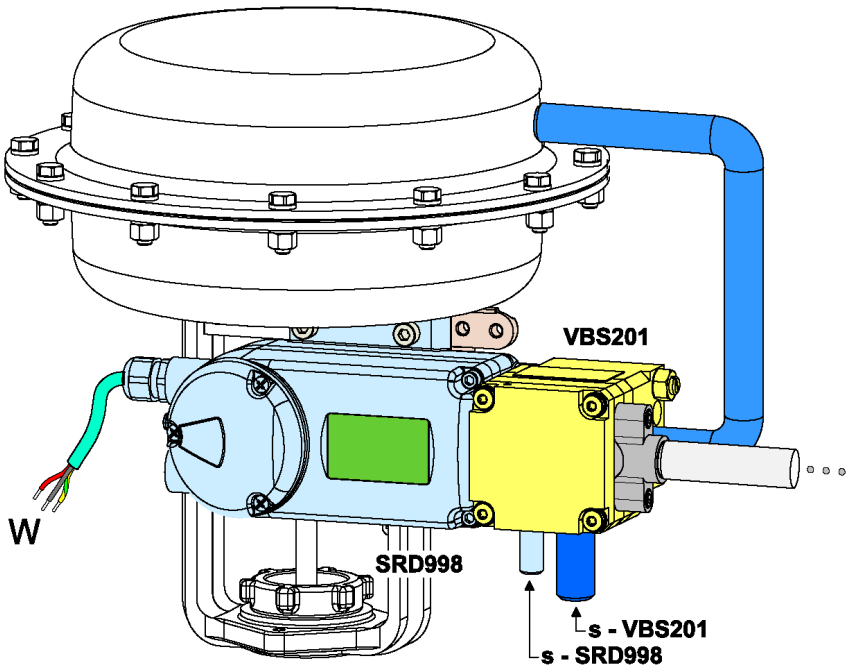


Figure 3 - VBS200 for Remote Mounting



For more information, see *Volume Booster Series - VBS200/201/222/224* (PSS EVE0602).

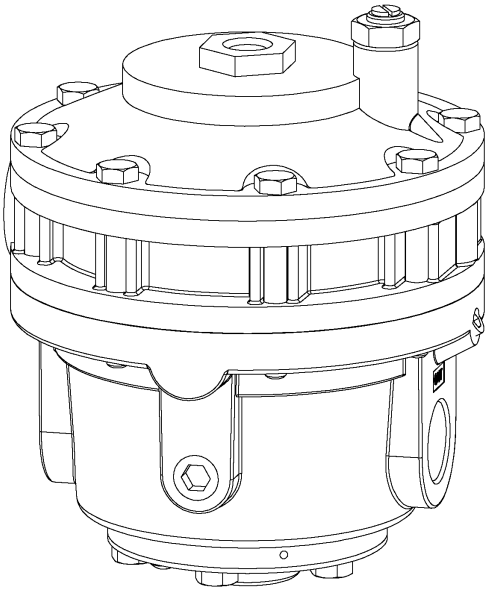
Figure 4 - Mounting Example



VBS300/VBS310

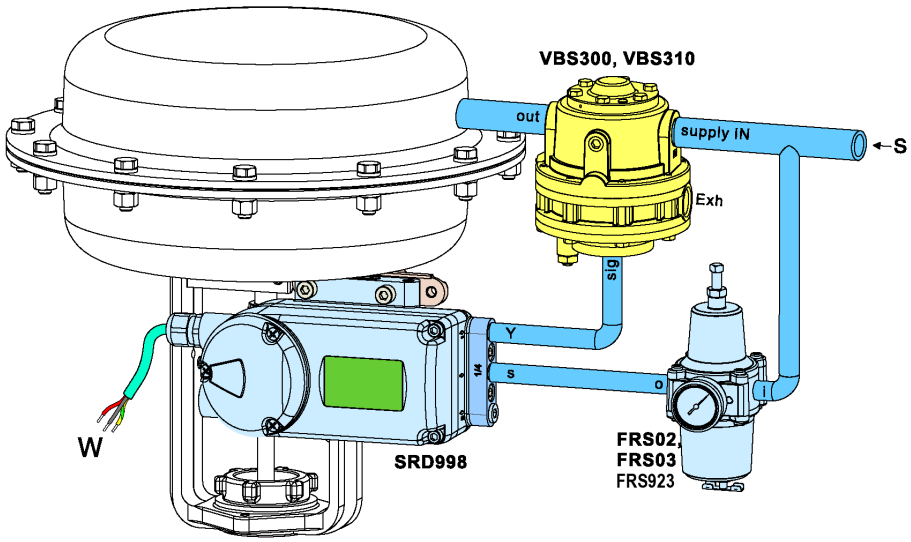
Volume boosters with Cv 7 and pneumatic connection 1" for remote mounting.

Figure 5 - VBS300 in Aluminum, VBS310 in Stainless Steel 316



For more information, see *VBS300(-G)/VBS310(-G) - Volume Booster Series* (PSS EVE0603).

Figure 6 - Mounting Example 2



Functional Specifications

Automatic Start-up (Autostart Functionality)

Automatic determination of the mechanical end positions of the valve (initial value and final value), IP motor parameters, direction of action of the spring, and control parameters. The control parameters are optimized dynamically during this routine. This procedure makes an adjustment and optimization to the actuator possible without additional manual settings. Several Autostart modes are available.

Options

Position Feedback 4-20 mA

Operation and Configuration

The local LCD enables fast and easy configuration as well as clear diagnostic messages.

- Local - with local rotary selector.
- Display - multilingual graphic LCD; SRD998 AD and PD models with backlight.

The positioner contains the following menu languages:

- English
- German
- French
- Chinese
- Portuguese
- Spanish
- Polish
- Korean
- Swedish
- Italian
- Russian
- Turkish
- Japanese
- Czech

Manual Local and Remote Settings

Table 2 - Manual Local and Remote Settings

Actuator mode • Linear valve • Rotary actuator	Linear or rotary actuator • Left or right mounted • Opening clockwise or counter-clockwise
Valve characteristic	Linear, equal percentage, inverse-equal percentage or custom (22 points)
Valve action	Opens or closes with increasing set point
Split range	Free upper and lower values
Travel limits	Free upper and lower values
Cutoffs	Free upper and lower values
Stroke range	Configurable
Temperature unit	Configurable (°C or °F)
Autostart	• Endpoints • Standard Autostart • Enhanced Autostart • Smooth response • Fast response • PI only
Control parameters	Determined during Autostart
Working range	Freely adjustable (for indication on LCD)
Manual adjustment	• P-gain • I-time • D-time • T63-time • Control gap
Manual operation	Manual input of set point to drive the valve in steps of 12.5% or 1%
Pneumatic test	Function to evaluate the pneumatic output
LCD orientation	• Standard • Upside down
Position alarms	Configurable alarms for: • Low low position • Low position • High position • High high position

Software Supported Configurations

- By means of Hand Held Terminal (HART)
- PC by means of VALcare DTM Software
- Foxboro DCS, Evo™, and other DCS

Issue Handling

For single-acting, default position at:

- Air supply loss - pressure Y_1 = zero
- Electric power loss - pressure Y_1 = zero
- Electronics issue - pressure Y_1 = zero

For double-acting or spool valve amplifier, default position at:

- Air supply loss - pressure Y_1 = zero; Y_2 =zero
- Electric power loss - pressure Y_1 = zero, Y_2 = full air supply pressure
- Electronics issue - pressure Y_1 = zero; Y_2 = full air supply pressure

Diagnostics

Table 3 - Diagnostic Utilities

Type	Basic Diagnostics	Advanced Diagnostics	Premium Diagnostics
Configuration data surveillance	Yes	Yes	Yes
Input current adjustment surveillance	Yes	Yes	Yes
A/D converter surveillance	Yes	Yes	Yes
Position value surveillance	Yes	Yes	Yes
Connection to I/P converter surveillance	Yes	Yes	Yes
Potentiometer surveillance	Yes	Yes	Yes
Angle adjustment surveillance	Yes	Yes	Yes
Surveillance of reaching the set point in a specific time	Yes	Yes	Yes
Temperature limit min or max surveillance	Yes	Yes	Yes
Autostart surveillance	Yes	Yes	Yes
Custom characterization		Yes	Yes
Auto diagnostic		Yes	Yes
Alarm management		Yes	Yes
Alarm output for switching (with Option board)		Yes	Yes

Table 3 - Diagnostic Utilities (Continued)

Type	Basic Diagnostics	Advanced Diagnostics	Premium Diagnostics
Status list according to NE107		Yes	Yes
Position history		Yes	Yes
Response history		Yes	Yes
Step response analyze		Yes	Yes
Online friction			Yes
Stepping signature			Yes
Ramping signature			Yes
Sensitivity signature			Yes
Valve signature			Yes

Built-in Pressure Sensors

Model SRD998-HPD has built-in pressure sensors to measure the pressure of supply air, output y1 and output y2.

