

SRD998 Intelligent Positioner with HART Communication



The intelligent positioner SRD998 is designed to operate pneumatic valve actuators and can be operated from control systems (e.g. the Foxboro I/A Series System and Foxboro Evo™), controllers or PC-based configuration and operation tools such as the FDT/DTMs VALcare™. The positioner is available with HART 7 communication protocol. The extra large multi-lingual full text graphical-LCD, in conjunction with the rotary selector, allows a comfortable and easy local configuration and operation. For installations in contact with explosive atmospheres certificates are available.

MAIN FEATURES

Intelligent

- Auto-start with self-calibration
- Self diagnostics, status- and diagnostic messages
- DTM for valve diagnostics and predictive maintenance
- Easy local operation with the rotary selector
- Extra large multi-lingual full text graphical LCD
- With 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 ° (up to 120 ° on request)
- Mounting onto any linear or rotary actuator
- Supply air pressure up to 10 bar (145 psig)
- Single or double acting
- Protection class IP 66
- Explosion protection: Intrinsic Safety according to ATEX / IECEx, INMETRO, NEPSI, PESO, CNS, EAC

Equipment should be installed, operated, serviced, and maintained only by qualified personnel.

No responsibility is assumed by Schneider Electric for any consequences arising from the use of this material.

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Please Note

Electrical equipment should be installed, operated, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

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- With communication HART 11

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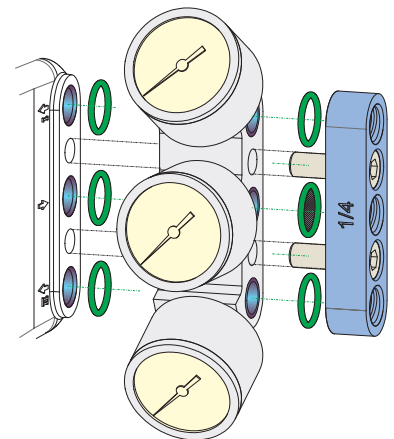
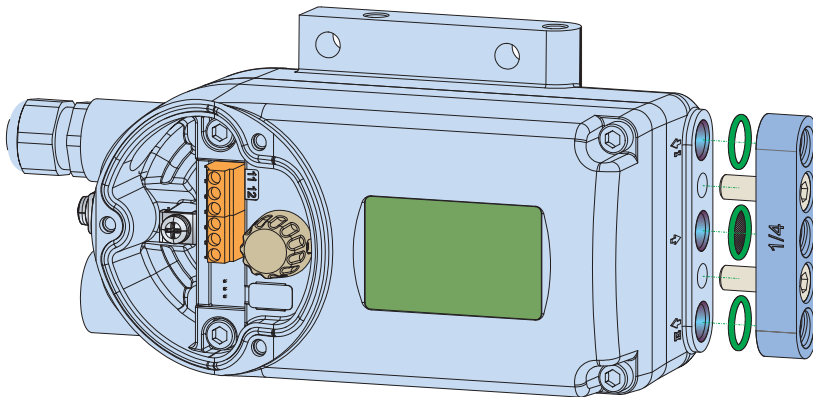
ACCESSORIES for mounting to the positioner:

- Booster • Manifolds • Gauge manifolds 15

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DESIGN



Thanks to 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, a single- or double-acting pneumatic amplifier is used.

Codes BxS: single acting

Codes CxS: double acting

Single-acting pneumatics have versions B0S, B1S and B2S that differ in air flow, see page 5.

For the double-acting pneumatics, there are the versions C0S, C1S and C3S, which differ in the air performance, see page 5.

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

TECHNICAL DATA

Supply

Supply air pressure

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

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

The use of a **filter regulator** for the air supply of positioner is strongly recommended. 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 shall be 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 shall be 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 ^{1) 2)}

- 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 acc. 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, the use of *double* acting positioners onto *single* acting actuators is not recommended.

Usability

SRD998 Pneumatic Type		SRD998 Pneumatic Technique	Recommended Filter regulator	Booster, if required
single acting	B0S	Diaphragm Amplifier	FRS923 / FRS02 / FRS04	VBS200 / VBS201 / VBS300 Series
double acting	C0S	Diaphragm Amplifier	FRS923 / FRS02 / FRS04	VBS200 / VBS300 Series
single acting	B1S	Diaphragm Amplifier	FRS923 / FRS02 / FRS04	VBS200 / VBS201 / VBS300 Series
single acting	B2S	Diaphragm Amplifier	FRS04	VBS200 / VBS201 / VBS300 Series
double acting	C1S	Spool Valve	FRS04	Booster not recommended
double acting	C3S	Spool Valve	FRS04	Booster not recommended

1) Data measured according to VDI/VDE 2177 and IEC 61514-2

2) With 90 ° angle, rotary actuator

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		NI/h
to vent actuator	5000		NI/h
Pneumatic Code B1S (single acting - Standard Flow, High Performance Pneumatic)			
to pressurize actuator	7000		NI/h
to vent actuator	5000		NI/h
Pneumatic Code B2S (single acting - High Flow, High Performance Pneumatic) Cv 0.58			
to pressurize actuator	21500		NI/h
to vent actuator	15000		NI/h
Pneumatic Code C0S (double acting - Standard Flow, Standard Pneumatic)			
to pressurize actuator	5000		NI/h
to vent actuator	3750		NI/h
Pneumatic Code C1S (double acting - High Flow, High Performance Pneumatic)			
to pressurize actuator	7000		NI/h
to vent actuator	7000		NI/h
Pneumatic Code C3S (double acting - Very High Flow, High Performance Pneumatic) Cv 0.85			
to pressurize actuator	33500		NI/h
to vent actuator	33500		NI/h

