Electropneumatic positioners
SIPART PS2

Technical description

Overview

SIPART PS2 electropneumatic positioner in Makrolon enclosure

SIPART PS2 Ex d electropneumatic positioner in flameproof aluminium enclosure (Ex d)

SIPART PS2 in stainless steel enclosure

Benefits

SIPART PS2 positioners offer decisive advantages:

- Simple installation and automatic commissioning (self-adjustment of zero and span)
- Simple operation with
  - Local operation (manual operation) and configuration of the device using three buttons and a user-friendly two-line display
  - Programming through SIMATIC PDM
- Very high-quality control thanks to an online adaptation procedure
- Negligible air consumption in stationary operation
- "Tight shut-off" function (ensures maximum positioning pressure on the valve seat)
- Numerous functions can be activated by simple configuring (e.g. characteristic curves and limits)
- Extensive diagnostic functions for valve and actuator
- Only one device version for linear and part-turn actuators
- Few moving parts, hence insensitive to vibrations
- External non-contacting position sensor as option for extreme ambient conditions
- "Intelligent solenoid valve": Partial Stroke Test and solenoid valve function in a single device
- Partial Stroke Test e.g. for safety valves
- Can also be operated with natural gas
- SIL (Safety Integrity Level) 2

Application

The SIPART PS2 positioner is used, for example, in the following industries:

- Chemical/petrochemical
- Power stations
- Paper and glass
- Water, waste water
- Food and pharmaceuticals
- Offshore plants

The SIPART PS2 positioner is available:

- For single-acting actuators: In Makrolon, stainless steel or aluminium enclosure, as well as flameproof aluminium enclosure (Ex d)
- For double-action actuators: In Makrolon enclosure, stainless steel enclosure and flameproof aluminium enclosure (Ex d)
- For non-hazardous applications
- For hazardous applications in the versions
  - as intrinsically safe device (Ex ia/ib) or
  - in flameproof aluminium enclosure (Ex d) or
  - in Ex n design (non sparking)

and in the versions:

- With 0/4 ... 20 mA control with/without communication through HART signal
- With PROFIBUS PA communication interface
- With Foundation Fieldbus (FF) communications interface.

The SIPART PS2 electropneumatic positioner is used to control the final control element of pneumatic linear or part-turn 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 present as standard in the basic device for this purpose.
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Explosion-proof versions
The basic version of the device is available in an intrinsically safe design with degree of protection Ex ia/ib and approval for zone 2/zone 20 (dust).

Operation in zone 1 is permissible for the SIPART PS2 Ex d version with flameproof enclosure (see "Technical Data"). It is then permissible to use all option modules (except external actuator travel detection systems, SIA/GWK modules and NCS).

In a flameproof enclosure for extreme ambient conditions
The SIPART PS2 is available in a stainless steel enclosure (with no window in the cover) for use in particularly aggressive environments (e.g. offshore operation, chlorine plants etc.). The device functions are the same as those of the basic versions.

Design
The SIPART PS2 positioner is a digital field device with a highly-integrated microcontroller.

The positioner consists of the following components:

- Enclosure and cover
- PCB with corresponding electronics with or without communication through HART or with electronics for communication in accordance with - PROFIBUS PA specification, IEC 61158-2; bus-supplied device, or - Foundation Fieldbus (FF) specification, IEC 61158-2, bus-supplied device
- Position detection system
- Terminal housing with screw terminals
- Pneumatic valve manifold with piezoelectric valve precontrol.

The valve manifold is located in the housing, the pneumatic connections for the inlet air and the positioning pressure on the right-hand side. A pressure gauge block and/or a safety solenoid valve can be connected there as options. The SIPART PS2 positioner is fitted to the linear or part-turn actuator using an appropriate mounting kit. The circuit board container in the casing provides slots for separately ordered boards with the following functions:

- $I_y$ module:
  - Position feedback as a two-wire signal 4 to 20 mA
- Alarm unit (3 outputs, 1 input):
  - Signaling of two limits of the travel or angle by binary signals. The two limits can be set independently as maximum or minimum values.
  - Output of an alarm if the setpoint position of the final control element is not reached in automatic mode or if a device fault occurs.
  - Second binary input for alarm signals of for triggering safety reactions, e.g. blocking function or safety position.
- Limit signaling through slot-type initiators (SIA module)
Two limits can be signaled redundantly as NAMUR signals (EN 60947-5-6) by slot-type initiators. An alarm output is also integrated in the module (see alarm unit).
- Limit value signal via mechanical contacts (limit value contact module)
Two limits can be signaled redundantly by switching contacts. An alarm output is also integrated in the module (see alarm unit).

Valid for all modules described above:

All signals are electrically isolated from one another and from the basic unit. The outputs indicate self-signaling faults. The modules are easy to retrofit.

Separate mounting of actuator travel detection system and controller unit
The position detection system and controller unit can be connected separately for all casing versions of the SIPART PS2 (except flameproof design). Measurement of the travel or angle is carried out directly on the actuator. The controller unit can then be fitted a certain distance away, e.g. on a mounting pipe or similar, and is connected to the position detection system by an electric cable and to the actuator by one or two pneumatic lines. Such a split design is frequently advantageous if the ambient conditions at the fitting exceed the specified values for the positioner (e.g. strong vibrations).

The following can be used for measuring the travel or angle:
- NCS sensor
- External position detection system C73451-A430-D78
- A commercially available potentiometer (10 kΩ resistance), e.g. for higher application temperatures or customer-specific applications

The use of linear potentiometers is recommended for very small linear actuators with a short valve travel since, on the one hand, the space required by the linear potentiometer is very small and, on the other, the transmission characteristic is optimum for a small travel.

Separate mounting of positioner detection system and controller unit

Non-contacting position sensor (NCS)

Contact and non-contacting position sensor (NCS) for part-turn actuator (left) and for linear actuator ≤ 14 mm (0.55 inch) (right)
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Function

The SIPART PS2 electropneumatic positioner works in a completely different way to normal positioners.

Mode of operation

Comparison of the setpoint and the actual value takes place electronically in a microcontroller. If the microcontroller detects a deviation, it uses a 5-way switch procedure to control the piezoelectric valves, which regulates the flow of air into and from the chambers of the pneumatic actuator or blows it in the opposite direction.

The microcontroller then outputs an electric control command to the piezoelectric valve in accordance with the size and direction of the system deviation (deviation between setpoint w and control output x). The piezoelectric valve converts the command into a pneumatic positional increment.

The positioner outputs a continuous signal in the area where there is a large system deviation (high-speed zone); in areas of moderate system deviation (slow-speed zone) it outputs a sequence of pulses. No positioning signals are output in the case of a small system deviation (adaptive or variable dead zone).

The linear or rotary motion of the actuator is detected by the mounting kit and transferred to a high-quality potentiometer made of plastic conductive material over a shaft and a non-floating gear transmission.

The angular error of the pick-up in cases where the assembly is mounted on a linear actuator is corrected automatically.

When connected in a 2-wire system, the SIPART PS2 draws its power exclusively from the 4 to 20 mA setpoint signal. The electric power is also connected through the 2-wire bus signal with PROFIBUS operation (SIPART PS2 PA). The same applies for the FOUNDATION Fieldbus version.

Pneumatic valve manifold with piezoelectric valve precontrol

The piezoelectric valve can release very short control pulses. This helps achieve high positioning accuracy. The pilot element is a piezoelectric bending converter which switches the pneumatic main controller unit. The valve manifold is characterized by an extremely long service life.

Local operation

Local operation is performed using the built-in display and the three buttons. Switching between the operating levels Automatic, Manual, Configuring and Diagnosis is possible at the press of a button.

In Manual mode the drive can be adjusted over the entire range without interrupting the circuit.

Operation and monitoring with the SIMATIC PDM communication program

The SIMATIC PDM program is available for communication through the HART interface and also for the PROFIBUS PA coupling.

The SIMATIC PDM communication software allows for convenient remote operation and remote observation using a PC. The positioner can also be configured using this program. Parameters which provide important information for maintenance and fault diagnosis of the complete unit can also be determined using process data and comparison data.

When operating the SIPART PS2 through the HART interface, the connection is made directly to the 2-wire cable to the SIPART PS2 positioner through a HART modem that can be connected to the RS 232 or USB interface. The signals needed for communication in conformity with the HART protocol are superimposed on the current signal in accordance with the Frequency Shift Keying (FSK) method.

Automatic commissioning

With a simple configuration menu the SIPART PS2 can be quickly adapted to the fitting and adjusted by means of an automatic startup function.

During initialization, the microcontroller determines the zero point, full-scale value, the direction of action and the positioning speed of the fitting. From this data it establishes the minimum pulse time and the dead zone, thus optimizing the control.