Measuring Range	0 to 10 bar (0 to 145 psi)
Accuracy	±2% of 10 bar at 25°C reference temperature
Temperature influence	±0.5% / 10 K of 10 bar (-40°C ~ +80°C

Physical Specifications (Common Data for All Versions)

Mounting

Attachment to Stroke Actuators

- For casting yoke according to IEC 534-6 (NAMUR) with attachment kit EBZG -H or -H1
- For pillar yoke according to IEC 534-6 (NAMUR) with attachment kit EBZG -K or -K1

Stroke range with feedback lever:

- Standard (EBZG-A) - 8 to 80 mm (0.31 to 3.15 in)
- Extended (EBZG-B) - 60 to 120 mm (2.36 to 4.72 in)
- Extended (EBZG-A1) - 110 to 260 mm (4.33 to 10.24 in)

Larger stroke ranges can be realized with special levers.

Attachment to Rotary Actuators According to VDI/VDE 3845

With Attachment Kit - EBZG -R

- For further information about Attachment Kits, see Model Code - Accessories, page 36.

Materials

Housing and covers	Aluminum Alloy No. 230 (GD-AlSi12) Polyester Powder coated
Sealings between covers	Silicone elastomer and silicone core with Ag/Cu particles
LCD Window	Polycarbonate, UV stabilized
External Screws	Stainless Steel V2A 1.4301
Motherboard	Coated with protective resin
All moving parts of feedback system (for example, shaft)	1.4306/1.4571/1.4104
Attachment kits	V4A 1.4401 or (depending upon version) Aluminum Alloy No. 230 (GD-AlSi12) finished with DD varnish
Mounting bracket	Aluminum Alloy No. 230 (GD-AlSi12)
Pneumatic diaphragms	VMQ, PVMQ (silicone elastomer, suitable for use in the paint industry) (depending upon version)

Weight

With pneumatic:

- B0S - approximately 2.1 kg (4.7 lbs)
- B1S/B2S - approximately 2.2 kg (4.9 lbs)
- C0S - approximately 2.3 kg (5.1 lbs)
- C1S/C3S - approximately 2.2 kg (4.9 lbs)

Pneumatic Connection

NAMUR mounting - G 1/4 or 1/4-18 NPT via manifold

Electrical Connection

Line entry	1 cable gland M20 x1.5, 1/2-14 NPT (with Adapter AD-)
Cable diameter	6 to 12 mm (0.24 to 0.47 in)
Screw terminals	2 terminals for input loop Models AD and PD with Universal In-Out Option (position feedback): 4 terminals for additional inputs/outputs)
Wire cross section	0.3 to 2.5 mm^2 (AWG 22-14) max torque 0.6 Nm

Ambient Conditions

Operating conditions	According to IEC 654-1, the device can be operated at a class Dx location
Ambient temperature	Operation • SRD998-HBD T6: -40 to +44°C (-40 to +112°F) T4: -40 to +80°C (-40 to +176°F) • SRD998-HAD/HPD T6: -40 to +40°C (-40 to +104°F) T4: -40 to +80°C (-40 to +176°F)
	Transport and storage -40 to +80°C (-40 to +176°F). If the device is exposed to sunlight and the temperature can rise above 80°C (176°F), use a sun shade.
Storage conditions (according to IEC 60721-3-1)	1K5; 1B1; 1C2; 1S3; 1M2

Indicators LCD (visible)(2)	-25 to +70°C (-13 to +158°F)
Relative humidity	Up to 100%
Protection class (according to IEC 60529)	IP66

Electromagnetic Compatibility EMC

Operating conditions	**Industrial environment**
Immunity according to EN 61326	Fulfilled
Immunity according to IEC 61326	Fulfilled
Immunity according to EN 61000-6-2	Fulfilled
Emission according to EN 61326 Class A and Class B	Fulfilled
EN 61000-6-2	Fulfilled
EN 55011 Group 1 Class A and Class B	Fulfilled
NAMUR recommendation EMV NE21	Fulfilled

Safety Requirements

CE Label

Electromagnetic Compatibility	2014/30/EU
Explosion Protection	2014/34/EU
RoHS2	2011/65/EU

Safety

According to EN 61010-1 (or IEC 61010-1)	Safety class III Overvoltage Category I
External circuit breakers	Limitation of power supplies for fire protection is required according to EN 61010-1, appendix F (or IEC 61010-1).

(2) At temperatures less than -20°C, the LCD reacts only slowly; at temperatures greater than +70°C, the background becomes dark (no damage when back in -20 to +70°C range).

Electrical Certifications

The positioners are designed to meet the electrical safety descriptions listed in the following table. For detailed information or status of testing laboratory approvals/ certifications, contact Global Customer Support.

NOTE: With appropriate order only. National requirements must be observed.

Table 4 - Electrical Certifications

Certification	Model Code Option
Intrinsically Safe according to ATEX/IECEx II 2G Ex ia IIC T6...T4 Gb; II 1D Ex ia IIIC T100°C Da for Model BD II 2G Ex ia IIC T6...T4 Gb; II 1D Ex ia IIIB T100°C Da for Models AD and PD	A1
Intrinsically Safe according to ATEX/IECEx II 2G Ex ib IIC T6...T4 Gb; II 2D Ex ib IIIC T100°C Db for Model BD II 2G Ex ib IIC T6...T4 Gb; II 2D Ex ib IIIB T100°C Db for Models AD and PD	A2
Intrinsically Safe according to ATEX/IECEx II 3G Ex ic IIC T6...T4 Gc; II 3D Ex ic IIIC T100°C Dc for Model BD II 3G Ex ic IIC T6...T4 Gc; II 3D Ex ic IIIB T100°C Dc for Models AD and PD	A3
INMETRO Ex ia IIC T4/T6 Gb; Ex ia IIIC T100°C Da for Model BD Ex ia IIC T4/T6 Gb; Ex ia IIIB T100°C Da for Models AD and PD	B1
INMETRO Ex ib IIC T4/T6 Gb; Ex ib IIIC T100°C Db for Model BD Ex ib IIC T4/T6 Gb; Ex ib IIIB T100°C Db for Models AD and PD	B2
INMETRO Ex ic IIC T4/T6 Gc; Ex ic IIIC T100°C Dc for Model BD Ex ic IIC T4/T6 Gc; Ex ic IIIB T100°C Dc for Models AD and PD	B3
CCC Ex ia II C T4/T6 Gb; Ex ia IIIC T_{200}100°C Da for Model BD Ex ia II C T4/T6 Gb; Ex ia IIIB T_{200}100°C Da for Models AD and PD	C1
CCC Ex ib II C T4/T6 Gb; Ex ib IIIC T100°C Db for Model BD Ex ib II C T4/T6 Gb; Ex ib IIIB T100°C Db for Models AD and PD	C2
CCC Ex ic II C T4/T6 Gb; Ex ic IIIC T100°C Dc for Model BD Ex ic II C T4/T6 Gb; Ex ic IIIB T100°C Dc for Models AD and PD	C3
NEPSI Ex ia II C T4/T6 Gb; Ex ia IIIC T_{200}100°C Da for Model BD Ex ia II C T4/T6 Gb; Ex ia IIIB T_{200}100°C Da for Models AD and PD	N1
NEPSI Ex ib II C T4/T6 Gb; Ex ib IIIC T100°C Db for Model BD Ex ib II C T4/T6 Gb; Ex ib IIIB T100°C Db for Models AD and PD	N2
NEPSI Ex ic II C T4/T6 Gb; Ex ic IIIC T100°C Dc for Model BD Ex ic II C T4/T6 Gb; Ex ic IIIB T100°C Dc for Models AD and PD	N3
KCs (Korean Certificate Safety) II 2G Ex ia IIC T4/T6 Gb; II 1D Ex ia IIIC T100°C Da for Model BD only	K1

Table 4 - Electrical Certifications (Continued)

Certification	Model Code Option
KCs (Korean Certificate Safety) II 2G Ex ib IIC T4/T6 Gb; II 2D Ex ib IIIC T100°C Db for Model BD only	K2
KCs (Korean Certificate Safety) II 3G Ex ic IIC T4/T6 Gc, II 3D Ex ic IIIC T100°C Dc for Model BD only	K3
Without certification	ZZ

For use in hazardous areas in certified safe circuits with the following maximum values for Model SRD998 BD (Certification number: IBExU15ATEX1109X):

Pi	Ui	Ii	T4	T6
900 mW	30 V	130 mA	-40°C to +80°C	N/A
660 mW	28.1 V	130 mA	-40°C to +80°C	-40°C to +44°C
630 mW	25.7 V	130 mA	-40°C to +80°C	-40°C to +46°C
590 mW	25.3 V	130 mA	-40°C to +80°C	-40°C to +48°C
510 mW	26 V	130 mA	-40°C to +80°C	-40°C to +52°C