Recommended pneumatics, depending on the actuator size:

For actuators < 1 dm³ use the C0S, C1S, B0S, or B1S

For actuators > 1 dm³ use the B2S, or C3S

Pneumatic Performance - Air consumption ¹⁾ [NI/h]

Air consumption at steady state:	3 bar		
Pneumatic Code:			
B0S (single acting - Standard Flow)	250		NI/h
B1S (single acting - Standard Flow, High Performance Pneumatic)	400		NI/h
B2S (single acting - High Flow, High Performance Pneumatic)	400		NI/h
C0S (double acting - Standard Flow)	335		NI/h
C1S (double acting - High Flow, High Performance Pneumatic)	400		NI/h
C3S (double acting - Very High Flow, High Performance Pneumatic)	400		NI/h

1) Measured according ANSI / ISA-75.13.01-2013

BOOSTERS for increased air flow

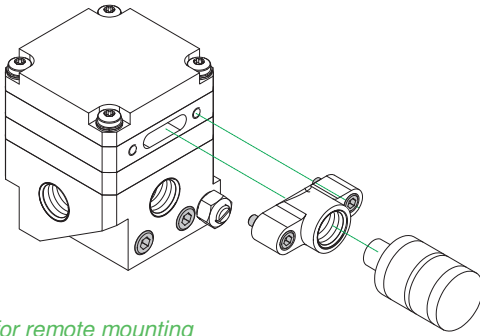
Volume Booster Series (to order as accessory)

For large actuators or to reduce action time, a volume booster may be necessary.

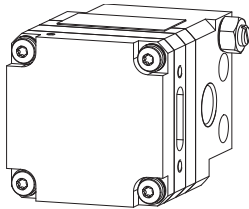
VBS200 / VBS201

Volume boosters with Cv1.4 and pneumatic connection 1/2"
Optional with exhaust collector, or Silencer

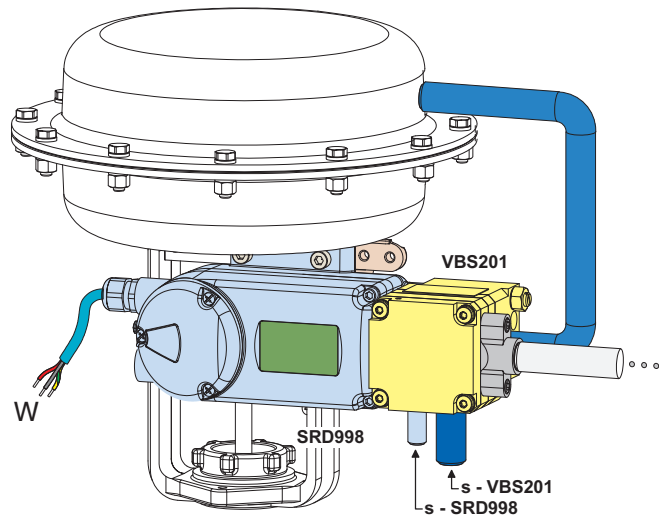
VBS201 directly flanged to the positioner, optional with Silencer



VBS200 for remote mounting



Examples for mounting

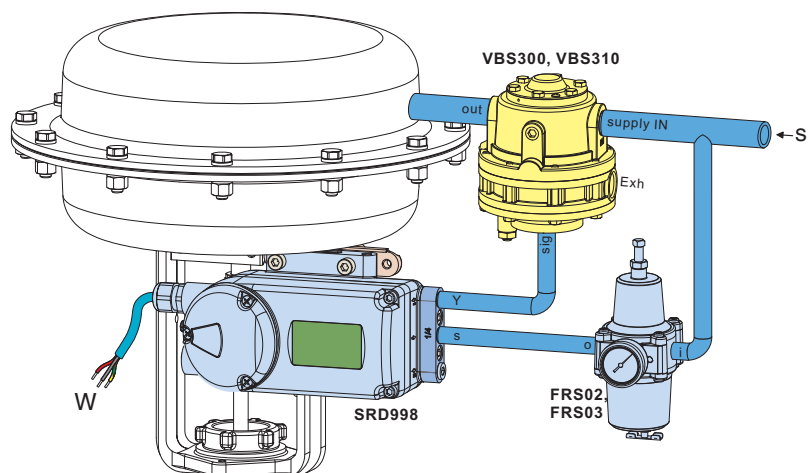
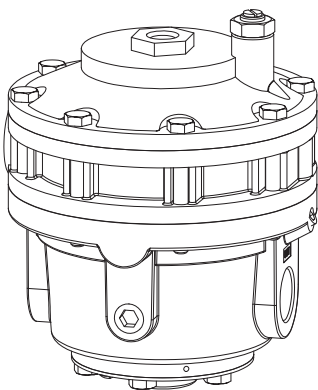


For more information please consult PSS EVE0602.