Low air consumption

A hallmark of the SIPART PS2 is its own extremely low consumption of air. Normal air losses on conventional positioners are very costly. Thanks to the use of modern piezoelectric technology, the SIPART PS2 consumes air only when it is needed, which means that it pays for itself within a very short time.

Comprehensive monitoring functions

The SIPART PS2 has various monitoring functions with which changes on the actuator and valve can be detected and signaled if applicable when a selectable limit has been exceeded. This information may be important for diagnosis of the actuator.
These fault indications can be output either line-conducted over crustations on the fittings, the wearing of a valve plug/seating, or precipitations or in-signaling of other faults, such as the static friction of a packing
This three-stage alarm hierarchy also allows early detection and ability at any time by means of suitable maintenance strategies.
• Imminent danger of unit failure or general failure (red wrench)
• Urgent need for maintenance (yellow wrench)
• Need for maintenance (green wrench)

Status monitoring with 3-stage alarm concept
The intelligent electropneumatic SIPART PS2 positioner is equipped with additional monitoring functions. The status indicators derived from these monitoring functions signal active faults of the unit. The severity of these faults are graded using "traffic light signaling" symbolized by a wrench in the colors green, yellow and red (in SIMATIC PDM and Maintenance Station):
• Need for maintenance (green wrench)
• Urgent need for maintenance (yellow wrench)
• Imminent danger of unit failure or general failure (red wrench)
This allows users to put early measures into action before a serious valve or actuator fault occurs which could result in a system shutdown. The fact that a fault indication is signaled, such as the onset of a diaphragm break in the actuator or the progressive sluggishness of a unit, enables the user to ensure system reliability at any time by means of suitable maintenance strategies.

These fault indications can be output either line-conducted over the alarm outputs (see above) of the positioner (max. 3), or via communication over the HART or field bus interfaces. In this case, the HART, PROFBUS and FF versions of SIPART PS2 permit a differentiation of the various fault indications, as well as a trend representation and histogram function of all key process variables with regard to the fittings.
The display of the device also displays the graded maintenance requirements, complete with identification of the source of the fault.

Functional safety acc. to SIL 2
The SIPART PS2 positioners are also suitable for the control of fittings, which meet the special requirements of the functional safety up to SIL 2 to IEC 61508 or IEC 61511-1.
This is a single-action, venting positioner with an input of 4 to 20 mA, PROFIBUS PA and FOUNDATION Fieldbus (FF) for mounting on pneumatic actuators with spring return.
The positioner vents the valve actuator on demand/in the event of a fault and puts the valve in the preset safety position.
This positioner meets the following requirements:
• Functional safety up to SIL 2 to IEC 61508 or IEC 61511-1, from firmware version C4 or higher for safe venting
• Explosion protection for the versions 6DR5...-E...
• Electromagnetic compatibility to EN 61326/A1, Appendix A.1

SIPART PS 2 as "intelligent solenoid valve"
Open / Close valves, safety fittings in particular, are generally pneumatically controlled over a solenoid valve. If you use SIPART PS2 instead of this type of solenoid valve, the positioner performs two tasks in a single device (without extra wiring)
• Firstly, it switches the fitting off on demand by venting the actuator (functional safety acc. to SIL 2 (see above)
• Secondly, it can perform a Partial Stroke Test at regular intervals (1 - 365 days), which prevents the blocking of the fitting, e.g. due to corrosion or furring.
As in this case SIPART PS2 is constantly working in normal operation (e.g. 99 % position), it also acts as a permanent test function for the pneumatic output circuit, which is not usually possible when using a solenoid valve.

Solenoid valves on control valves can also not normally be tested during operation. They are therefore not necessary when using SIPART PS2 with a 4-wire connection system as the venting is carried out on demand by SIPART PS2. This means that on control valves, both the control function and the shut-off function can be carried out by a single device.

Configuring
In configuring mode, the SIPART PS2 positioner can be configured to requirements and include the following settings:
• Input current range 0 to 20 mA or 4 to 20 mA
• Rising or falling characteristic curve at the setpoint input
• Positioning speed limit (setpoint ramp)
• Split-range operation; adjustable start-of-scale and full-scale values
• Response threshold (dead zone); self-adjusting or fixed
• Direction of action; rising or falling output pressure with rising setpoint
• Limits (start-of-scale and full-scale values) of positioning range
• Limits (alarms) of the final control element position; minimum and maximum values
• Automatic "tight shut-off" (with adjustable response threshold)
• The travel can be corrected in accordance with the valve characteristic curve.
• Function of binary inputs
• Function of alarm output etc.
Configuration of the various SIPART PS2 versions is largely identical.
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1. Motherboard with microcontroller and input circuit
2. Control panel with display and pushbuttons
3. Piezoelectric valve unit, always present
4. Valve unit, present as accessory in double-action positioner
5. Iy module for SIPART PS2 controller
6. Alarm module for 3 alarm outputs and one binary input
7. SIA module (slot initiator alarm module, fig.) or limit value contact module
8. Spring loaded pneumatic actuator (single-action)
9. Springless pneumatic actuator (double-action)

Note: Alarm module (6) and SIA module (7) can only be inserted as alternatives.

SiP ART PS2, electropneumatic positioner, function diagram
## Technical specifications

### SIPART PS2 (all versions)

#### General data
- **Range of stroke (linear actuators)**: 3 ... 130 mm (0.12 ... 5.12 inch)  
- **Angle of rotation (part-turn actuators)**: 30 ... 100°
- **Assembly**:
  - On linear actuators: Using mounting kit 6DR4004-8V and where necessary with an additional lever arm 6DR4004-8L on actuators according to IEC 534-6 (NAMUR) with ribs, bars or flat face
  - On part-turn actuators: Using mounting kit 6DR4004-8D on actuators with mounting plane according to VDI/VDE 3845 and DIN 3337: The required mounting console has to be provided on the actuator side, shaft with groove and female thread M6

#### Controller unit
- **Five-point switch**: Self-adjusting
- **Deadband**:
  - dEbA = Auto: Self-adjusting or can be set as fixed value
  - dEbA = 0.1 ... 10 %: Self-adjusting or can be set as fixed value

#### A/D converter
- **Scan time**: 10 ms
- **Resolution**: ≤ 0.05 %
- **Transmission error**: ≤ 0.2 %
- **Temperature influence effect**: ≤ 0.1 %/10 K (≤ 0.1 %/18 °F)
- **Cycle time**:
  - 20 mA/HART device: 20 ms
  - PA device: 60 ms
  - FF device: 60 ms (min. loop time)

#### Binary input BE1 (terminals 9/10; electrically conn. to basic device)
- **Suitable only for floating contact; max. contact load < 5 µA with 3 V**
- **Degree of protection**: IP66 to EN 60 529/NEMA 4X
- **Material**:
  - 6DRS: 0... (plastic)
  - 6DR5.1... (aluminum)
  - 6DRS.2... (stainless steel)
  - 6DR5.5... (aluminum, press-proof)
- **Pressure gauge block**: Aluminium AlMgSi, anodized

#### Vibration resistance
- **Harmonic oscillations (sine-wave) according to EN 60068-2-6/05.96**: 3.5 mm (0.14 inch), 27 Hz 3 cycles/axis
- **Bumping (half sine) to EN 60068-2-29/03.95**: 150 m/s² (492 ft/s²), 6 ms, 1000 shocks/axis
- **Noise (digitally controlled) to EN 60068-2-64/08.95**: 10 ... 200 Hz; 1 m/s²/Hz (3.8 ft/s²/Hz)

#### Recommended continuous duty range of the complete fitting
- ≤ 30 m/s² (≤ 98.4 ft/s²) without resonance sharpness

### Weight, basic device
- **Glass-fiber-reinforced Makrolon enclosure**: Appro. 0.9 kg (1.98 lb)
- **Aluminum enclosure**: Appro. 1.3 kg (2.86 lb)
- **Stainless steel enclosure**: Appro. 3.9 kg (8.58 lb)
- **Pressure-proof enclosure**: Appro. 5.2 kg (11.46 lb)

#### Dimensions
- **See Dimensional drawings**

#### Climatic class
- **According to DIN EN 60721-3-4**
- **Storage**
  - 1KS, but -40 ... + 80 °C (-40 ... + 176 °F)
- **Transport**
  - 2K4, but -40 ... + 80 °C (-40 ... + 176 °F)
- **Operation**
  - 4K3, but -30 ... + 80 °C

#### Certificates and approvals
- **Classification according to pressure equipment directive (PED 97/23/EC)**
- **For gases of fluid group 1, complies with requirements of article 3, par. 3 (sound engineering practice SEP)**
- **CE marking**: You can find the appropriate guidelines and standards applied, including the relevant versions, in the EC Declaration of Conformity on the Internet