Li = < 10 µH

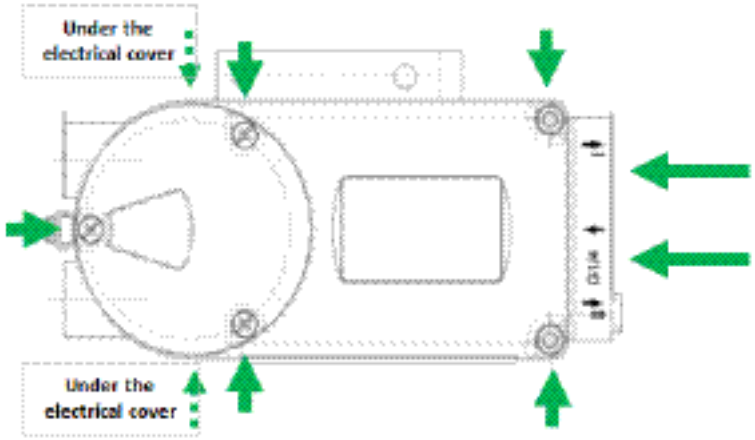
Ci = < 2.5 nF

IP degree according to IEC 60529 - IP66

For use in hazardous areas in certified safe circuits with the following maximum values for Models SRD998 AD and PD (Certification number: IBExU20ATEX1044X):

Supply and sensor circuit in protection type intrinsic safety Ex ia IIC (Terminal + 11/-12)	• Ui 30 V / Ii 130 mA • Pi (T4) 0.9 W / Pi (T6) 0.515 W • Ci 25 nF / Li 1 µH
UNI-I/O module circuit in protection type intrinsic safety Ex ia IIC (channel 1: + 13 /-14 and channel 2 (position feedback): + 15 /-16)	• Ui 30 V / Ii 130 mA • Pi (T4) 0.9 W (channel 1) or 0.66 W (channel 2) • Pi (T6) 0.550 W (channel 1) or 0.386 W (channel 2) • Ci 28 nF / Li 2 µH
Ambient temperature range	• -40°C up to +80°C (T4) • -40°C up to +40°C (T6)
Model BD: External potentiometer has protection type Intrinsic Safety Ex ia IIC	• Uo: 6 V • Io: 130 mA • Po: 0.9 W
Models AD and PD: External potentiometer has protection type Intrinsic Safety Ex ia IIC	• Uo: 5.1 V • Io: 8 mA • Po: 11 mW

Torque Specifications



10 Nm for Manifold screw (2x)

7 Nm for Main Cover screw (4x): go diagonally

2 Nm for Electrical cover screw (3x)

2 Nm for Grounding screw (2x)

0.6 Nm for Terminal Block screws

SRD998 with HART Communication

Signal Input	Two wire system
Reverse polarity protection	Standard feature
Signal range	4 to 20 mA
Operating range	3.6 to 21.5 mA
Input voltage (3)	DC 12 to 36 V (unloaded) • min 12 V at 4 mA • min 8.4 V at 20 mA
Load	• 420 Ohms • 8.4 V at 20 mA
Communication signal	• HART 7 • 1200 Baud • FSK (Frequency Shift Key) modulated on 4 to 20 mA and 0.5 Vpp at 1 kOhm load
Input impedance Zi	• Z = 320 Ohms for AC voltage • 0.5 to 10 kHz with < 3 dB non-linearity(4) (5) (6)
Start-up time	Approximately 3 seconds
Interruption time without power down	Typ. 8 ms(7)

Configuration

The SRD998 positioner can be configured with HART by any host system using a PC with a HART modem, a handheld terminal, or a DCS.

Local

By means of rotary selector and LCD display.

DTM (Device Type Manager)

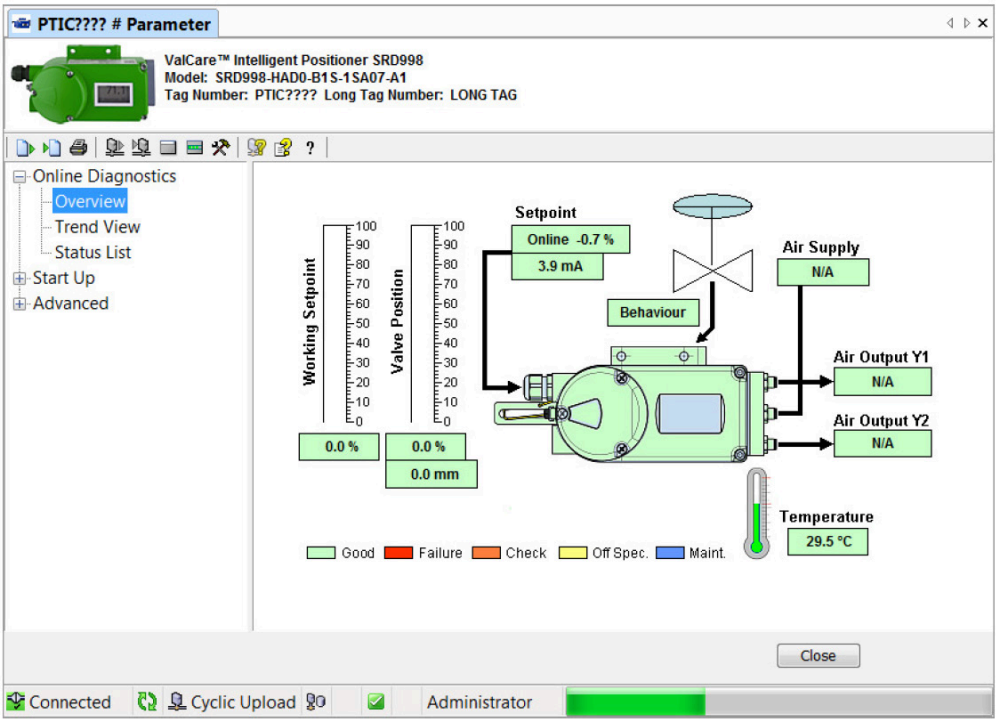
To download the DTM from the Schneider Electric website, contact Global Customer Support.

The DTM is fully certified for its interoperability, and has state-of-the-art presentation and diagnostic features.

(3) Higher voltage limits may be available upon request.
(4) Cable capacity and inductance see HART standard specifications (for example C < 100 µF).
(5) Impedance of other devices at the input (parallel or serial) must be within HART specifications.
(6) Applications without communication cannot exceed input capacitance parallel to the input not higher than 5 µF.
(7) Worst case conditions 4-20 mA, I/P Output with maximum current.

DD (Device Description) and EDD (Enhanced Device Description)

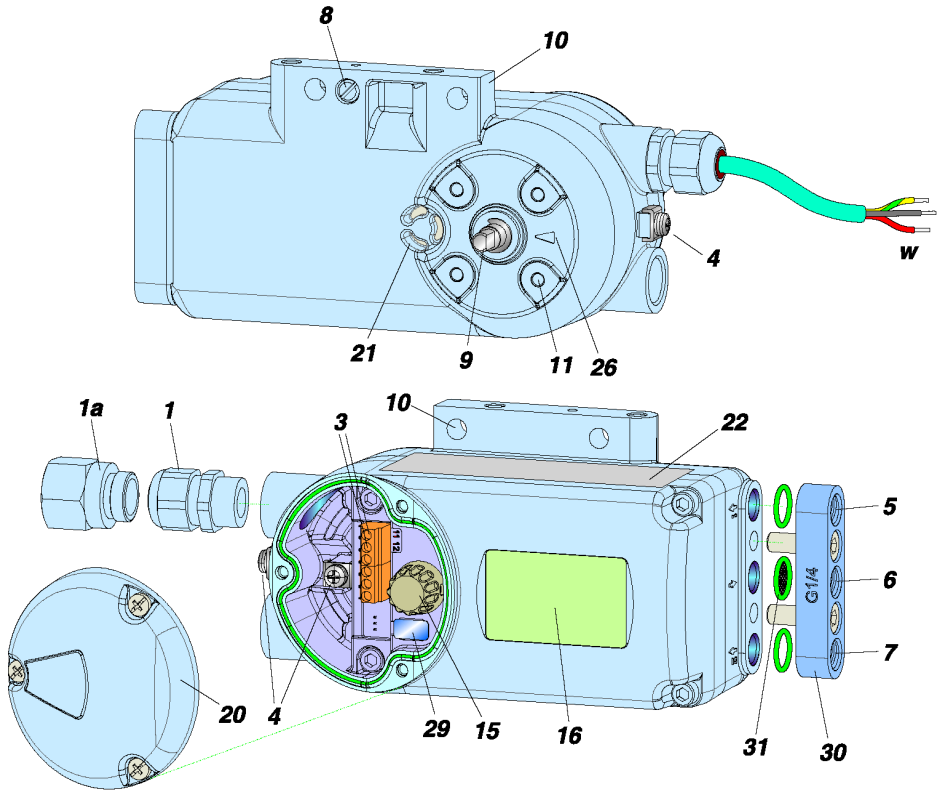
Figure 7 - Sample Intelligent Positioner SRD998



If the host system does not support FDT-DTM technology, you can contact Global Customer Support to download the DD and/or EDD.