VBS300 / VBS310

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

VBS300 in Aluminum, VBS310 in Stainless Steel 316



For more information please consult PSS EVE0603.

FUNCTIONAL SPECIFICATIONS

Features

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 a perfect adjustment and optimization to the actuator possible without additional manual settings! Several Autostart modes are available (details see on next pages).

Operation and Configuration

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

Local..... with local rotary selector
Display..... multi lingual graphic LCD

The positioner contains the following menu languages:

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

Manual local and remote settings:

- Actuator mode linear or rotary actuator
 - Linear valve left or right mounted
 - Rotary actuator 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
- Control parameters Determined during Autostart.
- Working range freely adjustable (for indication on LCD)
- Manual adjustment of P-gain, I-time, D-time, T63-time, and dead band
- Manual operation Manual input of set point to drive the valve in steps of 12.5 % or 1 %
- Pneumatic test Function to test the pneumatic output
- LCD orientation Standard, and upside down

Software supported configurations:

- By means of Hand Held Terminal (HART)
- PC by means of VALcare DTM Software
- I/A Series System, Foxboro Evo and other DCSs

Issue handling

- In case of Single Acting, Safety position at
- Air supply loss pressure y1 = zero
 - Electric power loss pressure y1 = zero
 - Electronics issue pressure y1 = zero
- In case of Double Acting or spool valve amplifier, safety position at
- Air supply loss pressure y1 = zero; y2 = zero
 - Electric power loss pressure y1 = zero; y2 = full air supply pressure
 - Electronics issue pressure y1 = zero; y2 = full air supply pressure

Diagnostic To monitor the high performance of the positioner, we offer several diagnostic utilities:

	Basic Diagnostics	Advanced Diagnostics
Configuration data surveillance	Yes	Yes
Input current adjustment surveillance	Yes	Yes
A/D converter surveillance	Yes	Yes
Position value surveillance	Yes	Yes
Connection to I/P converter surveillance	Yes	Yes
Potentiometer surveillance	Yes	Yes
Angle adjustment surveillance	Yes	Yes
Surveillance of reaching the set point in a specific time	Yes	Yes
Temperature limit min or max surveillance	Yes	Yes
Autostart surveillance	Yes	Yes
Custom Characterization		Yes
Auto diagnostic		Yes
Alarm Management		Yes
Alarm Output for Switching (with Option board)		Yes
Status List acc. NE107		Yes
Position History		Yes
Response History		Yes
Step Response Analyze		Yes

PHYSICAL SPECIFICATIONS (common data for all versions)

Mounting

Attachment to stroke actuators

- for casting yoke
acc. to IEC 534-6 (NAMUR) with attachment kit EBZG-H
or -H1

- for pillar yoke
acc. to IEC 534-6 (NAMUR) with attachment kit EBZG-K
or -K1

Stroke range with feedback lever:

- standard (EBZG-A) 8 to 70 mm / 0.31 to 2.76 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

acc. to VDI/VDE 3845

with attachment kit EBZG-R
- Further attachment kits see ModelCodes page 15/16
- Mounting orientation see attachment dimensions
starting from page 17

Materials

Housing and covers Aluminum Alloy No. 230
(GD-ALSi12) Polyester Powder coated
Sealings between coverssilicone elastomer and
silicone core with Ag/Cu particles
LCD Window Polycarbonate,
U.V. stabilized
External Screws..... Stainless Steel V2A 1.4301
Motherboard Coated with protective resin
All moving parts of feedback
system (e.g. 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..... approx. 2.1 kg (4.7 lbs)
B2S approx. 2.2 kg (4.9 lbs)
C0S approx. 2.3 kg (5.1 lbs)
C3S approx. 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
Wire cross section 0.3 to 2.5 mm² (AWG 22-14)
max torque 0.6 Nm

Ambient conditions

Operating conditions acc. to IEC 654-1

The device can be operated at a class Dx location.

Ambient temperature

Operation ¹⁾ -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 may rise
above 80 °C / 176 °F, we recommend a sun shade.

Storage conditions

acc. 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

acc. to IEC 60529 IP 66

acc. to NEMA..... Type 4X

Electromagnetic compatibility EMC

Operating conditions..... industrial environment

Immunity according to

EN 61326 fulfilled

IEC 61326 fulfilled

EN 61000-6-2 fulfilled

Emission according to

EN 61326

Class A and Class B fulfilled

EN 61000-6-4 fulfilled

EN 55011 Group 1,

Class A and Class B fulfilled

NAMUR recommendation

EMV NE21 fulfilled

SAFETY REQUIREMENTS

CE label

Electromagnetic

Compatibility 2014 / 30 / EC

Low-voltage regulation not applicable

See also Declaration of Conformity.

Safety

According to EN 61010-1

(or IEC 1010-1)..... Safety class III

Overvoltage Category I

External fuses..... Limitation of power supplies

for fire protection shall be observed acc. to EN 61010-1,
appendix F (or IEC 1010-1).

1) Details see Certificates of Conformity.

