

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

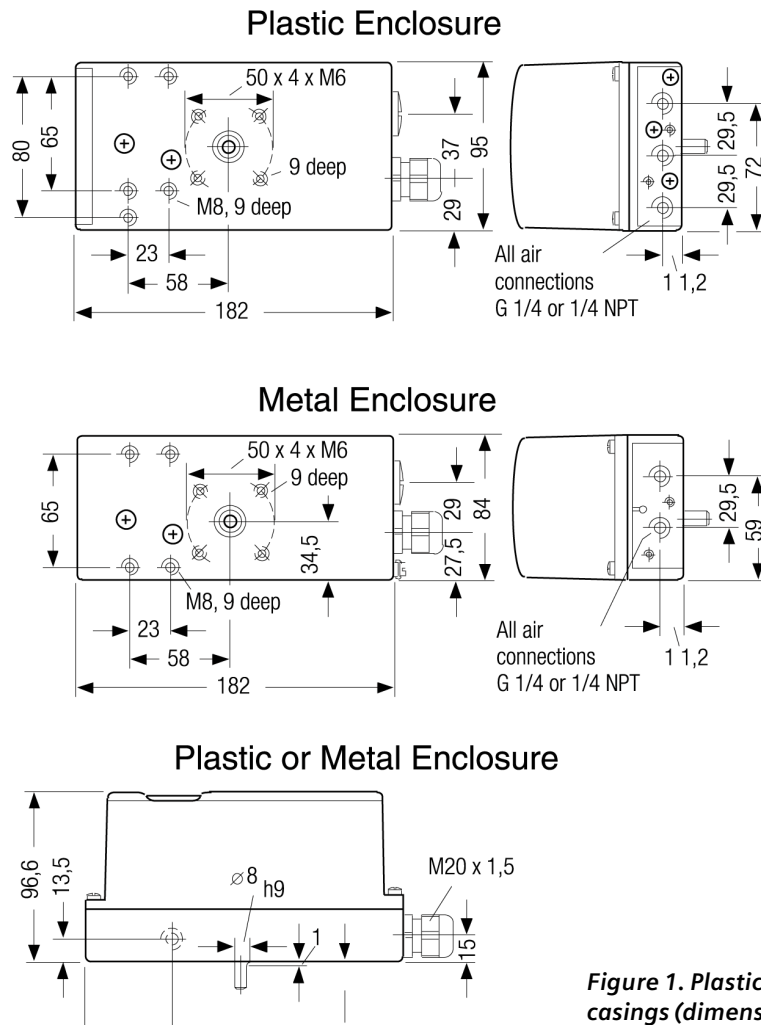


Figure 1. Plastic and metal casings (dimensions in mm)

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: $\leq 0.05\%$
- Transmission error: $\leq 0.2\%$
- Temperature influence: $\leq 0.1\%/10$ K

Binary input

- BI1 (connected; can be used for floating contact electrically to /w current input)
- Contact rating = $\leq 5\mu\text{A}$ 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-AISi7Mg
 - 6DR4 ■ ■ 1-... (metal) GK-AISi7Mg
- 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 (Nm³/h) 2.4 (4.1) 4.2 (7.1) 5.8 (9.8)
 - Outlet air valve SCFM (Nm³/h) 4.8 (8.2) 8.1 (13.7) 11.3 (19.2)

Valve leakage

< 0.00035 SCFM
($< 6 \times 10^{-4}$ Nm³/h)

Throttle ratio

Adjustable up to $\infty : 1$
Consumption of inlet air in stable state:
 < 0.021 SCFM ($< 3.6 \times 10^{-2}$ Nm³/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

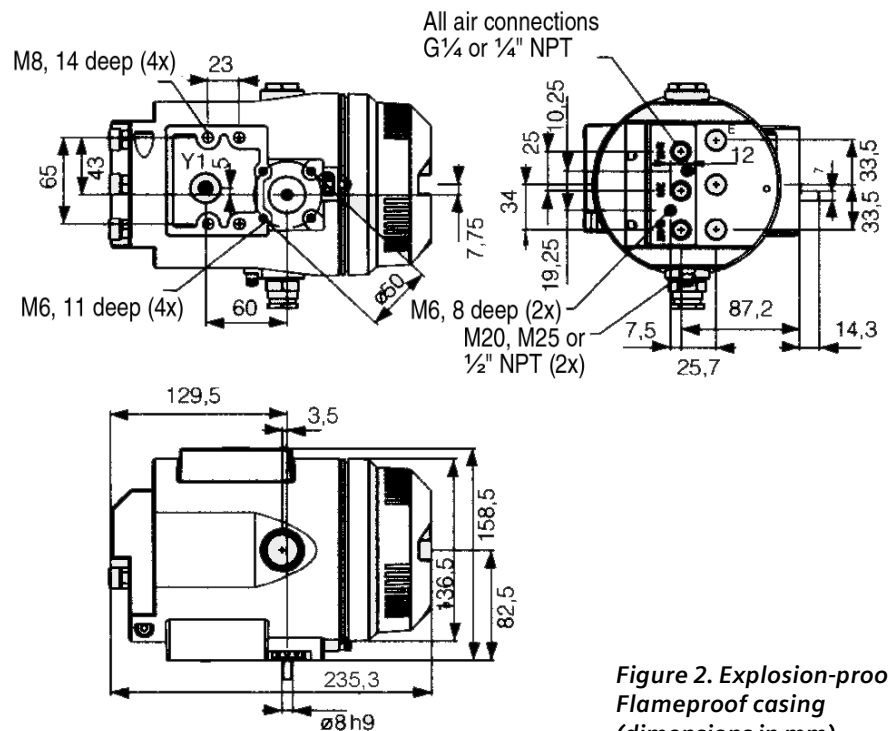


Figure 2. Explosion-proof/
Flameproof casing
(dimensions in mm)

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