Functional Designations

Figure 8 - Functional Designations



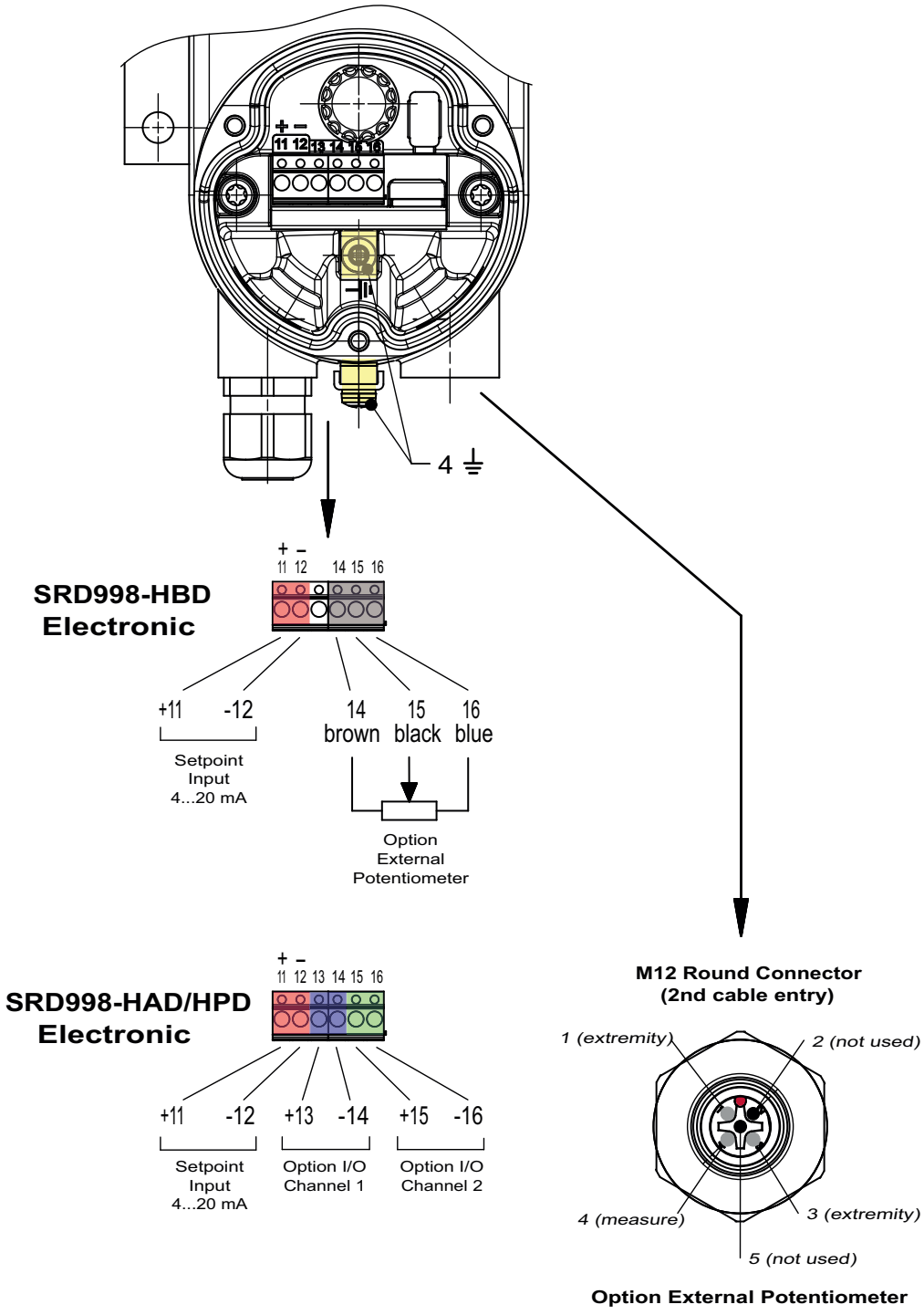
Number	Description
1	Cable gland
1a	Adapter, for example 1/2"-14 NPT
3	Terminal Block(8) (see Detail of the Terminal Block, page 29 for screw terminals: +11 and -12 for input loop and +13, -14, +15, and -16 for Universal In-Out Option Code 1)
4	Ground connection (inner and outer)
5	Output I (y1)
6	Air supply (s)
7	Output II (y2)
8	Direct attachment hole for output I (y1)
9	Feedback shaft
10	Connection manifold for attachment to linear (stroke) actuators
11	Connection base for attachment to rotary actuators
15	Turn rotary selector for Menu selection and press to confirm
16	LCD with true text in different languages
20	Cover for electrical connection compartment

(8) Test sockets 2 mm diameter, integrated in terminal block.

Number	Description
21	Air vent, dust and water protected per IP66
22	Data label
26	Arrow is perpendicular to feedback shaft at angle 0 degree
29	Plug for service connector under the lid (factory only)
30	Connecting manifold, G 1/4 or 1/4 NPT(9)
31	O-ring with filter, for air supply connection

(9) Not required when mounting a gauge manifold, or a direct mounted volume booster.

Figure 9 - Detail of the Terminal Block



Additional Equipment

Additional Inputs/Outputs: Code 1

Position Feedback 4-20 mA with Electrical Classification ATEX/ IECEx

Stroke/angle derived from positioner feedback: One output analog, galvanically separated, two-wire system according to DIN 19234, for external power supply

- Supply Voltage: DC 8 to 36 V
- Signal Range: 3.8 to 20.5 mA
- 0% and 100% configurable
- Device fault: < 200 µA
- Terminal for Position Feedback (channel 2): +15 and -16

NOTE: Feedback signal can be reversed (20 ≥ 4 mA).

Electrical Classification ATEX/IECEx for Additional Inputs/ Outputs: Code 1 (Certification number: IBExU20ATEX1044X)

For electrical ATEX/IECEx classification, see Electrical Certifications, page 22.

Certified under EU-Type Certificate of Conformity IBExU20ATEX1044X and IECEx Certificate of Conformity IECEx IBE 20.0005X.

Certified as intrinsically safe for use in hazardous areas with the maximum values as described in the Certificate of Conformity.

The circuits Channel 1 and Channel 2 are electrically separated from each other, from all other external circuits, and from Ground.

Remote Potentiometer: Code V, W, Y

The remote potentiometer is used in applications where high temperatures or vibration are present and can result in negative influences to the control. It can also be used in places not easy to reach, to help ensure easier handling of the unit, or for cylinders with large strokes. The positioner SRD998 is mounted far away from the valve or cylinder in a safe environment.

The Potentiometer unit is mounted on the valve or cylinder. The Potentiometer unit can be made by RMU998 or by an external potentiometer.

The external potentiometer unit must support a 3-wire system with approximately 5 kOhm resistance.

If the following requirements are fulfilled, the set up is insensitive to electrical disturbances caused by high electromagnetic fields, EMC, and HF radiation.

Cable length maximum:

- Model BD – 3m (9 ft)
- Models AD and PD – 10m (32 ft)

Cable Specifications:

- 3-wire twisted pair, shielded
- Shield needs to be connected on both ends to the internal ground
- Shield endings need to be kept very short when connected to ground
- An HF cable gland is not required

For more information about remote mounting, see PSS EVE0118.

NOTE: The functionality and certifications are only valid with Schneider Electric RMU998.

Electrical Classification ATEX/IECEx

For electrical ATEX/IECEx classification, see Electrical Certifications, page 22.

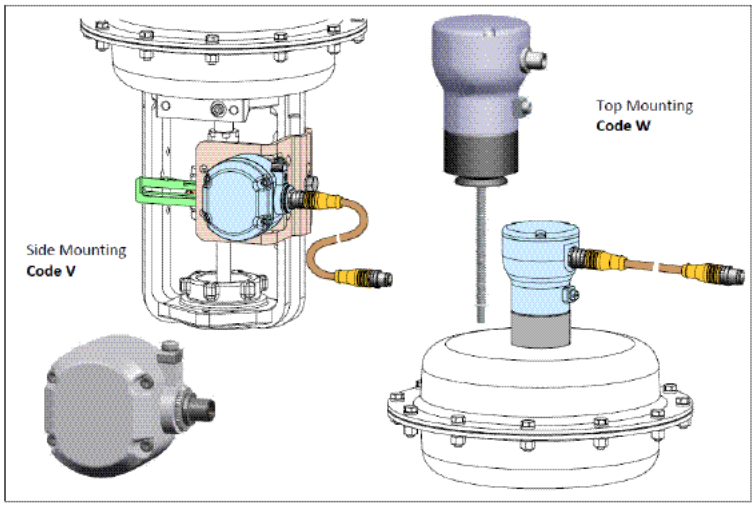
The RMU998 is classified as a Simple Apparatus according to IEC/EN 60079-11. It does not possess its own source of ignition and is suitable for connection to intrinsically safe circuits, such as the SRD998 Positioner. It does not require separate ATEX/IECEx certification or Ex marking when installed per these instructions.