2) Below -20 °C the LCD reacts only slowly;
above +70 °C the background becomes dark
(no damage when back into -20 to +70 °C range)

Electrical classification ^{1) 2)}

See Certificates of Conformity EX EVE0108 A

Intrinsically Safe according to ATEX / IEC Ex

Code A1, A2, or A3

A1 = II 2 G Ex ia IIC T4/T6 Gb / II 1 D Ex ia III C T100 °C Da

or

A2 = II 2 G Ex ib IIC T4/T6 Gb / II 2 D Ex ib III C T100 °C Db

or

A3 = II 3 G Ex ic IIC T4/T6 Gc / II 3 D Ex ic III C T100 °C Dc

For use in hazardous areas in certified safe circuits with the following maximum values:

Pi	Ui	Ii	T4	T6
900 mW	30 V	130 mA	-40 °C to 80 °C	
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 acc. to IEC 60529.. IP 66

Other electrical certifications in progress

1) With appropriate order only

2) National requirements shall be observed

SRD998 with HART communication

SRD998-Hxxxx

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 DC 12 to 36 V ¹⁾ (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
 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
 Cable capacity and inductance see HART standard
 specifications (e.g. C < 100 nF).
 Impedance of other devices at the input (parallel or serial)
 shall be within HART spec.
 Applications without communication require not to exceeding
 input capacitance parallel to the input not higher than 5 µF.
 Start-up time approx. 3 sec
 Interruption time without power down . . . typ. 8 ms ²⁾

1) On request we can specify higher voltage limits
 2) Worst case conditions 4-20 mA, I/p-output with max. current

Configuration

The SRD998 can be configured via HART by any host system whatever is a PC with a HART Modem, Hand Held Terminal or a DCS.

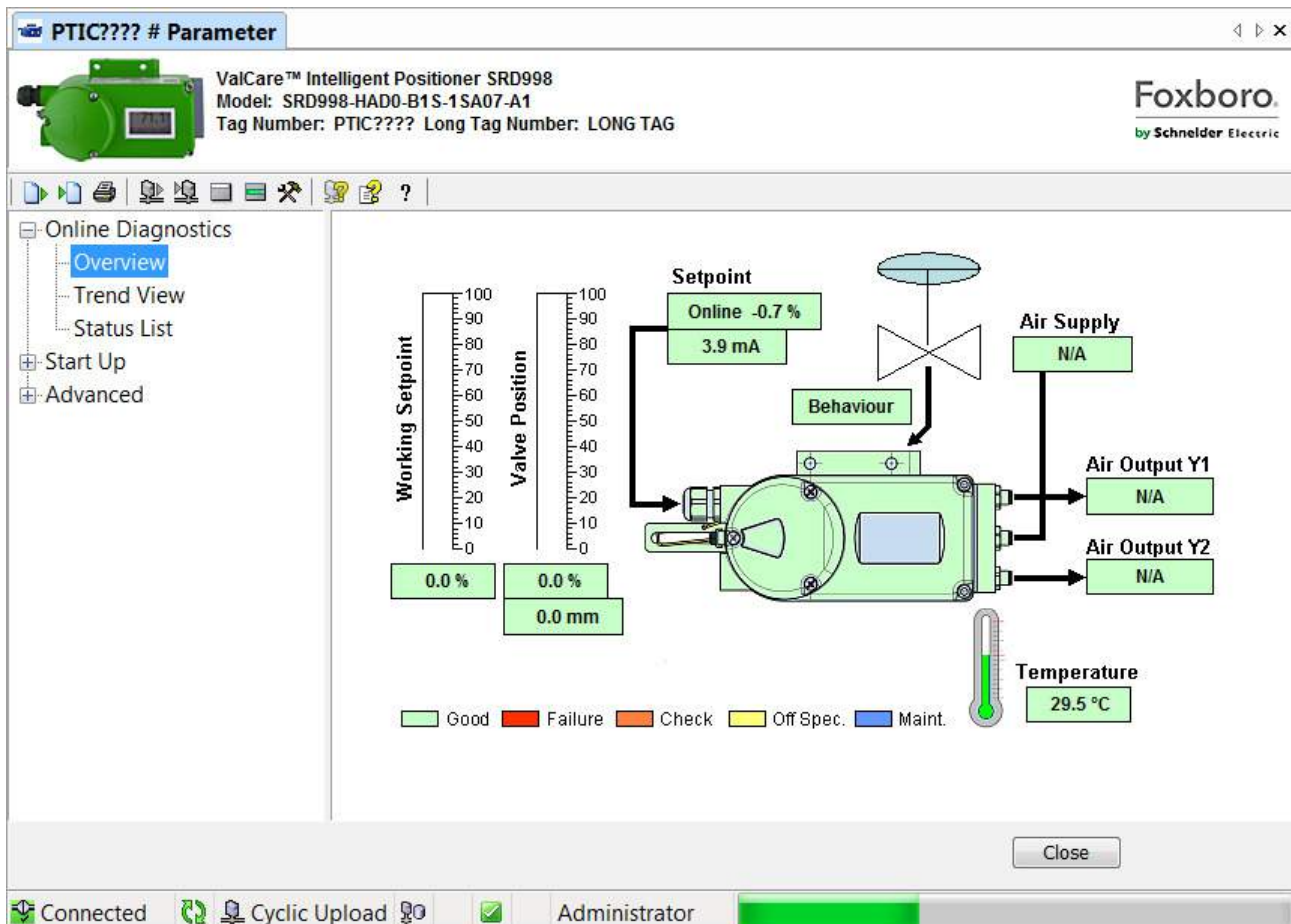
LOCAL (by means of rotary selector and LCD display)
 See page 6