#### Pneumatic data
- **Auxiliary power (air supply)**: Compressed air, nitrogen or cleaned natural gas
- **Pressure**:
  - 1.4 ... 7 bar (20.3 ... 101.5 psi)
- **Air quality to ISO 8573-1**
- **Solid particulate size and density**
- **Pressure dew point**
- **Oil content**: Class 2
  - (min. 20 K (36 °F) below ambient temperature)
- **Unrestricted flow (DIN 1945)**
- **Inlet air valve (ventilate actuator)**
  - 2 bar (29 psi)
  - 4 bar (58 psi)
  - 6 bar (87 psi)
- **Outlet air valve (vent actuator)**
  - 2 bar (29 psi)
  - 4 bar (58 psi)
  - 6 bar (87 psi)
- **Valve leakage**: < 6.10⁻⁴ Nm³/h (0.0026 USgpm)
- **Throttle ratio**: Adjustable up to a : 1
- **Auxiliary power consumption in the controlled state**
  - < 3.6 10⁻² Nm³/h (0.158 USgpm)

#### Device versions
- **In Makrolon enclosure**: Single-acting and double-acting
- **In aluminum enclosure**: Single-acting
- **In pressure-proof aluminum enclosure**: Single-acting and double-acting
- **In stainless steel enclosure**: Single-acting and double-acting

#### Gauge made of
- **Plastic**: IP31
- **Steel**: IP44
- **Stainl. Steel 316**: IP54

#### Vibration resistance
- **acc. to DIN EN 837-1**
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<th><strong>Basic device with Ex n/ dust protection</strong></th>
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<tbody>
<tr>
<td><strong>Explosion protection ATEX</strong></td>
<td>-</td>
<td>Ex d II 2 G Ex d II C T6</td>
<td>Ex ia/ib II 2 G Ex ia/ib II C T6</td>
<td>Ex n II 3 G Ex nA nL[nL] IIC T6 Dust</td>
<td>II 3 D Ex tD A22 IP66 T100°C Zone 2/22</td>
</tr>
<tr>
<td><strong>Mounting location</strong></td>
<td>Zone 1</td>
<td></td>
<td></td>
<td>Zone 2/22</td>
<td></td>
</tr>
<tr>
<td><strong>Permissible ambient temperature for operation</strong></td>
<td>-30 ... +80 °C (-22 ... +176 °F)</td>
<td>T4: -30 ... +80 °C (-22 ... +176 °F)</td>
<td>T5: -30 ... +65 °C (-22 ... +149 °F)</td>
<td>T6: -30 ... +50 °C (-22 ... +122 °F)</td>
<td></td>
</tr>
<tr>
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<td><strong>Input</strong></td>
<td>2-wire connection (terminals 6/8)</td>
<td>Rated signal range</td>
<td>4 ... 20 mA</td>
<td></td>
</tr>
<tr>
<td><strong>Current to maintain the auxiliary power supply</strong></td>
<td></td>
<td></td>
<td>≥ 3.6 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Required load voltage ** $U_{ij}$ (corresponds to Ω at 20 mA) ** Without HART (6DR50..)</strong></td>
<td>- Typical</td>
<td>6.36 V (corresponds to 318 Ω)</td>
<td>7.8 V (corresponds to 390 Ω)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- max.</td>
<td>6.48 V (corresponds to 324 Ω)</td>
<td>8.3 V (corresponds to 415 Ω)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Without HART (6DR53..)</strong></td>
<td>- Typical</td>
<td>7.9 V (corresponds to 395 Ω)</td>
<td>-</td>
<td>8.4 V (corresponds to 420 Ω)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- max.</td>
<td>8.4 V (corresponds to 420 Ω)</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>With HART (6DR51..)</strong></td>
<td>- Typical</td>
<td>6.6 V (corresponds to 330 Ω)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- max.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>With HART (6DR52..)</strong></td>
<td>- Typical</td>
<td>-</td>
<td>8.4 V (corresponds to 420 Ω)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- max.</td>
<td>-</td>
<td>8.8 V (corresponds to 440 Ω)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Static destruction limit</strong></td>
<td>± 40 mA</td>
<td></td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Internal capacitance $C_i$</strong> ** Without HART**</td>
<td>-</td>
<td>22 nF</td>
<td>22 nF (at &quot;nL&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- With HART</td>
<td>7 nF</td>
<td>7 nF (at &quot;nL&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal inductance $L_i$</strong> ** Without HART**</td>
<td>-</td>
<td>0.12 mH</td>
<td>0.12 mH (at &quot;nL&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- With HART</td>
<td>0.24 mH</td>
<td>0.24 mH (at &quot;nL&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>For connection to circuits with the following peak values</strong></td>
<td>-</td>
<td>U$_i$ = 30 V DC</td>
<td>at &quot;nA&quot; and &quot;ID&quot;: U$_i$ = 30 V DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>I$_i$ = 100 mA</td>
<td>U$_i$ = 30 V DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>P$_i$ = 1 W</td>
<td>I$_i$ = 100 mA</td>
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<tr>
<td>3-/4-wire device (terminals 2/4 and 6/8)</td>
<td>18 ... 35 V DC (U&lt;sub&gt;H&lt;/sub&gt; - 7.5 V)/2.4 kΩ [mA]</td>
<td>18 ... 30 V DC</td>
<td>22 nF (at &quot;nL&quot;)</td>
<td>22 nF (at &quot;nL&quot;)</td>
</tr>
<tr>
<td>• Power supply U&lt;sub&gt;H&lt;/sub&gt;</td>
<td>Current consumption I&lt;sub&gt;H&lt;/sub&gt;</td>
<td>Internal capacitance C&lt;sub&gt;i&lt;/sub&gt;</td>
<td>0.12 mH</td>
<td>0.12 mH (at &quot;nL&quot;)</td>
</tr>
<tr>
<td>• Internal inductance L&lt;sub&gt;i&lt;/sub&gt;</td>
<td>For connection to circuits with the following peak values</td>
<td>U&lt;sub&gt;i&lt;/sub&gt; = 30 V DC</td>
<td>I&lt;sub&gt;i&lt;/sub&gt; = 100 mA</td>
<td>P&lt;sub&gt;i&lt;/sub&gt; = 1 W</td>
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<tr>
<td>Current input I&lt;sub&gt;W&lt;/sub&gt;</td>
<td>Rated signal range</td>
<td>≤ 0.2 V (corresponds to 10 Ω)</td>
<td>≤ 1 V (corresponds to 50 Ω)</td>
<td></td>
</tr>
<tr>
<td>Load voltage at 20 mA</td>
<td>Internal capacitance C&lt;sub&gt;i&lt;/sub&gt;</td>
<td>22 nF</td>
<td>22 nF (at &quot;nL&quot;)</td>
<td></td>
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<td>Internal inductance L&lt;sub&gt;i&lt;/sub&gt;</td>
<td>For connection to circuits with the following peak values</td>
<td>U&lt;sub&gt;i&lt;/sub&gt; = 30 V DC</td>
<td>I&lt;sub&gt;i&lt;/sub&gt; = 100 mA</td>
<td>P&lt;sub&gt;i&lt;/sub&gt; = 1 W</td>
</tr>
<tr>
<td>Electrical isolation</td>
<td>Test voltage</td>
<td>840 V DC, (1 s)</td>
<td>between U&lt;sub&gt;H&lt;/sub&gt; and I&lt;sub&gt;W&lt;/sub&gt; (2 intrinsically safe circuits)</td>
<td>between U&lt;sub&gt;H&lt;/sub&gt; and I&lt;sub&gt;W&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

### Connections

#### Electrical

- Screw terminals 2.5 AWG28-12
- Cable gland M20x1.5 or ¼-14 NPT
- Ex d certified cable gland M20x1.5, ¼-14 NPT or M25x1.5

#### Pneumatic

- Female thread G1/4 EN ISO 228-1 or ¼-18 NPT

### External position sensor (potentiometer or NCS, as option) with the following peak values

- U<sub>o</sub> = 5 V
- I<sub>o</sub> (static) = 75 mA
- I<sub>s</sub> (short-time) = 160 mA
- P<sub)o</sub> = 120 mW
- Maximum permissible external capacitance C<sub>o</sub> = 1 µF
- Maximum permissible external inductance L<sub>o</sub> = 1 mH
### Technical specifications

