SIPART™ PS2 Valve Positioners

The SIPART PS2 smart positioner is used to control linear or rotary actuators. The electropneumatic positioner moves the actuator to a valve position corresponding to the setpoint. Additional function inputs can be used to block the valve or to set a safety position. A binary input is standard in the basic device for this purpose.

The SIPART PS2 positioner is a digital field device with a highly-integrated microcontroller. The positioner consists of the following components:

- Casing and cover
- PCB with corresponding electronics with communication via HART® or according to the PROFIBUS-PA specification, IEC 1158-2; bus-supplied device
- Actuator travel detection system
- Terminal housing with screw terminals
- Pneumatic valve manifold with piezoelectric valve precontrol.

SIEMENS

FEATURES & BENEFITS

- Simple operation and programming using three keys and a two-line LCD
- No hand-held communicator is required
- Universal device mounts on rotary or linear actuators
- Auto-tunes for fast set-up (digital non-interacting zero & span)
- Manual operation without additional equipment
- Minimum air consumption reduces utility costs
- Programmable tight shut-off to save valve trim
- Programmable ramp-to-setpoint rates
- Programmable spilt ranging
- Selectable or user defined flow cams
- PROFIBUS or HART or 4-20 mA or 0-20 mA input
- 4-20 mA position feedback module available
- Advanced diagnostics for valve and actuator
- Corrosive-resistant plastic or metal casing for single-action actuators
- Plastic casing for double-action actuators
- For non-hazardous or hazardous applications: *intrinsically-safe device (EEx ia/ib) Class 1, Div.1, Groups A,B,C,D, or in flameproof/explosion-proof casing (EEx d)*

SPECIFICATIONS

SIPART PS2
SIPART PS2 EEx d
SIPART PS2 PA
SIPART PS2 EEx d PA

General data

Travel range:

• Linear actuators 0.12 to 5.1 inches (3 to 130 mm) standard, longer stroke lengths available (angle of feedback shaft 16 to 90°)
• Rotary actuators 30 to 100°

Installation

• On linear actuators using linear mounting kit 6DR4004-8V and additional lever arm 6DR4004-8L if required on actuators according to IEC 534-6 (NAMUR) with ledge, columns or plane surface
• On rotary actuators using NAMUR rotary adaptor kit 6DR4004-8D on actuators conforming to VDI/VDE 3845 and DIN 3337: the mounting plate must be provided on the actuator side; shaft with nut and M6 female thread

MOUNTING DIMENSIONS

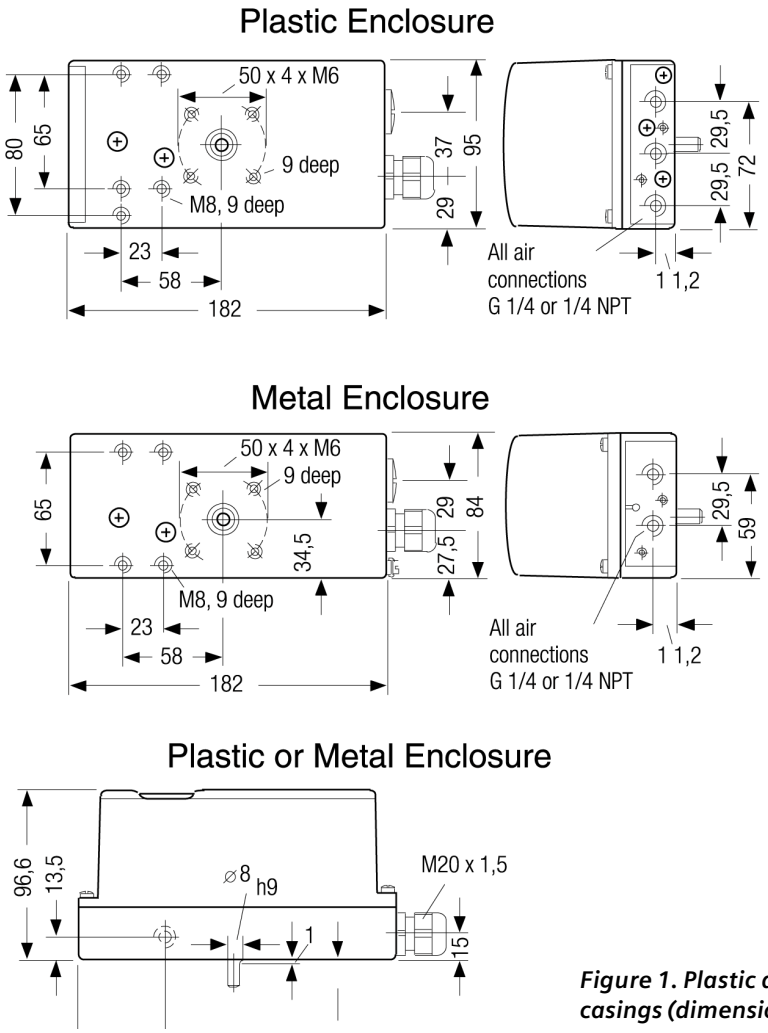

Figure 1. Plastic and metal casings (dimensions in mm)