DTM (Device Type Manager)
 We are a leading company in term of FDT-DTM technology
<https://www.schneider-electric.com/en/download/range/63514-Valve%20Positioners/?docType=4889330-DTM+files>

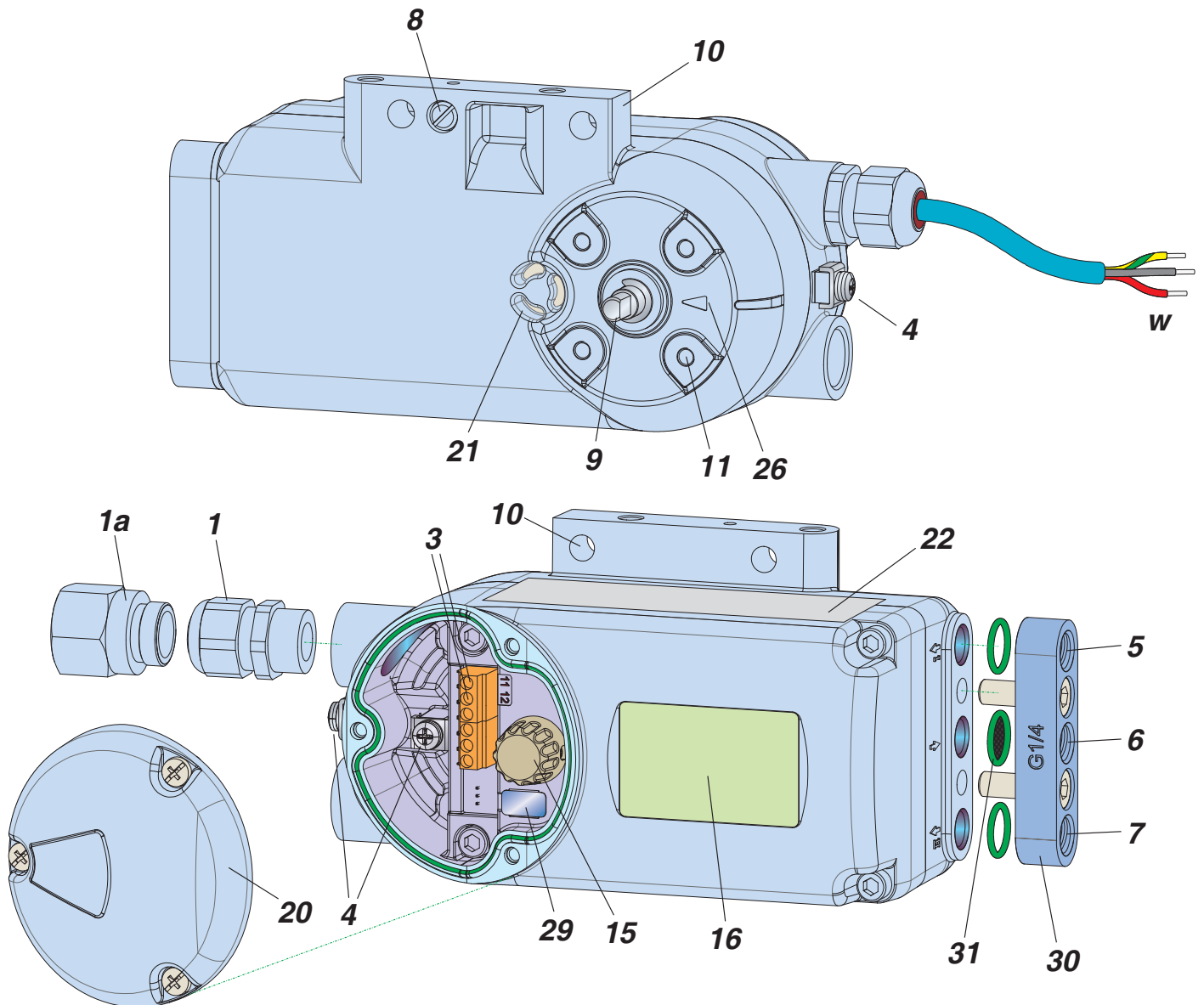
Therefore we provide a DTM fully certified for its interoperability and with the state-of-the-art presentation and diagnostics features.
 The DTM can be downloaded from our homepage.

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

In case the host system is not supporting the FDT-DTM technology, you can download the DD and/or EDD from our homepage.