<table>
<thead>
<tr>
<th>SIPART PS2 PA</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof enclosure)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex n/ dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion protection as per ATEX</td>
<td>Without</td>
<td>Ex d II 2 G Ex d II C T4/T5/T6</td>
<td>Ex ia/ib II 2 G Ex ia/ib II C T6</td>
<td>Ex n II 3 G Ex nA nL[nL] IIC T6 Dust II 3 D Ex tD A22 IP66 T100°C Zone 2/22</td>
</tr>
<tr>
<td>Mounting location</td>
<td>-30 ... +80 °C (-22 ... +176 °F)</td>
<td>Zone 1</td>
<td>T4: -30 ... +80 °C (-22 ... +176 °F)</td>
<td>T4: -20 ... +75 °C (-4 ... +167 °F)</td>
</tr>
<tr>
<td>Permissible ambient temperature for operation</td>
<td>-30 ... +80 °C (-22 ... +176 °F)</td>
<td>T5: -30 ... +65 °C (-22 ... +149 °F)</td>
<td>T6: -30 ... +50 °C (-22 ... +122 °F)</td>
<td>T5: -20 ... +65 °C (-4 ... +149 °F)</td>
</tr>
<tr>
<td>(for basic devices with Ex protection the following applies: Only T4 is permissible when using Iy module.)</td>
<td></td>
<td></td>
<td></td>
<td>T6: -20 ... +50 °C (-4 ... +122 °F)</td>
</tr>
</tbody>
</table>

### Electrical specifications

**Input**

- Power supply (terminals 6/7)
  - Bus voltage: 9 ... 32 V, 9 ... 24 V, 9 ... 32 V
  - Bus connection with supply unit: –

- **Bus connection with barrier**
  - Max. supply voltage $U_o$: –
  - Max. short-circuit current $I_o$: –
  - Max. power $P_o$: 5.32 W

- Bus connection with barrier intrinsically safe
  - Max. supply voltage $U_o$: 32 V
  - Max. short-circuit current $I_o$: 570 mA
  - Max. power $P_o$: 1.2 W

**Current consumption**

- 11.5 mA ± 10 %

- Additional error signal: 0 mA

- Effective internal inductance $L_i$: 8 µH

- Effective Internal capacitance $C_i$: Negligible

**Test voltage**

- 840 V DC, 1 s
Electropneumatic positioners
SIPART PS2
Technical specifications
SIPART PS2 PA

<table>
<thead>
<tr>
<th>SIPART PS2 PA</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof enclosure)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex n/ dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Layers 1 and +2 according to PROFIBUS PA, transmission technology according to IEC 1158-2; slave function: layer 7 (protocol layer) according to PROFIBUS DP, EN 50170 standard with the extended PROFIBUS functions (all data acyclic, manipulated variable, feedbacks and status also cyclic)</td>
<td>Four connections to master class 2 are supported, automatic connection setup 60 s after break in communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2 connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device profile</td>
<td>PROFIBUS PA profile B, version 3.0, more than 150 objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response time to master message</td>
<td>Typically 10 ms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device address</td>
<td>126 (when delivered)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC parameterizing software</td>
<td>SIMATIC PDM, supports all device objects. The software is not included in the scope of delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Connections**

- **Electrical**
  - Screw terminals 2.5 AWG28-12
  - Cable gland M20x1.5 or ½-14 NPT
  - Screw terminals 2.5 AWG28-12
  - Ex d certified cable gland M20x1.5, ½-14 NPT or M25x1.5
  - Screw terminals 2.5 AWG28-12
  - Female thread G¼
  - EN ISO 228-1
  - (¼ -18 NPT)

- **Pneumatic**
  - Female thread G¼
  - EN ISO 228-1
  - (¼ -18 NPT)

External position sensor (potentiometer or NCS, as option) with the following peak values

- \( U_0 \) – 5 V
- \( I_0 \) (static) – 75 mA
- \( I_s \) (short-time) – 160 mA
- \( P_0 \) – 120 mW
- Maximum permissible external capacitance \( C_0 \) – 1 \( \mu \)F
- Maximum permissible external inductance \( L_0 \) – 1 mH
## Technical specifications

<table>
<thead>
<tr>
<th>SIPART PS2 FF</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof enclosure)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex n/ dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion protection as per ATEX</td>
<td>Without</td>
<td>Ex d II 2 G Ex d II C T4/T5/T6</td>
<td>Ex ia/ib II 2 G Ex ia/ib II C T6</td>
<td>Ex n II 3 G Ex nA nL[nL] IIC T6 Dust II 3 D Ex tD A22 IP66 T100°C</td>
</tr>
<tr>
<td>Mounting location</td>
<td>-30 ... +80 °C (-22 ... +176 °F)</td>
<td>T4: -30 ... +80 °C (-22 ... +176 °F)</td>
<td>T5: -30 ... +65 °C (-22 ... +149 °F)</td>
<td>T6: -30 ... +50 °C (-22 ... +122 °F)</td>
</tr>
<tr>
<td>Permissible ambient temperature for operation</td>
<td>Zone 1</td>
<td></td>
<td></td>
<td>Zone 2/22</td>
</tr>
</tbody>
</table>

(For basic devices with Ex protection the following applies: Only T4 is permissible when using Iₜ module.)

### Electrical specifications

**Input**

- **Power supply (terminals 6/7)**
  - **Bus voltage**
    - 9 ... 32 V
    - Bus-supplied
  - **Bus connection with supply unit**
    - In intrinsically safe FISCO
  - **Max. supply voltage U₀**
    - 17.5 V
  - **Max. short-circuit current I₀**
    - 380 mA
  - **Max. power P₀**
    - 5.32 W
  - **Bus connection with barrier**
    - In intrinsically safe
    - at "nL":
      - Un = 32 V DC
      - Uₘ = 32 V
  - **Max. supply voltage (U₀)**
    - 24 V
  - **Max. short-circuit current (I₀)**
    - 250 mA
  - **Max. power (P₀)**
    - 1.2 W

**Electrical specifications**

- **Current consumption**
  - 10.5 mA ± 10 %
- **Additional error signal**
  - 0 mA
- **Effective internal inductance Lᵢ**
  - 8 µH
- **Effective Internal capacitance Cᵢ**
  - Negligible
- **Safety shutdown can be activated with coding bridge (terminals 81/82; electrically isolated from the basic device)**
- **Input resistance**
  - > 20 kΩ
- **Signal status "0" (shutdown active)**
  - 0 ... 4.5 V or unused
  - 13 ... 30 V
- **Signal status "1" (shutdown not active)**
  - Negligible
- **Effective Internal capacitance Cᵢ**
  - Negligible
- **Effective internal inductance Lᵢ**
  - Negligible
- **For connection to power supply with**
  - **Max. supply voltage Uᵢ**
    - At "nA" and "tD":
      - Uₘ = 32 V DC
      - Uₘ = 32 V
  - **Max. short-circuit current Iᵢ**
    - 30 V
  - **Maximum power Pᵢ**
    - 100 mA
- **Electrical isolation**
  - Between basic device and the input for safety shutdown, as well as the outputs of the option modules
  - The basic device and the input to the safety shutdown, as well as the outputs of the option modules, are separate, intrinsically safe circuits

**Test voltage**

- 840 V DC, 1 s
## Electropneumatic Positioners

### SIPART PS2 FF

#### Technical Specifications

<table>
<thead>
<tr>
<th>SIPART PS2 FF</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof enclosure)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td>According to technical specification of the Fieldbus Foundation for H1 communication</td>
<td>Group 3, Class 31PS (publisher, subscriber)</td>
<td>1 resource block (RB2)</td>
<td>1 PID function block (PID)</td>
</tr>
<tr>
<td></td>
<td>1 analog output function block (AO)</td>
<td>1 transducer block (standard advanced positioner valve)</td>
<td>AO: 60 ms</td>
<td>PID: 80 ms</td>
</tr>
<tr>
<td><strong>Execution times of the blocks</strong></td>
<td>1 resource block (RB2)</td>
<td>1 analog output function block (AO)</td>
<td>1 transducer block (standard advanced positioner valve)</td>
<td>AO: 60 ms</td>
</tr>
<tr>
<td></td>
<td>1 PID function block (PID)</td>
<td>1 PID function block (PID)</td>
<td>PID: 80 ms</td>
<td>PID: 80 ms</td>
</tr>
<tr>
<td><strong>Physical layer profile</strong></td>
<td>According to technical specification of the Fieldbus Foundation for H1 communication</td>
<td>Group 3, Class 31PS (publisher, subscriber)</td>
<td>1 resource block (RB2)</td>
<td>1 PID function block (PID)</td>
</tr>
<tr>
<td></td>
<td>1 analog output function block (AO)</td>
<td>1 transducer block (standard advanced positioner valve)</td>
<td>AO: 60 ms</td>
<td>PID: 80 ms</td>
</tr>
<tr>
<td><strong>FF registration</strong></td>
<td>123, 511</td>
<td>Tested with ITK 5.0</td>
<td>Tested with ITK 5.0</td>
<td>Tested with ITK 5.0</td>
</tr>
<tr>
<td><strong>Device address</strong></td>
<td>22 (when delivered)</td>
<td>22 (when delivered)</td>
<td>22 (when delivered)</td>
<td>22 (when delivered)</td>
</tr>
</tbody>
</table>