Controller
• Five-point switch: Self-adjusting
• Dead band
• dEbA =Auto: Self-adjusting or
• dEbA =0.1 to 10%: fixed setting
• Controllable response time: ≥1.5 sec., reduced resolution with smaller positioning times

A/D converter
• Scanning time =10 ms
• Resolution: ≤0.05%
• Transmission error: ≤0.2%
• Temperature influence: ≤0.1%/10 K

Binary input
BI1 (connected; can be used for floating contact electrically to /w current input)
• Contact rating = ≤5µA at 3 V

Degree of protection
IP 65 to EN 60 529; NEMA 4X (follow mounting instructions in user's manual)

Mounting position
Any; in wet environment, pneumatic connections and exhaust opening not upwards

CE marking
Conforms to EMC guideline 89/336 EEC in compliance with the following standards
• Emitted interference = EN 50 081-1
• Noise immunity = EN 50 082-2 and NAMUR NE21 May 93

Material of:
• Casing:
– 6DR5 ■ ■ 0-... (plastic) Glass-fiber-reinforced Macrolon
– 6DR5 ■ ■ 1-... (metal) GK-AlSi7Mg
– 6DR4 ■ ■ 1-... (metal) GK-AlSi7Mg
• Pressure gauge block:
Aluminium, anodized or epoxy-polymer powder coated.

Resistance to vibration
10 g

Pneumatic data
Supply (inlet air)
• Pressure 20 to 101 psi (1.4 to 7 bar): set at sufficiently larger than max. actuator pressure (positioning pressure)

Air quality according to ISO 8573-1
• Size and density of particulates Class 2
• Pressure dew point Class 2 (min. 36 °F [20 °C] below ambient temperature)
• Oil concentration Class 2

Unrestricted flow of:
At psi (bar) 29 (2)58 (4)87 (6)
• Inlet air valve SCFM (Nm^3/h) 2.4 (4.1) 4.2 (7.1) 5.8 (9.8)
• Outlet air valve SCFM (Nm^3/h) 4.8 (8.2) 8.1 (13.7)11.3 (19.2)

Valve leakage
<0.00035 SCFM
(<6 x 10^{-4} Nm^3/h)

Throttle ratio
Adjustable up to ∞ :1
Consumption of inlet air in stable state: <0.021 SCFM (<3.6 x 10^{-2} Nm^3/h)

Types of actuators
• In plastic casing: Single-action and double-action
• In metal casing: Single-action
• In explosion-proof casing: Single-action and double-action

MOUNTING DIMENSIONS

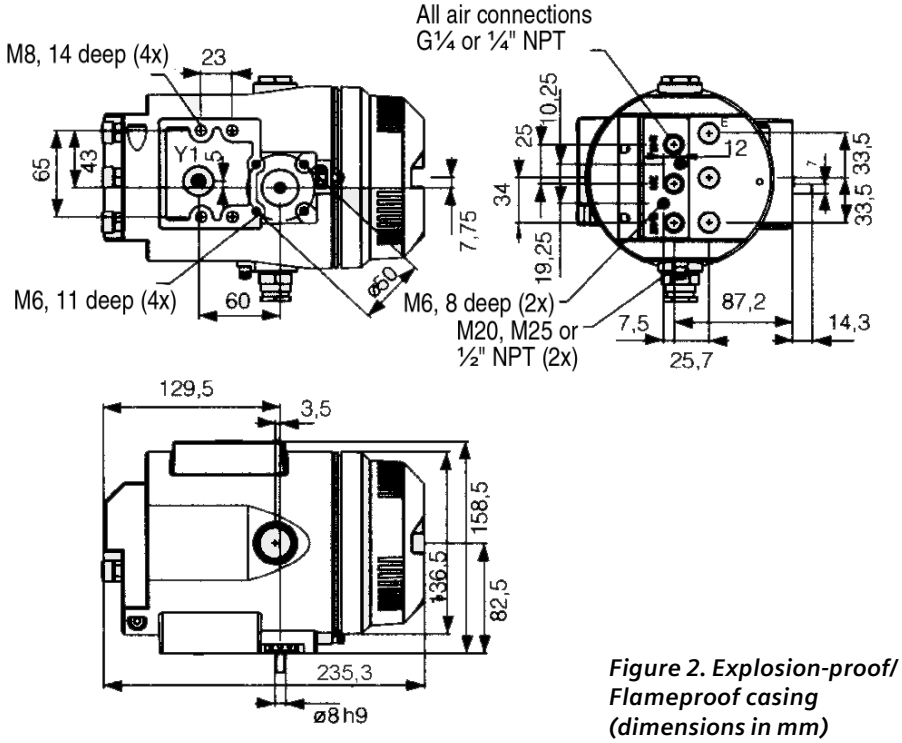

Figure 2. Explosion-proof/ Flameproof casing (dimensions in mm)

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