FUNCTIONAL DESIGNATIONS



- | | |
|--|--|
| 1 Cable gland | 11 Connection base for attachment to rotary actuators |
| 1a Adapter, e.g. 1/2"-14 NPT | 15 Rotary selector for select Menu, and press to confirm |
| 3 Screw terminals (11 / 12) for input (w) | 16 LCD with true text in many languages |
| 4 Ground connection (inner and outer) | 20 Cover for electrical connection compartment |
| 5 Output I (y1) | 21 Air vent, dust and water protected |
| 6 Air supply (s) | 22 Data label |
| 7 Output II (y2) | 26 Arrow is perpendicular to shaft 9 at angle 0 degree (to center the coupling and feedback lever at mounting) |
| 8 Direct attachment hole for output I (y1) | 29 Service only |
| 9 Feedback shaft | 30 Connecting manifold, G 1/4 or 1/4 NPT |
| 10 Connection manifold for attachment to stroke actuators | 31 Component O-ring with filter, for air supply |

MODEL CODES SRD998

180719

Intelligent Positioner SRD998 – Communication	
HART	H
Profibus PA	(a) P
FOUNDATION Fieldbus H1	(a) Q
Diagnostics Performance	
Basic Diagnostics	BD
Advanced Diagnostics	AD
Premium Diagnostics	(a) PD
Partial Stroke Testing & Shutdown	(a) SA
Partial Stroke Testing & SOV Monitoring (a) ..	SB
Electrical In-Out Option	
No In-Out Option	0
Universal In-Out Option	(a) 1
Version	
Single acting	B
Double acting	C
Pneumatic Performance	
Standard Pneumatic (max 6 bar air supply)	0
Standard Flow - - High Performance Pneumatic (10 bar max air supply)	1
High Flow - - - - High Performance Pneumatic (10 bar max air supply)	2
Very High Flow - High Performance Pneumatic (CV 0.85 – 10 bar max air supply)	3
Fail in case of lost of power	
Fail safe	S
Fail freeze	(a) F
Housing	
Aluminum	1
SST (316)	(a) 2
Aluminum Ex d	(a) 3
SST (316) Ex d	(a) 4
Mounting	
Standard	S
For direct mounting	T
For VDI/VDE 3847	(a) U
For remote mounting of positioner with <u>side</u> mounting potentiometer unit	V
For remote mounting of positioner with <u>top</u> mounting potentiometer unit	W
For remote mounting of positioner w/o potentiometer unit (order pot. separately) ..	Y
Pneumatic Connection	
1/4 NPT	A
1/4 G	B
1/4 NPT with tapped exhaust ..	(a) C
1/4 G with tapped exhaust	(a) D
Gauges	
Without gauge	0
With 2 standard gauges for single acting	(b) 1
With 2 Nickel plated gauges connection for single acting	(b) 2
With 3 standard gauges for double acting	(c) 3
With 3 Nickel plated gauges connection for double acting	(c) 4
Electrical Connection	
M20x1.5	7
1/2 NPT (made with an adaptor)	8

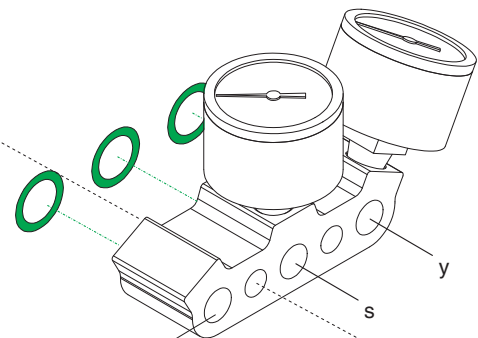
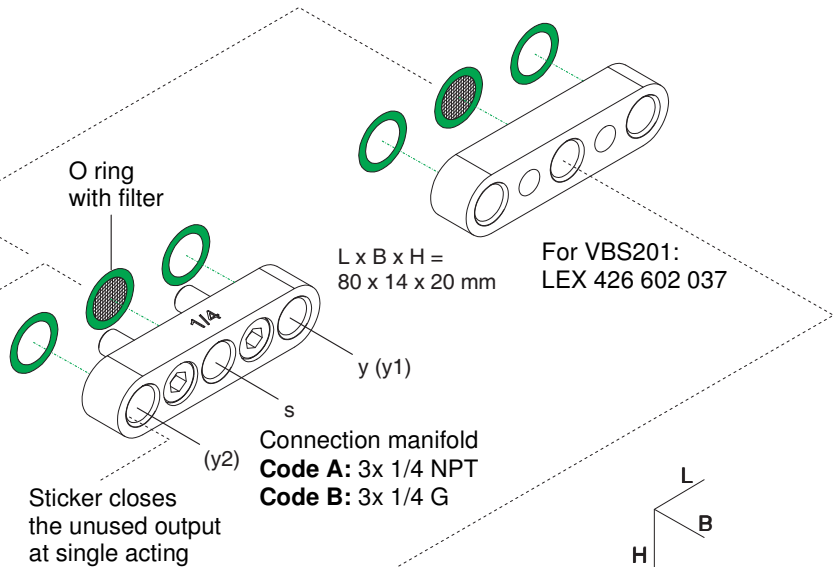
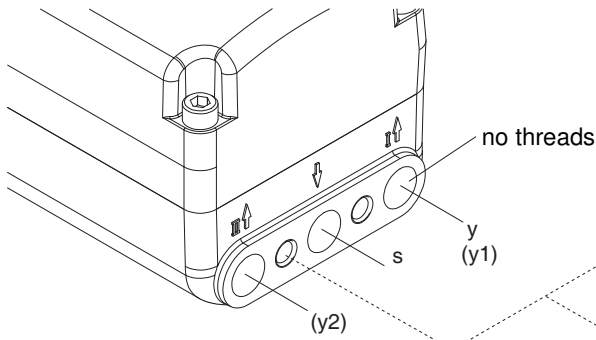
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MODEL CODES SRD998 (continued)