For use in hazardous areas, the remote potentiometer interface is certified as Intrinsically Safe with the following maximum values:

Value	Basic Diagnostics Model (BD)	Advanced Diagnostics Model (AD) Premium Diagnostics Model (PD)
Uo	6 V	5.1 V
Io	130 mA	8 mA
Po	0.9 W	11 mW

The maximum length of the cable between the remote potentiometer and positioner is 3m (for Model BD) and 10m (for Models AD and PD).

Figure 10 - Remote Mounting Unit (RMU998)



Model Code - SRD998

NOTE: Contact Global Customer Support for information about option -X for a positioner with an ECEP.

Table 5 - Model Code for Intelligent Positioner SRD998

Code	Description
Model	
SRD998	Intelligent Positioner
Communication	
H	HART
Diagnostics Performance	
BD	Basic Diagnostics
AD	Advanced Diagnostics
PD	Premium Diagnostics
Electrical In-Out Option	
0	No In-Out Option
1	Universal In-Out Option
Version	
B	Single Acting
C	Double Acting
Pneumatic Performance	
0	Standard Pneumatic (6 bar max air supply)
1	Standard Flow - High Performance Pneumatic (10 bar max air supply)
2	High Flow - High Performance Pneumatic (Cv 0.58 – 10 bar max air supply)
3	Very High Flow - High Performance Pneumatic (Cv 0.85 – 10 bar max air supply)
Fail (in case of loss of power)	
S	Failsafe
Housing	
1	Aluminum
Mounting	
S	Standard
T	Direct mounting
V	Remote Mounting of positioner with side mounting potentiometer unit
W	Remote Mounting of positioner with top mounting potentiometer unit
Y	Remote Mounting of positioner w/o potentiometer unit (order potentiometer separately)
Pneumatic Connection	
A	1/4 NPT
B	1/4 G

Table 5 - Model Code for Intelligent Positioner SRD998 (Continued)

Code	Description
Gauges	
0	Without gauge
1	With 2 standard gauges for single acting(10)
2	With 2 Nickel plated gauges connection for single acting(10)
3	With 3 standard gauges for double acting(11)
4	With 3 Nickel plated gauges connection for double acting(11)
Electrical Connection	
7	M20x1.5
8	1/2 NPT (made with an adaptor)
Electrical Certification	
ZZ	Without certification
A1	**Intrinsically Safe according to ATEX/IECEx** II 2G Ex ia IIC T6...T4 Gb; II 1D Ex ia IIIC T100°C Da for Model BD II 2G Ex ia IIC T6...T4 Gb; II 1D Ex ia IIIB T100°C Da for Models AD and PD
A2	**Intrinsically Safe according to ATEX/IECEx** II 2G Ex ib IIC T6...T4 Gb; II 2D Ex ib IIIC T100°C Db for Model BD II 2G Ex ib IIC T6...T4 Gb; II 2D Ex ib IIIB T100°C Db for Models AD and PD
A3	**Intrinsically Safe according to ATEX/IECEx** II 3G Ex ic IIC T6...T4 Gc; II 3D Ex ic IIIC T100°C Dc for Model BD II 3G Ex ic IIC T6...T4 Gc; II 3D Ex ic IIIB T100°C Dc for Models AD and PD
B1	**INMETRO** Ex ia IIC T4/T6 Gb; Ex ia IIIC T100°C Da for Model BD Ex ia IIC T4/T6 Gb; Ex ia IIIB T100°C Da for Models AD and PD
B2	**INMETRO** Ex ib IIC T4/T6 Gb; Ex ib IIIC T100°C Db for Model BD Ex ib IIC T4/T6 Gb; Ex ib IIIB T100°C Db for Models AD and PD
B3	**INMETRO** Ex ic IIC T4/T6 Gc; Ex ic IIIC T100°C Dc for Model BD Ex ic IIC T4/T6 Gc; Ex ic IIIB T100°C Dc for Models AD and PD
C1	**CCC** Ex ia II C T4/T6 Gb; Ex ia IIIC T_{200}100°C Da for Model BD Ex ia II C T4/T6 Gb; Ex ia IIIB T_{200}100°C Da for Models AD and PD
C2	**CCC** Ex ib II C T4/T6 Gb; Ex ib IIIC T100°C Db for Model BD Ex ib II C T4/T6 Gb; Ex ib IIIB T100°C Db for Models AD and PD
C3	**CCC** Ex ic II C T4/T6 Gb; Ex ic IIIC T100°C Dc for Model BD Ex ic II C T4/T6 Gb; Ex ic IIIB T100°C Dc for Models AD and PD
N1	**NEPSI** Ex ia II C T4/T6 Gb; Ex ia IIIC T_{200}100°C Da for Model BD Ex ia II C T4/T6 Gb; Ex ia IIIB T_{200}100°C Da for Models AD and PD
N2	**NEPSI** Ex ib II C T4/T6 Gb; Ex ib IIIC T100°C Db for Model BD Ex ib II C T4/T6 Gb; Ex ib IIIB T100°C Db for Models AD and PD

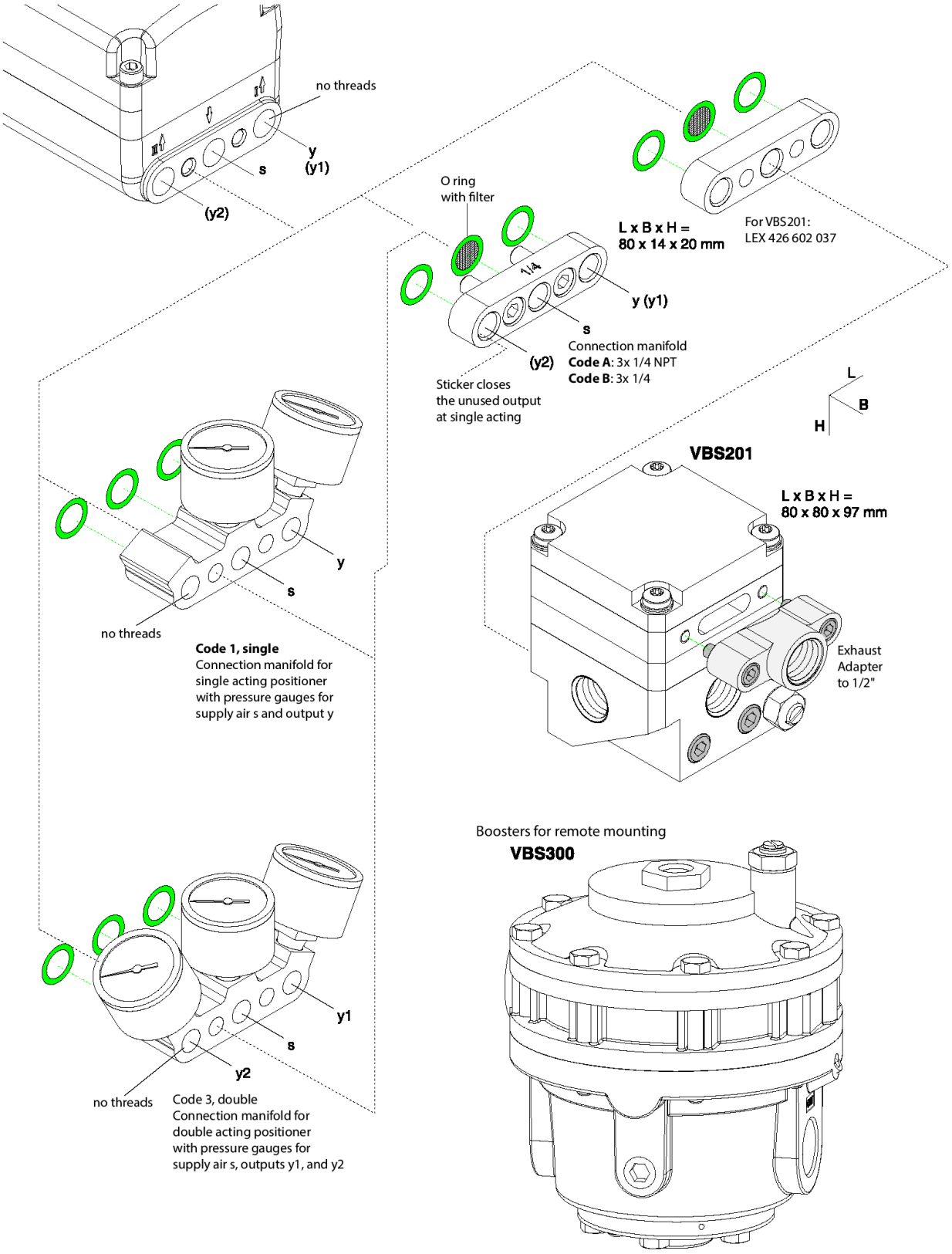
(10) Only to be ordered with single acting model code Version B.
(11) Only to be ordered with double acting model code Version C.