#### Connections

- **Electrical**
  - Screw terminals 2.5 AWG28-12
  - Cable gland M20x1.5 or ½-14 NPT

- **Pneumatic**
  - Female thread G¼ EN ISO 228-1 (¼ -18 NPT)

<table>
<thead>
<tr>
<th>External position sensor</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof enclosure)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>(potentiometer or NCS; as option)</td>
<td>–</td>
<td>–</td>
<td>5 V</td>
<td>5 V</td>
</tr>
<tr>
<td>with the following peak values</td>
<td>–</td>
<td>–</td>
<td>75 mA</td>
<td>75 mA</td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>160 mA</td>
<td>120 mW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>1 µF</td>
<td>1 µF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>1 mH</td>
<td>1 mH</td>
<td></td>
</tr>
</tbody>
</table>
## Technical specifications

### Add-on modules

<table>
<thead>
<tr>
<th>Description</th>
<th>Without Ex protection/ with Ex d protection</th>
<th>With Ex ia/ib protection</th>
<th>With Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex protection acc. to ATEX</td>
<td>Ex n: II 3 G Ex nA nL[nL] IIC T6 Dust II 3 D Ex d A22 IP66 T100°C</td>
<td>Zone 1</td>
<td>Zone 2/22</td>
</tr>
<tr>
<td>Mounting location</td>
<td>Zone 1</td>
<td>T4: -30 ... +80 °C (-22 ... +176 °F)</td>
<td>T5: -30 ... +65 °C (-22 ... +149 °F)</td>
</tr>
<tr>
<td>Permissible ambient temperature for operation</td>
<td>T6: -30 ... +50 °C (-22 ... +122 °F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(For devices with Ex protection: Only in conjunction with the basic device 6DR5...-E... Only T4 permissible when using Iy module.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alarm unit

<table>
<thead>
<tr>
<th>Description</th>
<th>6DR4004-8A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binary alarm outputs A1, A2 and alarm output</td>
<td></td>
</tr>
<tr>
<td>Signal status High (not responded)</td>
<td>Conductive, R = 1 kΩ +3/1 %*</td>
</tr>
<tr>
<td>Signal status Low* (responded)</td>
<td>Disabled, I R &lt; 60 µA</td>
</tr>
<tr>
<td>(* Low is also the status when the basic device is faulty or has no electric power supply)</td>
<td>(Switching threshold with supply to EN 60947-5-6: U H = 8.2 V, R I = 1 kΩ)</td>
</tr>
<tr>
<td>Internal capacitance C i</td>
<td>≤ 5.2 nF</td>
</tr>
<tr>
<td>Internal inductance L i</td>
<td>Negligible</td>
</tr>
<tr>
<td>Power supply U H</td>
<td>Intrinsic safe switching amplifier to EN 60947-5-6</td>
</tr>
<tr>
<td>Connecting to circuits with the following peak values</td>
<td></td>
</tr>
<tr>
<td>U i = 15.5 V DC</td>
<td>U i = 15.5 V DC</td>
</tr>
<tr>
<td>I i = 25 mA</td>
<td>I i = 25 mA</td>
</tr>
<tr>
<td>P i = 64 mW</td>
<td></td>
</tr>
</tbody>
</table>

### Binary input BE2

<table>
<thead>
<tr>
<th>Description</th>
<th>6/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrically connected to the basic device</td>
<td>Floating contact, open</td>
</tr>
<tr>
<td>- Signal status 0</td>
<td>Floating contact, closed</td>
</tr>
<tr>
<td>- Signal status 1</td>
<td>3 V, 5 mA</td>
</tr>
<tr>
<td>- Contact load</td>
<td>≤ 4.5 V or open</td>
</tr>
<tr>
<td>Electrically isolated from the basic device</td>
<td>≥ 13 V</td>
</tr>
<tr>
<td>- Signal status 0</td>
<td>≥ 25 kΩ</td>
</tr>
<tr>
<td>- Signal status 1</td>
<td></td>
</tr>
<tr>
<td>- Natural resistance</td>
<td></td>
</tr>
<tr>
<td>Static destruction limit</td>
<td></td>
</tr>
<tr>
<td>Internal inductance and capacitance</td>
<td>± 35 V</td>
</tr>
<tr>
<td>Connecting to circuits with the following peak values</td>
<td>Negligible</td>
</tr>
<tr>
<td>Electrical isolation</td>
<td></td>
</tr>
<tr>
<td>The 3 outputs, the input BE2 and the basic device are electrically isolated from each other</td>
<td>840 V DC, 1 s</td>
</tr>
</tbody>
</table>

---

1) Only in conjunction with the basic device 6DR5...-E... Only T4 permissible when using Iy module.
## Technical specifications

### Add-on modules

<table>
<thead>
<tr>
<th>Add-on modules</th>
<th>Without Ex protection/with Ex d protection</th>
<th>With Ex ia/ib protection</th>
<th>With Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIA module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limit transmitter with slot-type initiators and alarm output</td>
<td>6DR4004-8G (not for Ex d version)</td>
<td>6DR4004-6G</td>
<td></td>
</tr>
<tr>
<td>Ex protection</td>
<td>Without</td>
<td>II 2 G Ex ia/ib IIC T6</td>
<td>II 3 G Ex nA nL [nL] IIC T6</td>
</tr>
<tr>
<td>Connection</td>
<td>2-wire system to EN 60947-5-6 (NAMUR), for switching amplifier to be connected on load side</td>
<td>Type SJ2-SN</td>
<td></td>
</tr>
<tr>
<td>2 slot-type initiators</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function</td>
<td>NC (normally closed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecting to circuits with the following peak values</td>
<td>rated voltage 8 V</td>
<td>Intrinsic safe switching amplifier acc. to EN 60947-5-6</td>
<td>at &quot;nA&quot; and &quot;nL&quot;:</td>
</tr>
<tr>
<td>Internal capacitance Ci</td>
<td>-</td>
<td>$U_i = 15.5\ V, I_i = 25\ mA, Pi = 64\ mW$</td>
<td>$U_i = 15.5\ V, I_i = 25\ mA$</td>
</tr>
<tr>
<td>Internal inductance Li</td>
<td>-</td>
<td>$L_i = 41\ nF$</td>
<td>$L_i = 100\ \mu H$ (at &quot;nL&quot;)</td>
</tr>
<tr>
<td>Electrical isolation</td>
<td>The 3 outputs are electrically isolated from the basic device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limit value contact module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limit transmitter with mechanical ground contact and alarm output</td>
<td>6DR4004-8K (not for Ex d version)</td>
<td>6DR4004-6K</td>
<td></td>
</tr>
<tr>
<td>Limit transmitter A1, A2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex protection</td>
<td>Without</td>
<td>II 2 G Ex ia/ib IIC T6</td>
<td>II 3 G Ex nL [nL] IIC T6</td>
</tr>
<tr>
<td>Max. switching current AC/DC</td>
<td>4 A</td>
<td>Connection to intrinsically safe circuit with maximum values:</td>
<td>$U_i = 30\ V$, $I_i = 100\ mA$, $P_i = 750\ mW$</td>
</tr>
<tr>
<td>Max. switching voltage AC/DC</td>
<td>250 V/24 V</td>
<td>$U_i = 30\ V$, $I_i = 100\ mA$, $P_i = 750\ mW$</td>
<td>$U_i = 30\ V$, $I_i = 100\ mA$, $P_i = 750\ mW$</td>
</tr>
<tr>
<td>Internal capacitance Ci</td>
<td>-</td>
<td>$C_i ≤ 5.2\ \mathrm{nF}$</td>
<td>$C_i ≤ 5.2\ \mathrm{nF}$ (at &quot;nL&quot;)</td>
</tr>
<tr>
<td>Internal inductance Li</td>
<td>-</td>
<td>$L_i ≤ 20\ \mathrm{mA}$</td>
<td>$L_i ≤ 20\ \mathrm{mA}$</td>
</tr>
<tr>
<td>Electrical isolation</td>
<td>The 3 outputs are electrically isolated from the basic device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Electrical isolation

The 3 outputs are electrically isolated from the basic device:

- **Test voltage:** 840 V DC, 1 s
- **Alarm output:**
  - To switching amplifier according to EN 60947-5-6 (NAMUR), $U_{H} = 8.2\ V, R_{i} = 1\ k\Omega$
  - Signal state High (not activated): $R = 1.1\ k\Omega, R_{i} = 10\ k\Omega, C_i ≤ 5.2\ \mathrm{nF, L}_i ≤ 20\ \mathrm{mA}$
  - Signal state Low (activated): $R_{i} = 10\ k\Omega, C_i ≤ 5.2\ \mathrm{nF}$ (at "nL")
  - $U_{i} = 15.5\ V, I_{i} = 25\ mA, P_{i} = 64\ mW, L_i = 41\ nF, C_i = 5.2\ \mathrm{nF}$ (at "nL")
  - **Internal capacitance Ci:** Negligible
  - **Internal inductance Li:** Negligible
  - **Power supply UH:** $U_{i} ≤ 35\ V, I_{i} ≤ 20\ mA$
  - **Connecting to circuits with the following peak values:**
    - Intrinsically safe switching amplifier acc. to EN 60947-5-6
      - $U_{i} = 15.5\ V, I_{i} = 25\ mA, P_{i} = 64\ mW$
      - $U_{i} = 15.5\ V, I_{i} = 25\ mA, P_{i} = 64\ mW$
    - **Internal capacitance Ci:** Negligible
    - **Internal inductance Li:** Negligible
    - **Power supply UH:** $U_{i} ≤ 35\ V, I_{i} ≤ 20\ mA$

### Limit value contact module

| Limit transmitter with mechanical ground contact and alarm output | 6DR4004-8K (not for Ex d version) | 6DR4004-6K |                           |
| Limit transmitter A1, A2 |                                           |                           |                           |
| Ex protection  | Without                                   | II 2 G Ex ia/ib IIC T6    | II 3 G Ex nL [nL] IIC T6 |
| Max. switching current AC/DC | 4 A                                     | Connection to intrinsically safe circuit with maximum values: | $U_i = 30\ V$, $I_i = 100\ mA$, $P_i = 750\ mW$ |
| Max. switching voltage AC/DC | 250 V/24 V                               | $U_i = 30\ V$, $I_i = 100\ mA$, $P_i = 750\ mW$ | $U_i = 30\ V$, $I_i = 100\ mA$, $P_i = 750\ mW$ |
| Internal capacitance Ci | -                                     | $C_i ≤ 5.2\ \mathrm{nF}$ | $C_i ≤ 5.2\ \mathrm{nF}$ (at "nL") |
| Internal inductance Li | -                                     | $L_i ≤ 20\ \mathrm{mA}$ | $L_i ≤ 20\ \mathrm{mA}$ |
| Electrical isolation | The 3 outputs are electrically isolated from the basic device |                               |                           |
| Test voltage   |                                           |                           |                           |
| Alarm output   |                                           |                           |                           |
|                  |                                           |                           |                           |
|                  |                                           |                           |                           |

### Electrical isolation

The 3 outputs are electrically isolated from the basic device:

- **Test voltage:** 3150 V DC, 2 s
- **Alarm output:**
  - To switching amplifier according to EN 60947-5-6 (NAMUR), $U_{H} = 8.2\ V, R_{i} = 1\ k\Omega$
  - Signal state High (not activated): $R = 1.1\ k\Omega, R_{i} = 10\ k\Omega, C_i ≤ 5.2\ \mathrm{nF, L}_i ≤ 20\ \mathrm{mA}$
  - Signal state Low (activated): $R_{i} = 10\ k\Omega, C_i ≤ 5.2\ \mathrm{nF}$ (at "nL")
  - $U_{i} = 15.5\ V, I_{i} = 25\ mA, P_{i} = 64\ mW, L_i = 41\ nF, C_i = 5.2\ \mathrm{nF}$ (at "nL")
  - **Internal capacitance Ci:** Negligible
  - **Internal inductance Li:** Negligible
  - **Power supply UH:** $U_{i} ≤ 35\ V, I_{i} ≤ 20\ mA$
  - **Connecting to circuits with the following peak values:**
    - Intrinsically safe switching amplifier acc. to EN 60947-5-6
      - $U_{i} = 15.5\ V, I_{i} = 25\ mA, P_{i} = 64\ mW$
      - $U_{i} = 15.5\ V, I_{i} = 25\ mA, P_{i} = 64\ mW$
    - **Internal capacitance Ci:** Negligible
    - **Internal inductance Li:** Negligible
    - **Power supply UH:** $U_{i} ≤ 35\ V, I_{i} ≤ 20\ mA$
## Add-on modules

<table>
<thead>
<tr>
<th>Add-on modules</th>
<th>Without Ex protection/ with Ex d protection</th>
<th>With Ex ia/ib protection</th>
<th>With Ex n protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I_y module</strong></td>
<td>6DR4004-8J</td>
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<td>6DR4004-6J</td>
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<td>DC output for position feedback</td>
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<tr>
<td>Rated signal range</td>
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<tr>
<td>Total operating range</td>
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<tr>
<td>Power supply U_H</td>
<td>+12 ... +35 V</td>
<td>+12 ... +30 V</td>
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<tr>
<td>External loads R_0 [kΩ]</td>
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<td>Transmission error</td>
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<tr>
<td>Temperature influence effect</td>
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<tr>
<td>Resolution</td>
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<tr>
<td>Residual ripple</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Internal capacitance C_i</td>
<td></td>
<td>11 nF</td>
<td>11 nF (at “nL”)</td>
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<tr>
<td>Internal inductance L_i</td>
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<td>Negligible</td>
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<tr>
<td>For connection to circuits with the following peak values</td>
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<td>In intrinsically safe:</td>
<td>In intrinsically safe:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical isolation</td>
<td>Electrically isolated from the basic device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test voltage</td>
<td>840 V DC, 1 s</td>
<td></td>
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</tr>
</tbody>
</table>

### NCS sensor

- **Position range**
  - **Linear actuator**: 3...130 mm (0.12...5.12 inch), to 200 mm (7.87 inch) on request
  - **Part-turn actuator**: 30°...100° (not for Ex d version)
- **Linearity (after correction by SIPART PS2)**
  - **Linear actuator**: ± 1 %
  - **Part-turn actuator**: ± 1 %
- **Hysteresis**: ± 0.2 %
- **Continuous working temperature**
  - **-40 °C ... +85 °C**
  - **(-40 °F ... +185 °F)**
  - **Extended temperature range on request**
  - **7 mm (0.28 inch), 5...54 Hz**
  - **500 m/s² (1640 ft/s²), 80...200 Hz**
- **Vibration resistance Harmonic oscillations (sine-wave) according to EN 60062-2-6/05.96**
- **For connection to circuits with the following peak values**
  - **Intrinsically safe**
  - **Internal capacitance C_i**: 10 nF
  - **Internal inductance L_i**: 240 μH
- **Degree of protection of enclosure**: IP68/NEMA 4X