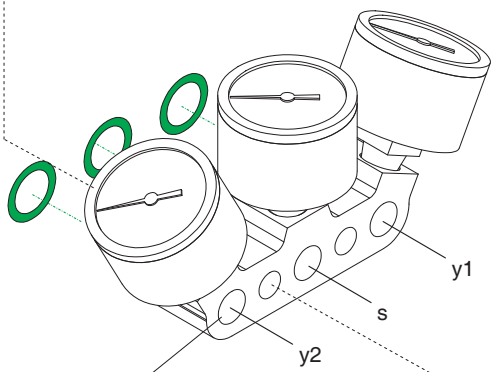
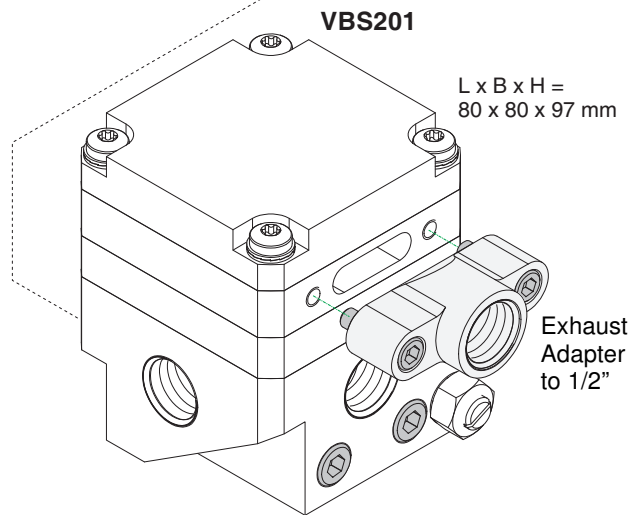
Electrical Certification	
without certification.....	ZZ
ATEX / IEC Ex: II 2G Ex ia IIC T4/T6 Gb, II 1D Ex ia IIIC T100 °C Da.....	A1
ATEX / IEC Ex: II 2G Ex ib IIC T4/T6 Gb, II 2D Ex ib IIIC T100 °C Db.....	A2
ATEX / IEC Ex: II 3G Ex ic IIC T4/T6 Gc, II 3D Ex ic IIIC T100 °C Dc.....	A3
INMETRO: Ex ia IIC T4/T6 Gb, Ex ia IIIC T100 °C Da, IP66.....	B1
INMETRO: Ex ib IIC T4/T6 Gb, Ex ib IIIC T100 °C Db, IP66.....	B2
INMETRO: Ex ic IIC T4/T6 Gc, Ex ic IIIC T100 °C Dc, IP66.....	B3
NEPSI: Ex ia IIC T4/T6 Ga, Ex ia D20 T100 Da, IP66.....	N1
NEPSI: Ex ib IIC T4/T6 Gb, Ex ib D21 T100 Db, IP66.....	N2
NEPSI: Ex ic IIC T4/T6 Gc, Ex ic D22 T100 Dc, IP66.....	N3
FM certification IS..... (a).....	F1
FM certification IS..... (a).....	F2
FM certification IS..... (a).....	F3
CSA certification IS..... (a).....	C1
CSA certification IS..... (a).....	C2
CSA certification IS..... (a).....	C3
EAC: 1 Ex ia IIC T4/T6 Gb X, Ex ia IIIC T100°C Da.....	G1
EAC: 1 Ex ib IIC T4/T6 Gb X, Ex ib IIIC T100°C Db.....	G2
EAC: 2 Ex ic IIC T4/T6 Gc X, Ex ic IIIC T100°C Dc.....	G3
KOSHA certification IS..... (a).....	K1
KOSHA certification IS..... (a).....	K2
KOSHA certification IS..... (a).....	K3
TIIS certification IS..... (a).....	J1
TIIS certification IS..... (a).....	J2
TIIS certification IS..... (a).....	J3
CNS certification IS ¹⁾	
PESO certification IS ²⁾	
Options	
Positioner suitable for use of natural gas instead of air supply (a).....	-S
Positioner free of copper and its alloys (a).....	-C
Approved for SIL2 / SIL3 application..... (a).....	-Q
Stainless Steel Label, fixed with wire.....	-L
Positioner with ECEP (a).....	-X

(a) Not released
 (b) Only to be ordered with single acting model code Version B
 (c) Only to be ordered with double acting model code Version C
 1) The SRD998 has the CNS certificate for usage in Taiwan
 2) The SRD998 has the PESO certificate for usage in India

