



VALVE AUTOMATION
SINCE 1976

Foxboro™
by Schneider Electric

SRD991 Intelligent Positioner with HART, PROFIBUS-PA, FOUNDATION Fieldbus H1 or Without Communication



The intelligent positioner SRD991 is designed to operate pneumatic valve actuators and can be operated from control systems (e.g. the Foxboro I/A Series System), controllers or PC-based configuration- and operational tools such as FDT/DTM Software. The positioner is available with different communication protocols. The multi-lingual full text graphical-LCD in connection with the 3 push buttons allows a comfortable and easy local configuration and operation. For installations in contact with explosive atmospheres, certificates are available.

DEVICE FEATURES

Intelligent

- Auto-start with self-calibration
- Self diagnostics, status- and diagnostic messages
- Easy operation with three key pads
- Multi-Lingual full text graphical LCD
- VALcare™ or Valve Monitor DTM for valve diagnostics and predictive maintenance

With communication

- HART, FOUNDATION Fieldbus H1, PROFIBUS-PA
- Configuration by means of local keys, hand-held terminal (HART), PC with FDT-DTM or I/A Series system

Without communication

- Input signal 4 to 20 mA

COMMON FEATURES

- 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 300° as option)
- 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 50534-6-1 – VDI/VDE 3847
- Mounting on rotary actuators acc. to VDI/VDE 3845 or IEC60534-6-2
- Protection class IP 66 and NEMA 4X
- Approved for SIL applications
- Explosion protection: Intrinsic safety according to ATEX / IECEx, FM, CSA, INMETRO, NEPSI, EAC, ...



FUNCTIONAL SPECIFICATIONS (common data for all versions)

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 up to 95° without mechanical
stop; up to 300° with Option -J.

Supply

Supply air pressure 1.4 to 6 bar (20 to 90 psig)
with spool valve ¹⁾ 1.4 to 7 bar (20 to 105 psig)
Output to actuator 0 to ~100 % of supply air
pressure (up to 5.5 bar at 6 bar supply air pressure)
with spool valve heavy duty²⁾: 4 to 10 bar
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 filter regulator for air supply of positioner is strongly recommended. It reduces the air pressure to actuator's maximum pressure and keeps it constant.

Air output I_n/h (scfh)

at max. deviation, single and double acting:

Supply air pressure bar (psig)	1.4 (20)	3 (45)	6 (90)
Standard Amplifier	2 700 (95)	5 000 (177)	7 500 (265)
with Spool Valve ¹⁾	6 000 (211)	12 000 (423)	18 000 (636)

"Heavy duty" spool valve ²⁾ is able to deliver up to 55,000 I_n/h at 10 bar.

Note: The use of boosters in connection with Spool valve is not recommended.

Air consumption (steady state) I_n/h (scfh)

Supply air pressure bar (psig)	1.4 (20)	3 (45)	6 (90)
single acting	80 (2.8)	130 (4.6)	220 (7.8)
double acting	130 (4.6)	230 (8.1)	430 (15.2)
Spool Valve	100 (3.5)	240 (8.5)	500 (17.7)

Response characteristic ^{3) 4)}

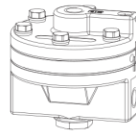
Sensitivity < 0.1 % of travel span
Non-linearity (terminal based adjustment) < 0.4 % of travel span
Hysteresis < 0.3 % of travel span
Supply air dependence < 0.1 % / 1 bar (15 psi)
Temperature effect < 0.3 % / 10 K
Mechanical vibration
10 to 60 Hz up to 0.14 mm,
60 to 500 Hz up to 2 g < 0.25 % of travel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

Volume Booster Series (to order as accessory)

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

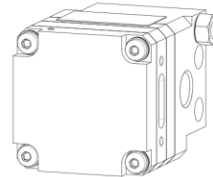
VBS100 / VBS110

Volume boosters with Cv1 and pneumatic connection 1/4", for remote mounting
VBS100 in Aluminium, VBS110 in Stainless Steel 316



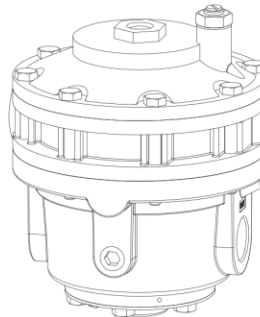
VBS200 / VBS201 / VBS202

Volume booster with Cv 2 and pneumatic connection 1/2", for direct side mounting to positioner, remote mounting, or mounting acc. to VDI/VDE 3845



VBS300 / VBS310

Volume boosters with Cv7 and pneumatic connection 1", for remote mounting
VBS300 in Aluminum, VBS310 in Stainless Steel 316



1) Spool valve is the type of amplifier used in device SRD991-Cxxxx-S
2) Spool valve heavy duty is the amplifier used in stainless steel version SRD991 - Cxx... - SZK
3) Data measured according to VDI/VDE 2177
4) With stroke 30 mm and lever length 90mm



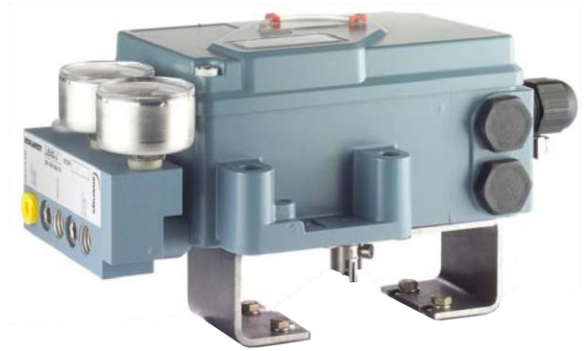
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Special Versions of SRD991:



SRD991 Stainless Steel Housing



SRD991 designated for PST (Partial Stroke Test for Emergency Shut Down)

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