Table 5 - Model Code for Intelligent Positioner SRD998 (Continued)

Code	Description
N3	**NEPSI** Ex ic II C T4/T6 Gb; Ex ic IIIC T100°C Dc for Model BD Ex ic II C T4/T6 Gb; Ex ic IIIB T100°C Dc for Models AD and PD
K1	**KCs (Korean Certificate Safety)** II 2G Ex ia IIC T4/T6 Gb; II 1D Ex ia IIIC T100°C Da for Model BD only
K2	**KCs (Korean Certificate Safety)** II 2G Ex ib IIC T4/T6 Gb; II 2D Ex ib IIIC T100°C Db for Model BD only
K3	**KCs (Korean Certificate Safety)** II 3G Ex ic IIC T4/T6 Gc, II 3D Ex ic IIIC T100°C Dc for Model BD only
Options	
-L	Stainless Steel Label, fixed with wire
-Q	Approved for SIL2 / SIL3 application

Accessories for All Basic Devices

Figure 11 - Accessories for All Basic Devices



Model Code - Accessories

Table 6 - Model Code for Intelligent Positioner SRD998 Accessories

Code	Description
Model	
SRD998	Intelligent Positioner Accessories
Filter Regulators	
FRS02	Filter Regulator for –30°C to 70°C
FRS03	Stainless Steel (316) Filter Regulator
FRS04	High Flow Filter Regulator 1/2 inch/Aluminum
FRS05	High Flow Filter Regulator 1/2 inch/Stainless Steel
EBZG-FR1	Mounting Bracket for FRS02 or FRS03
EBZG-FR2	Orientable Mounting Bracket for FRS02 or FRS03
VG-91	Nipple for direct mounting Filter regulator 1/4 NPT both sides
EBZG-FR4	Mounting Bracket for FRS04
EBZG-FR5	Mounting Bracket for FRS05
VG-93	Nipple 1/2 NPT (FRS04/05 side) to 1/4 NPT (SRD998 side) for direct piping
Communication/Modem/DTM(12)	
MOD900	HART USB Modem (made by Ifak) with ATEX IS Certification
VALCARE	DTM for SRD Series for HART
EDC90	Service Modem
Booster Relay (in case of double acting, quantity 2 pieces)	
VBS200	Remote version for a positioner
VBS201	Integral volume booster for SRD991, SRD960, SRD998, and SRI990 (directly flanged to positioner)
VBS300	Booster Cv7 - Alum Housing - Remote mounting
VBS310	Booster Cv7 - SS Housing - Remote mounting
Cable Gland	
BUSG-K6	Cable Gland, M20x1.5 Plastics, Color Gray/Black
BUSG-K7	Cable Gland, M20x1.5 Plastics, Color Blue
BUSG-K9	Cable Gland, M20x1.5 Plastics, Color White
BUSG-S6	Cable Gland, M20x1.5 Stainless Steel
Adapter	
AD-A5	Adapter (Brass With Nickel Coating) M20x1.5 to 1/2-14 NPT (Internal Thread)
AD-A6	Adapter (SS) M20x1.5 to 1/2-14 NPT (Internal Thread)

(12) Communication/modem/DTM for VALcare is available for download on the Schneider Electric website.

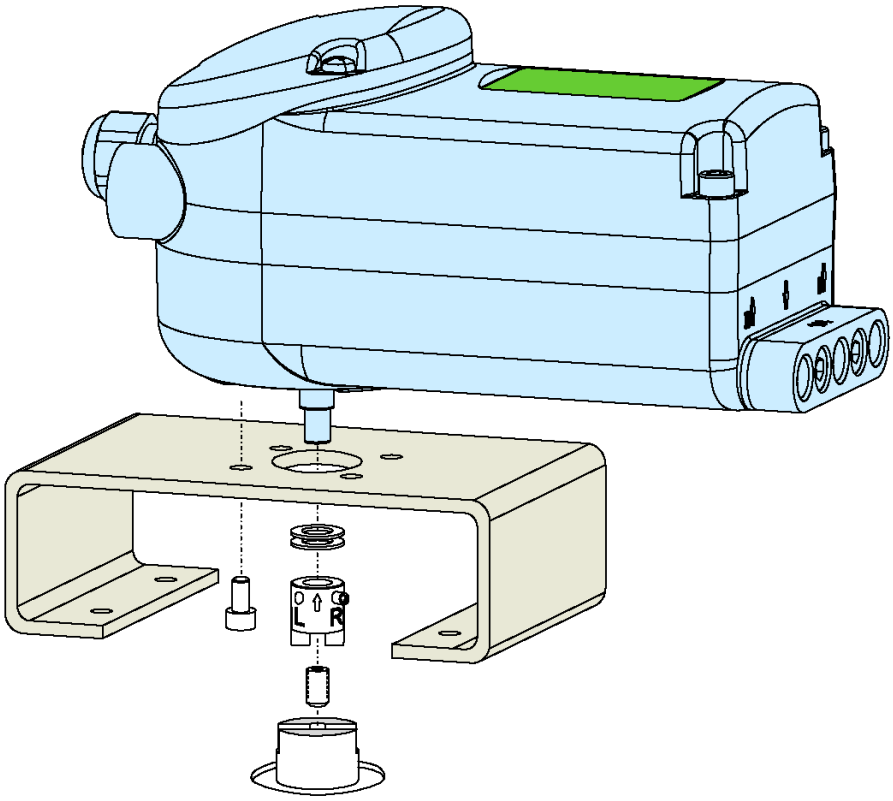
Table 6 - Model Code for Intelligent Positioner SRD998 Accessories (Continued)

Code	Description
EBZG	**Attachment Kits**
-H	For diaphragm actuators with casting yoke according to NAMUR (including standard Couple lever)
-H1	For diaphragm actuators with casting yoke according to NAMUR (including standard Couple lever) - Compact
-H6	Compact stainless steel bracket according to NAMUR
-K	For diaphragm actuators with pillar yoke according to NAMUR (including standard Couple lever)
-K1	For diaphragm actuators with pillar yoke according to NAMUR (including standard Couple lever) - Compact
-E1	For FoxTop / FoxPak
-R	For mounting to rotary actuators according to VDI/VDE 3845 (without bracket)
-C1	Brackets VDI/VDE 3845 (A = 80 mm / 3.15 in; B = 20 mm / 0.79 in)
-C2	Brackets VDI/VDE 3845 (A = 80 mm / 3.15 in; B = 30 mm / 1.18 in)
-C3	Brackets VDI/VDE 3845 (A = 130 mm / 5.12 in; B = 50 mm / 1.97 in)
-C4	Brackets VDI/VDE 3845 (A = 130 mm / 5.12 in; B = 30 mm / 1.18 in)
-C5	Universal Brackets VDI / VDE 3845 (A = 80 or 130 mm; B=20 or 30 or 50 mm)
EBZG	**Couple Lever**
A	Standard (stroke max. 80 mm)
-A1	Extended (stroke max. 260 mm)
-A2	Reduced (stroke < 8 mm)
-A3	Fold feedback lever (stroke 8 to 70 mm)
-A4	Short stroke (stroke 8 to 35 mm)
-A5	Couple Lever Folded (stroke special)
-B	Extended (stroke max. 120 mm)
SRXG	**Carrier bolt**
-A	Carrier bolt extra short 23 mm
-B	Adjustable carrier bolt 20 to 37 mm
-C	Carrier bolt 38 mm
-D	Carrier bolt 47 mm
-E	Carrier bolt 57 mm
-F	Carrier bolt 65 mm
-G	Adjustable carrier bolt with fixing system for stem diameter up to 21 mm
-H	Adjustable carrier bolt with fixing system for stem diameter up to 34 mm
-I	Carrier Bolt 80 mm
-J	Adjustable carrier bolt for thread 3/8”
-K	Adjustable carrier bolt for thread 5/16”
-M	Adjustable carrier bolt with fixing system centered for stem diameter up to 64 mm
-G1	Adjustable carrier bolt with fixing system centered for stem diameter up to 21 mm
-G2	Adjustable carrier bolt with fixing system centered with extension up to 80 mm for stem diameter up to 21 mm