Accessories, for all basic devices



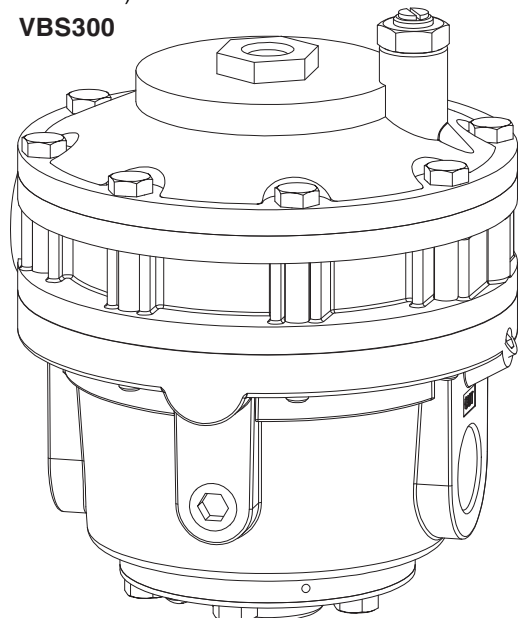
Code 1, single
Connection manifold for single acting positioner with pressure gauges for supply air s and output y



Code 3, double
Connection manifold for double acting positioner with pressure gauges for supply air s, outputs y1, and y2

Booster for remote mounting:
(see extra PSS)

VBS300



MODEL CODES Accessories

230916

Accessories for SRD998

Filter Regulators

Filter Regulator for -30 °C to 70 °C	FRS02
Stainless Steel (316) Filter Regulator	FRS03
High Flow Filter Regulator 1/2 inch / Aluminum	FRS04
High Flow Filter Regulator 1/2 inch / Stainless Steel.	FRS05
Mounting Bracket for FRS02 or FRS03	EBZG-FR1
Orientable Mounting Bracket for FRS02 or FRS03	EBZG-FR2
Nipple for direct mounting Filter regulator 1/4 NPT both sides	VG-91
Mounting Bracket for FRS04	EBZG-FR4
Mounting Bracket for FRS05	EBZG-FR5
Nipple 1/2 NPT (FRS04/05 side) to 1/4 NPT (SRD998 side) for direct piping	VG-93

Communication / Modem / DTM

HART USB Modem (made by Ifak) with ATEX IS Certification	MOD900
DTM for SRD Series for HART / FF / Profibus	VALCARE
Service Modem	EDC90

Booster Relay (in case of double acting, qty. shall be 2 pieces)

Remote version for any positioner	VBS200
Integral volume booster for SRD991, SRD960, SRD998, and SRI990 (directly flanged to positioner)	VBS201
Booster Cv7 - Alum Housing - Remote mounting	VBS300
Booster Cv7 - SST Housing - Remote mounting	VBS310

Lock-in Relays

Lock In Relay, Single Acting, Aluminum Casing (a)	LIR01
Lock In Relay, Double Acting, Aluminum Casing. . . . (a)	LIR02
Lock In Relay, Single Acting, SST 316L Casing (a)	LIR03
Lock In Relay, Double Acting, SST 316L Casing. . . . (a)	LIR04

Limit switch

Mechanical Limit Switch weatherproof and plastic housing (TE Sensors XCKN2118P20)	MLS01
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Cable Gland

Cable Gland, M20x1.5 Plastics, Color Gray/Black	BUSG-K6
Cable Gland, M20x1.5 Plastics, Color Blue	BUSG-K7
Cable Gland, M20x1.5 Plastics, Color White.	BUSG-K9
Cable Gland, M20x1.5 Stainless Steel.	BUSG-S6

Adapter

Adapter (Brass With Nickel Coating) M20 x 1.5 To 1/2 - 14 NPT (Internal Thread)	AD-A5
Adapter (ss) M20x1.5 to 1/2-14 NPT (Internal Thread)	AD-A6

(a) Not released

MODEL CODES Accessories

080915

Accessories for SRD998**Attachment Kits****EBZG**

For diaphragm actuators with casting yoke acc. NAMUR (incl. standard Couple lever)	-H
For diaphragm actuators with pillar yoke acc. NAMUR (incl. standard Couple lever).	-K
For FoxTop / FoxPak (g)	-E1
For mounting to rotary actuators acc. VDI/VDE 3845 (without bracket)	-R
Brackets VDI/VDE 3845 (A = 80 mm / 3.15 in; B = 20 mm / 0.79 in)	-C1
Brackets VDI/VDE 3845 (A = 80 mm / 3.15 in; B = 30 mm / 1.18 in)	-C2
Brackets VDI/VDE 3845 (A = 130 mm / 5.12 in; B = 50 mm / 1.97 in).	-C3
Brackets VDI/VDE 3845 (A = 130 mm / 5.12 in; B = 30 mm / 1.18 in).	-C4
Universal Brackets VDI/VDE 3845 (A = 80 or 130 mm; B=20 or 30 or 50 mm)	-C5

Couple Lever**EBZG**

Standard (stroke max. 80 mm)	A
Extended (stroke max. 260 mm)	-A1
Reduced (stroke < 8 mm)	-A2
Fold feedback lever (stroke 8 to 70 mm)	-A3
Short stroke (stroke 8 to 35 mm)	-A4
Couple Lever Folded (stroke special)	-A5
Extended (stroke max. 120 mm)	-B

Carrier bolt**SRXG**

Carrier bolt extra short 23 mm	-A
Adjustable carrier bolt 20 to 37 mm	-B
Carrier bolt 38 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 for stem diameter up to 34 mm	-H
Carrier Bolt 80 mm	-I
Adjustable carrier bolt for thread 3/8"	-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
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