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<table>
<thead>
<tr>
<th>Selection and ordering data</th>
<th>Order No.</th>
<th>Selection and ordering data</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SIPART PS2 electropneumatic positioner, without Ex protection, Ex ia/ib and Ex n</strong></td>
<td>6DR5 0 0 0 A</td>
<td><strong>SIPART PS2 electropneumatic positioner, without Ex protection, Ex ia/ib and Ex n</strong></td>
<td>6DR5 0 0 0 A</td>
</tr>
<tr>
<td><strong>Version</strong></td>
<td></td>
<td><strong>Option modules</strong></td>
<td></td>
</tr>
<tr>
<td>2-wire (4 to 20 mA)</td>
<td></td>
<td>Installed, incl. 2nd cable gland</td>
<td></td>
</tr>
<tr>
<td>• Without HART</td>
<td></td>
<td>Without</td>
<td></td>
</tr>
<tr>
<td>• With HART, not explosion-protected</td>
<td></td>
<td>Iy module for position feedback signal</td>
<td></td>
</tr>
<tr>
<td>2-, 3-, 4-wire (0/4 to 20 mA)</td>
<td></td>
<td>(4 ... 20 mA) (6DR4004-J)</td>
<td></td>
</tr>
<tr>
<td>• With HART, explosion-protected</td>
<td></td>
<td>EMC filter module for external position sensor in the SIPART PS2 enclosure</td>
<td></td>
</tr>
<tr>
<td>• Without HART, not explosion-protected</td>
<td></td>
<td>(C73451-A430-D23), NCS sensor 6DR4004-B6/N12/2/30 and external position sensing with non-Siemens potentiometer</td>
<td></td>
</tr>
<tr>
<td>PROFIBUS PA connection</td>
<td></td>
<td>Iy module and EMC filter module for external position sensor</td>
<td></td>
</tr>
<tr>
<td>FOUNDATION Fieldbus connection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>For actuator</strong></td>
<td></td>
<td><strong>Customer-specific design</strong></td>
<td></td>
</tr>
<tr>
<td>Single-action</td>
<td></td>
<td>Without</td>
<td></td>
</tr>
<tr>
<td>Double-action</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td></td>
<td><strong>Brief instructions</strong></td>
<td></td>
</tr>
<tr>
<td>Makrolon</td>
<td></td>
<td>German/English</td>
<td></td>
</tr>
<tr>
<td>Aluminum; only single-action</td>
<td></td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Stainless steel (without window)</td>
<td></td>
<td>French/Spanish/Italian</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td></td>
</tr>
<tr>
<td><strong>Explosion protection</strong></td>
<td></td>
<td><strong>Mounted pressure gauge block</strong></td>
<td></td>
</tr>
<tr>
<td>Without</td>
<td></td>
<td>Without</td>
<td></td>
</tr>
<tr>
<td>With explosion protection Ex ia/ib (CENELEC/FM/CSA)</td>
<td></td>
<td>Single-action G½, scaled in MPa and bar</td>
<td></td>
</tr>
<tr>
<td>With explosion protection Ex n (CENELEC/ATEX)</td>
<td></td>
<td>Double-action G½, scaled in MPa and bar</td>
<td></td>
</tr>
<tr>
<td>• For zone 2 and zone 22 (dust)</td>
<td></td>
<td>Single-action ¼-18 NPT, scaled in MPa and psi</td>
<td></td>
</tr>
<tr>
<td>Enclosure: Aluminum or stainless steel, each without inspection window in the cover</td>
<td></td>
<td>Double-action ¼-18 NPT, scaled in MPa and psi</td>
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</tr>
<tr>
<td>• For zone 2¹(2)</td>
<td></td>
<td>Double-action ¼-18 NPT, scaled in MPa and psi</td>
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<tr>
<td>Enclosure: Aluminum or Makrolon, each with inspection window in the cover</td>
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<td></td>
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</tr>
<tr>
<td><strong>Connection thread electrical/pneumatic</strong></td>
<td></td>
<td><strong>Further designs</strong></td>
<td></td>
</tr>
<tr>
<td>M20 x 1.5 / G½</td>
<td></td>
<td>Add “Z” to Order No. and specify Order Code.</td>
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<tr>
<td>½-14 NPT / ¼-18 NPT</td>
<td></td>
<td><strong>Gauge made of steel</strong></td>
<td></td>
</tr>
<tr>
<td>M20 x 1.5 / ¼-18 NPT</td>
<td></td>
<td>Aluminium block, single-action G½, scaled in MPa, bar and psi</td>
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<tr>
<td>½-14 NPT / G½(3)</td>
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<td></td>
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<tr>
<td>With plug M12 / G½</td>
<td></td>
<td>Pneumatic terminal strip made of stainless steel 316 for device with Macrolon enclosure</td>
<td></td>
</tr>
<tr>
<td>With plug M12 / ¼-18 NPT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Limit monitor</strong></td>
<td></td>
<td><strong>Manometer aus Edelstahl</strong></td>
<td></td>
</tr>
<tr>
<td>Installed, incl. 2nd cable gland</td>
<td></td>
<td>Stainless steel block 316, single-action G½, Skalierung MPa, bar, psi</td>
<td></td>
</tr>
<tr>
<td>Without</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Alarm module; electronic (6DR4004-A)</td>
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<td></td>
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<tr>
<td>SIA module; slot-type initiators (6DR4004-G)</td>
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<tr>
<td>Limit value contact module (mechanical switching contacts (6DR4004-K)</td>
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<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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**Option modules**

- Installed, incl. 2nd cable gland
- Without
- Iy module for position feedback signal (4 ... 20 mA) (6DR4004-J)
- EMC filter module for external position sensor in the SIPART PS2 enclosure (C73451-A430-D23), NCS sensor 6DR4004-B6/N12/2/30 and external position sensing with non-Siemens potentiometer
- Iy module and EMC filter module for external position sensor

**Customer-specific design**

- Without

**Brief instructions**

- German/English
- French/Spanish/Italian

**Mounted pressure gauge block**

- Without
- Single-action G½, scaled in MPa and bar
- Double-action G½, scaled in MPa and bar
- Single-action ¼-18 NPT, scaled in MPa and psi
- Double-action ¼-18 NPT, scaled in MPa and psi
- Double-action ¼-18 NPT, scaled in MPa and psi

**Further designs**

Add “Z” to Order No. and specify Order Code.

- **Gauge made of steel**
  - Aluminium block, single-action G½, scaled in MPa, bar and psi
  - Aluminium block, double-action G½, scaled in MPa, bar and psi
  - Stainless steel block 316, single-action G½, scaled in MPa, bar and psi
  - Stainless steel block 316, double-action G½, Skalierung MPa, bar, psi
  - Stainless steel block 316, double-action ¼-18 NPT, scaled in MPa, bar and psi
  - Stainless steel block 316, double-action ¼-18 NPT, scaled in MPa, bar and psi
  - Stainless steel block 316, double-action ¼-18 NPT, scaled in MPa, bar and psi

- **Manometer aus Edelstahl**
  - Stainless steel block 316, single-action ¼-18 NPT, scaled in MPa, bar and psi

- **Pneumatic terminal strip made of stainless steel 316**

- **Version with stainless steel sound absorbers**
  - Standard with stainless steel enclosure
### Selection and ordering data

<table>
<thead>
<tr>
<th>Measuring point number (TAG No.)</th>
<th>Measuring point description</th>
<th>Measuring point text</th>
<th>TAG plate made of stainless steel, 3-line</th>
<th>Preset bus address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. 8 characters for HART, max. 32 characters for PROFIBUS PA, FOUNDATION Fieldbus and 4...20 mA, specify in plain text: Y17: .......</td>
<td>Max. 16 characters for HART, max. 32 characters for PROFIBUS PA, FOUNDATION Fieldbus and 4...20 mA, specify in plain text: Y15: .......</td>
<td>Max. 24 characters for HART, max. 32 characters for PROFIBUS PA, FOUNDATION Fieldbus and 4...20 mA, specify in plain text: Y16: .......</td>
<td>TAG plate made of stainless steel, 3-line: Text line 1: Plain text from Y17 Text line 2: Plain text from Y15 Text line 3: Plain text from Y16</td>
<td>Specify in plain text: Y25: ....... (only for 6DR55.. and 6DR56..)</td>
</tr>
</tbody>
</table>

**Order No.**

- SIPART PS2 electropneumatic positioner, without Ex protection, Ex ia/ib and Ex n: 6 DR 5 77 - 0 77 7 1 77 7

★ Available ex stock (select combinations)

1. Maximum impact energy on the enclosure: 1 Joule.
2. For device versions in Makrolon enclosure: it is essential to prevent electrostatic charging.
3. Maximum torque on the cable gland: 67 Nm.
4. Connection thread, electrical using NPT adapter on Makrolon and aluminium enclosure.
5. Available in April 2010
6. Only for Makrolon enclosure, for other enclosures on request.
## Electropneumatic positioners

### SIPART PS2

#### Ordering data

<table>
<thead>
<tr>
<th>SIPART PS2 electropneumatic positioner, Ex d explosion protection, aluminum enclosure, without cable gland</th>
<th>6 DR 5</th>
<th>5 - 0 E</th>
<th>-</th>
<th>A</th>
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</thead>
<tbody>
<tr>
<td><strong>Selection and ordering data</strong></td>
<td><strong>Order No.</strong></td>
<td><strong>Order Code</strong></td>
<td><strong>Further designs</strong></td>
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<tr>
<td>SIPART PS2 electropneumatic positioner, Ex d explosion protection, aluminum enclosure, without cable gland</td>
<td>6 DR 5</td>
<td>5 - 0 E</td>
<td>-</td>
<td>A</td>
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<tr>
<td>Version</td>
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<tr>
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<td></td>
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<tr>
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<td>R2C</td>
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<td>R2D</td>
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<td>1/4-14 NPT / ½-18 NPT</td>
<td>G</td>
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</tr>
<tr>
<td></td>
<td>M20 x 1.5 / G¼</td>
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</tr>
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<td>M20 x 1.5 / ½-18 NPT</td>
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<td>1/4-14 NPT / G¼</td>
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<tr>
<td>Limit monitor</td>
<td>Integrated</td>
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</tr>
<tr>
<td></td>
<td>Without</td>
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<td></td>
</tr>
<tr>
<td>Alarm module; electronic (6DR4004-8A)</td>
<td>y module for position feedback signal (4 ... 20 mA)</td>
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<tr>
<td>Option modules</td>
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</tr>
<tr>
<td></td>
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<td>Customer-specific design</td>
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<tr>
<td>Brief instructions</td>
<td>German/English</td>
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<tr>
<td></td>
<td>French/Spanish/Italian</td>
<td>B</td>
<td></td>
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</tr>
<tr>
<td>Mounted pressure gauge block</td>
<td>Single-action G¼, scaled in MPa and bar</td>
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<td>Single-action ½-18 NPT, scaled in MPa and bar</td>
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<td></td>
<td>Single-action ¾-18 NPT, scaled in MPa and bar</td>
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<td>Gauge version with order code R. (see &quot;Further designs&quot;)</td>
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</table>

### Further designs

Add “-Z” to Order No. and specify Order Code.