Mounting to Rotary Actuators

Figure 12 - Delivery of Bracket by Actuator Manufacturer

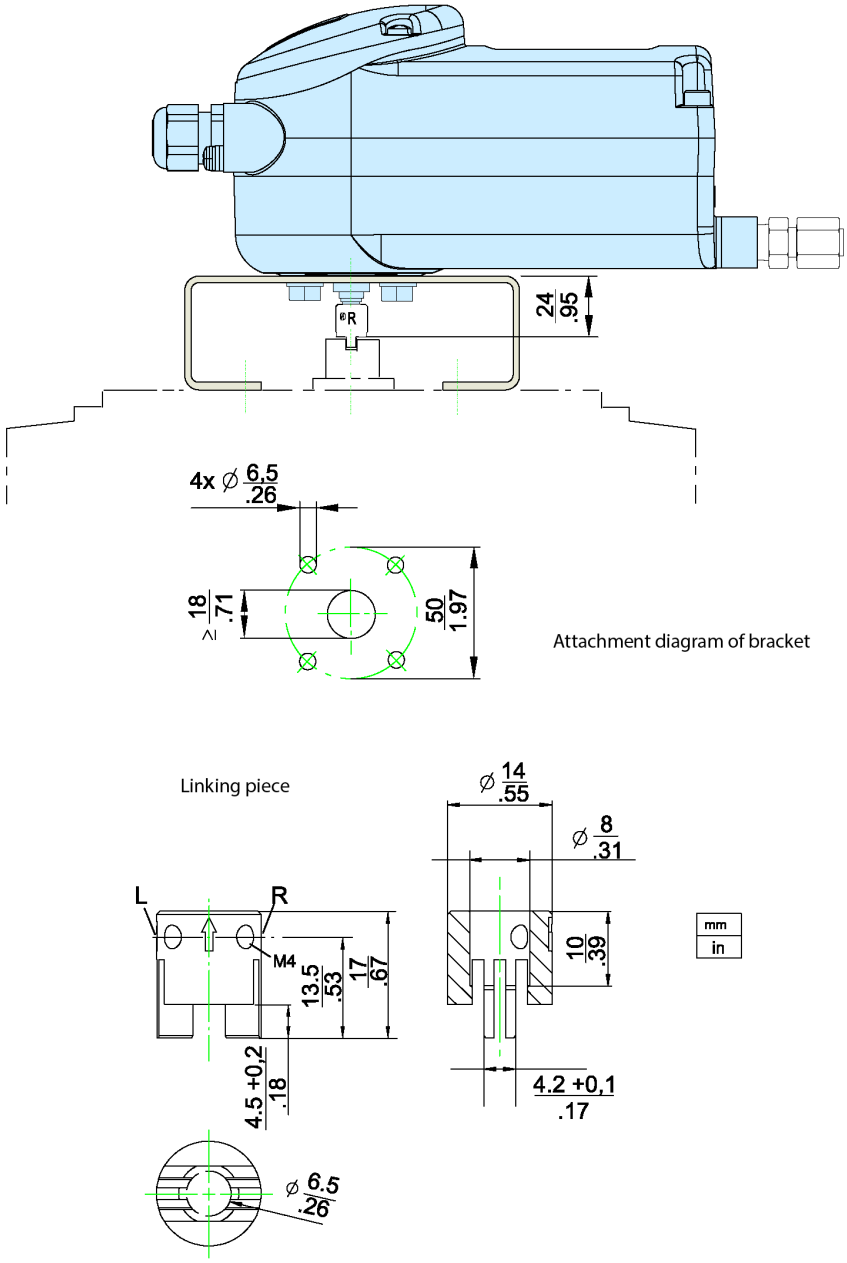
Bracket available from Schneider Electric. Contact Global Customer Support.



Dimensions — Nominal

All dimensions in diagrams are shown in millimeters over inches (mm/in).

Figure 13 - Attachment to Rotary Actuator



Components of Attachment Kits (Samples)

Figure 14 - Components of Attachment Kit

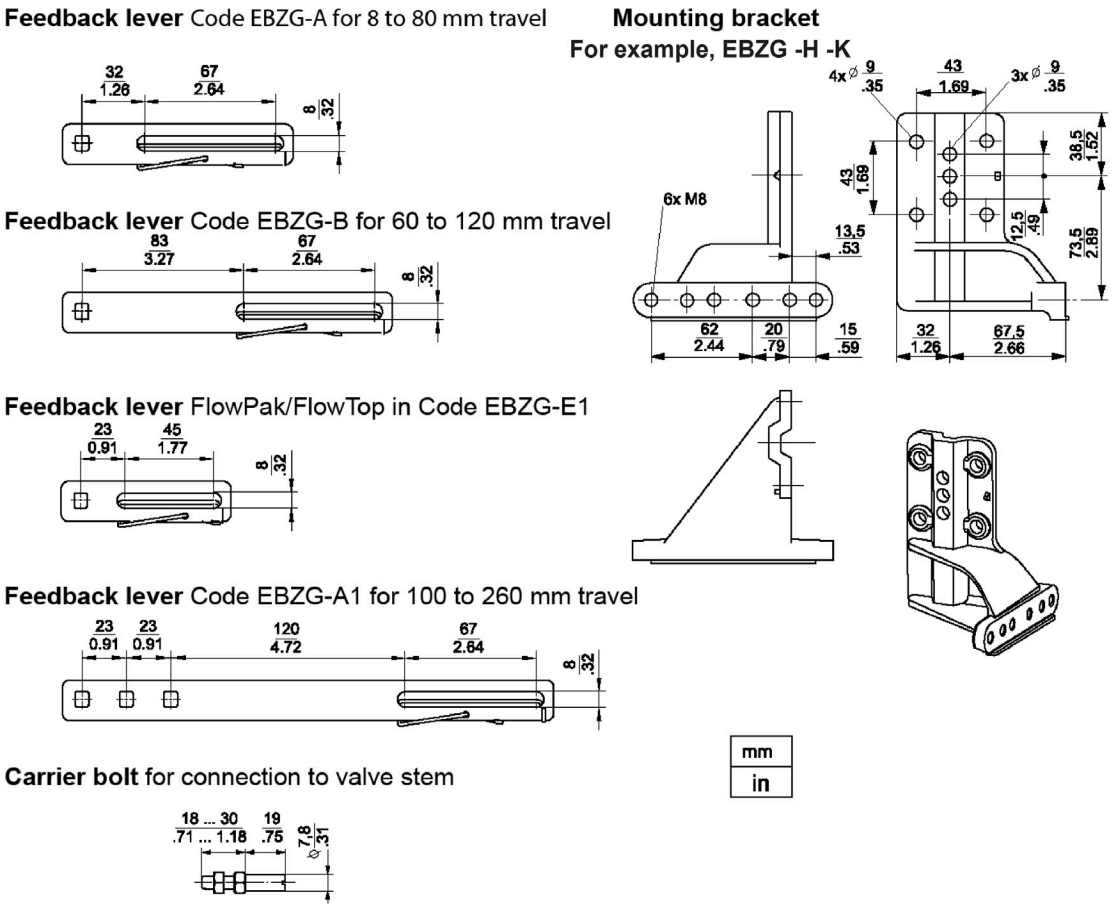


Figure 15 - Dimensions with Manifold

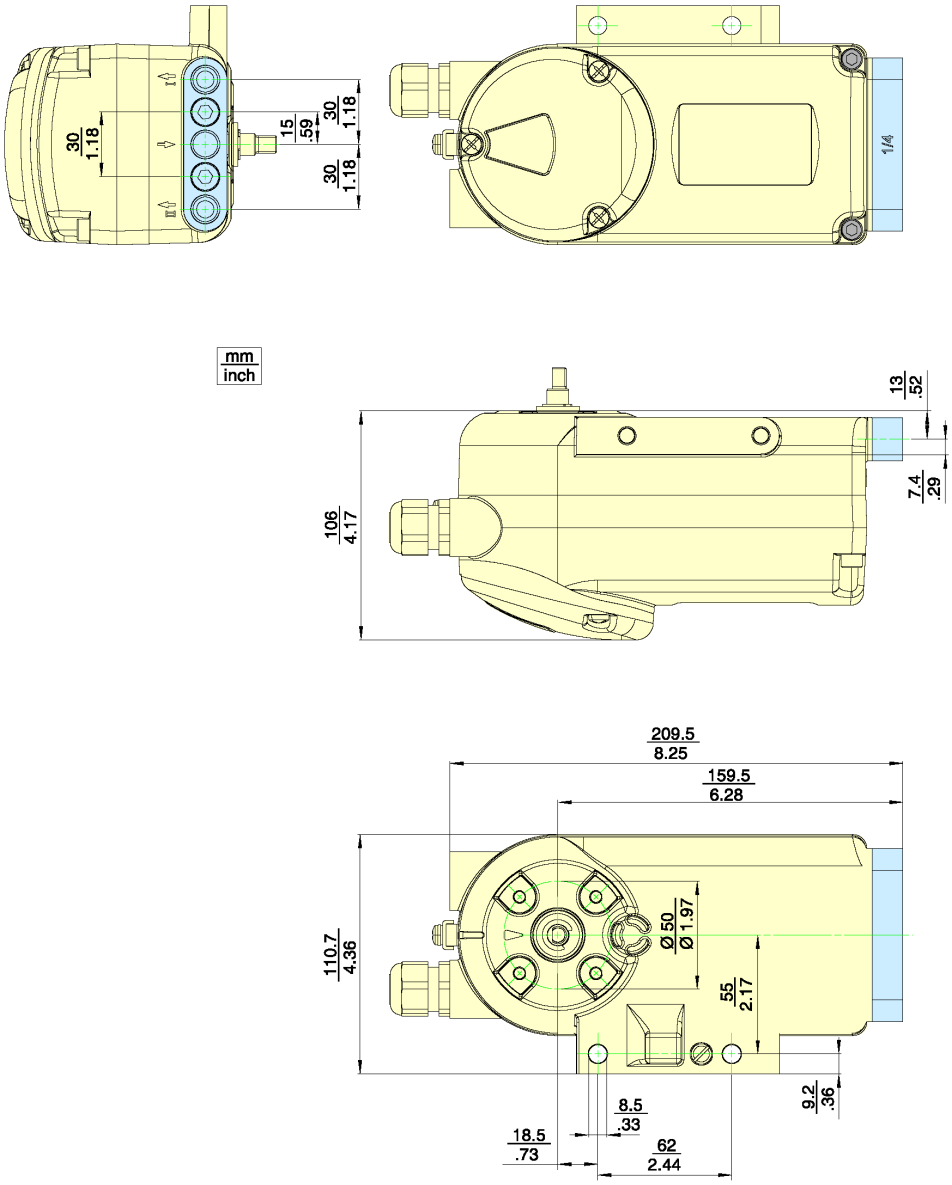
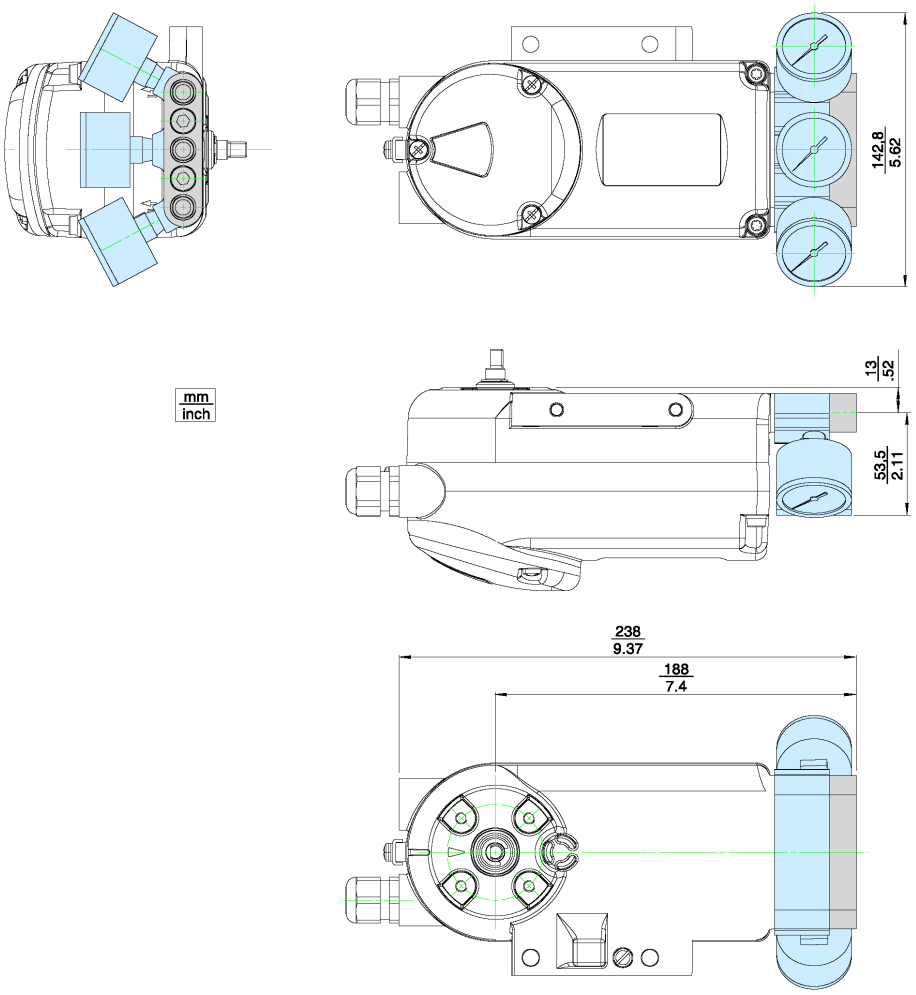


Figure 16 - Dimensions with Gauges and Manifold



Typical Mounting

Figure 17 - SRD998 with Remote Mounting Unit RMU998-V

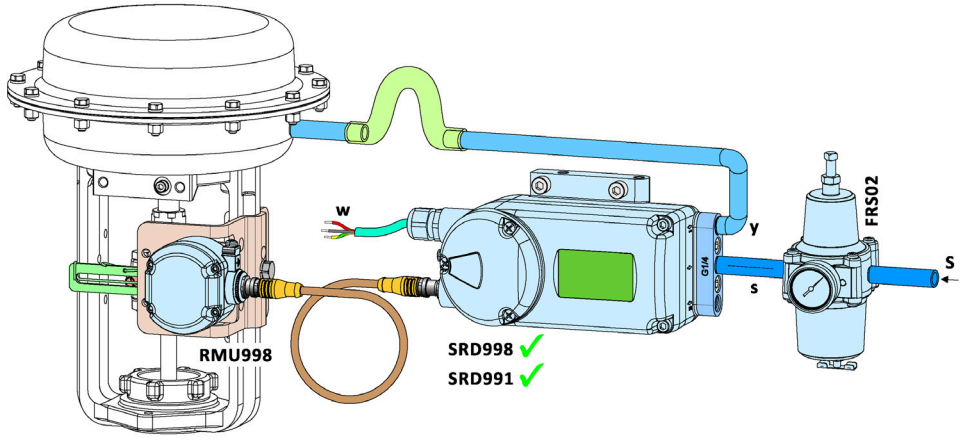
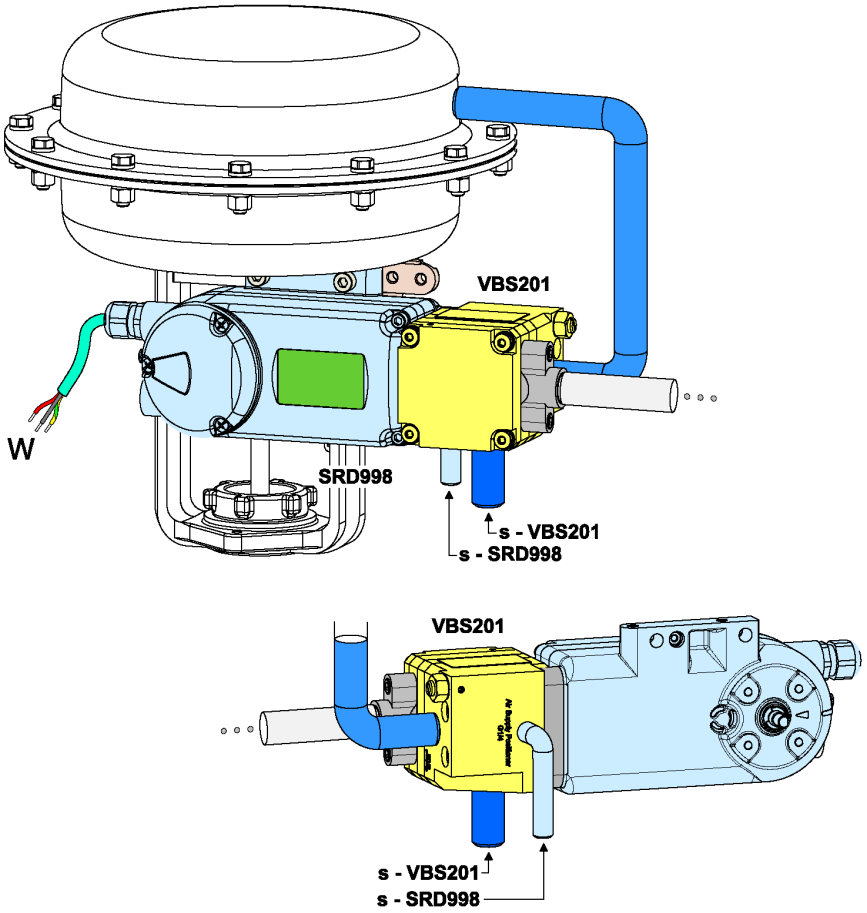


Figure 18 - SRD998 with Booster VBS201, Directly Flanged to SRD998 with Connection to an Exhaust Collecting System



Related Documents

Find the latest version of these documents on the Schneider Electric website, https://www.se.com.

MI EVE0108	*SRD998 Intelligent Positioner with HART Communication User Guide*
MI EVE0108-DTM	*ValCare™ Valve Monitor DTM for SRD998 Intelligent Positioner User Guide*
MI EVE0108-EX	*SRD998 Intelligent Positioner with HART Communication Safety Requirements*
PSS EVE0602	*Volume Booster Series - VBS200/201/222/224*
PSS EVE0603	*Volume Booster Series - VBS300(-G)/VBS310(-G)*

Proposition 65

WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

PSS EVE0108, Rev E