- **Gauge made of steel.**
  - Ex d explosion protection, aluminum block, single-action G¼, scaled in MPa, bar and psi
  - Ex d explosion protection, aluminum block, double-action G¼, scaled in MPa, bar and psi

- **Gauge made of stainless steel 316.**
  - Ex d explosion protection, stainless steel block 316, single-action G¼, scaled in MPa, bar and psi
  - Ex d explosion protection, stainless steel block 316, double-action G¼, scaled in MPa, bar and psi

- **Measuring point number (TAG No.).**
  - Max. 8 characters for HART, max. 32 characters for PROFIBUS PA and FOUNDATION Fieldbus, specify in plain text: Y17: ........

- **Measuring point description.**
  - Max. 16 characters for HART, max. 32 characters for PROFIBUS PA and FOUNDATION Fieldbus, specify in plain text: Y15: ........

- **Measuring point text.**
  - Max. 24 characters for HART, max. 32 characters for PROFIBUS PA and FOUNDATION Fieldbus, specify in plain text: Y16: ........

- **TAG plate made of stainless steel, 3-line.**
  - Text line 1: Plain text from Y17
  - Text line 2: Plain text from Y15
  - Text line 3: Plain text from Y16

- **Preset bus address.**
  - Specify in plain text: Y25: ........

1) Available in April 2010
2) On request
### Selection and ordering data

**Order No.**

<table>
<thead>
<tr>
<th>NCS sensor</th>
<th>for non-contacting detection of position (not for Ex d version), cable length 6 m (19.68 ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non explosion-proof</td>
<td>6DR4004-8</td>
</tr>
<tr>
<td>Explosion-protected, Ex ia/ib</td>
<td>6DR4004-6</td>
</tr>
<tr>
<td>For part-turn actuators, without mounting console</td>
<td>1</td>
</tr>
<tr>
<td>For linear actuators up to 14 mm (0.55 inch), without mounting bracket</td>
<td>2</td>
</tr>
<tr>
<td>For linear actuators &gt;14 mm (0.55 inch), required for the controller unit (see below)</td>
<td>3</td>
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</tbody>
</table>

### Selection and ordering Data

**Accessories**

<table>
<thead>
<tr>
<th>ACCESSORIES</th>
<th>ORDER NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCS sensor</td>
<td>6DR4004-8</td>
</tr>
<tr>
<td>Non explosion-proof</td>
<td>6DR4004-6</td>
</tr>
<tr>
<td>Explosion-protected, Ex ia/ib</td>
<td>6DR4004-1</td>
</tr>
<tr>
<td>For part-turn actuators, without mounting console</td>
<td>6DR4004-2</td>
</tr>
<tr>
<td>For linear actuators up to 14 mm (0.55 inch), without mounting bracket</td>
<td>6DR4004-3</td>
</tr>
<tr>
<td>For linear actuators &gt;14 mm (0.55 inch), required for the controller unit (see below)</td>
<td>6DR4004-4</td>
</tr>
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### Ordering data

**Accessories**

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<tbody>
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<td>6DR4004-2Q</td>
</tr>
<tr>
<td>6DR4004-1Q</td>
</tr>
<tr>
<td>6DR4004-2Q</td>
</tr>
</tbody>
</table>

**6DR4004-2Q**

Gauge made of stainless steel, stainless steel block, double-action G ¼", scaled in MPa, bar and psi

**6DR4004-1Q**

Gauge made of stainless steel, stainless steel block, single-action ¼"-8 NPT, scaled in MPa, bar and psi

**6DR4004-2Q**

Gauge made of stainless steel, stainless steel block, double-action ¼"-8 NPT, scaled in MPa, bar and psi

**6DR4004-8**

Two terminal blocks made of stainless steel 316. For replacement of the aluminum terminal blocks in the 6DR4004-8V, -8VK and -8VL mounting kits for NAMUR linear actuators

**6DR4004-9**

Roll and disk made of stainless steel 316. For replacement of the Teflon roll and aluminum disk in the 6DR4004-8, -8VK and -8VL mounting kits for NAMUR linear actuators

**6DR4004-8D**

Pneumatic terminal strips made of stainless steel 316. For replacement of the pneumatic terminal strip made of aluminum for the SIPART PS2 with Macrolon enclosure

single-action with G ¼"

double-action with G ¼"

double-action with ¼-18 NPT

double-action with ¼-18 NPT

**6DR4004-1R**

Mounting kit for NAMUR part-turn actuators

(VDI/VDE 3845, with plastic coupling wheel, without mounting console)

**6DR4004-2R**

Mounting kit for NAMUR part-turn actuators

(VDI/VDE 3845, with plastic coupling wheel, without mounting console)

The following mounting consoles can be used with the NAMUR part-turn actuator mounting kit 6DR4004-8D.

**6DR4004-4D**

Size W x L x H (H = height of shaft butt)

- 30 x 60 x 20 mm
- 30 x 80 x 30 mm
- 30 x 130 x 50 mm
- 30 x 130 x 50 mm
- 30 x 130 x 50 mm

**6DR4004-8D**

Mounting kit for other part-turn actuators

The following mounting consoles can be used together with the NAMUR part-turn actuator mounting kit 6DR4004-8D.

SPX (DEZURIK) Power Rac, sizes R1, R1A, R2 and R2A

Masonell Camflex II

Fisher 1051/1052, size 33

**6DR4004-8S**

Mounting kit for NAMUR linear actuators

NAMUR linear actuator mounting kit with short lever arm (2 to 35 mm)

- Lever arm for travels from 35 mm to 130 mm (1.38 inch to 5.12 inch)
- Reduced mounting kit for linear actuator (like 6DR4004-8V but without fixing angle and U-bolt), with short lever with up to 35 mm (1.38 inch) travel
- Reduced mounting kit for linear actuator (like 6DR4004-8V but without fixing angle and U-bolt), with short lever with up to 35 mm (1.38 inch) travel
Electropneumatic positioners

SIPART PS2

Ordering data

Accessories

Mounting kit for other linear actuators
- Retrofitting kit for Moore series 72 and 750 valve positioners
- Fisher type 657/667, size 30 to 80
- Samson actuator type 3277 (yoke dimension H5 = 101 mm) (integrated connection without tube), not for Ex d

Pipe mounting
Mounting bracket for pipe mounting of the SIPART PS2 positioner (e.g. when using the NCS sensor)

Manometer made from plastic, including pressure gauge
For single-action SIPART PS2 positioner (2 manometers, scaled in MPa and bar)
For double-action SIPART PS2 positioner (3 manometers, scaled in MPa and bar)
For single-action SIPART PS2 positioner with NPT thread (2 manometers, scaled in MPa and psi)
For double-action SIPART PS2 positioner with NPT thread (3 manometers, scaled in MPa and psi)

Connection block, for safety solenoid valve with extended mounting flange to NAMUR
- For mounting to IEC 534-6
- For SAMSON actuator (integrated mounting) see above

External position detection system (with explosion protection to CENELEC/ATEX, Ex ia, ib) for separate mounting of position sensor and controller (not for Ex d version), comprising SIPART PS2 Makrolon casing with integral potentiometer and sliding clutch (without electronics and valve block). The EMC filter module is additionally required for the controller unit. (separate ordering item, see below).

Documentation (see notes below)
Instruction Manual for SIPART PS2
- German/English
- French/Italian/Spanish

Instruction Manual for SIPART PS2 PROFIBUS PA
- German/English
- French/Italian/Spanish

Instruction Manual for NCS Sensor
- German/English/French/Spanish/Italian

SIPART PS2 device documentation

CD-ROM with complete documentation for all device versions

Device manual for SIPART PS2 (not PA and FF)
- German
- English

Manual for SIPART PS2 PROFIBUS PA
- German
- English

SITRANS I200 output isolator HART (see "SITRANS I supply units and isolation amplifiers")
- 24 V DC power supply
- Available ex stock (select combinations).

Note:
All the above mentioned manuals are included on CD-ROM and can be downloaded from www.siemens.de/sipartps2.

Following manuals are available in addition as downloads from the Internet or are included on CD-ROM:
- Instruction Manual Compact SIPART PS2 FF, Electropneumatic Positioner (6DR56..) with Foundation Fieldbus
  - German/English: A5E00214568
  - English: A5E00214569
- Instruction Manual SIPART PS2 FF, Electropneumatic Positioner (6DR56..) with FOUNDATION Fieldbus
  - German: A5E00214568
  - English: A5E00214569

Scope of delivery for positioner
- 1 SIPART PS2 positioner as ordered
- 1 CD-ROM with the complete documentation for all versions and accessories
- Manual "SIPART PS2 - Configuration At a Glance"

Special versions
On request

More Information

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**Dimensional drawings**

Makrolon and stainless steel enclosure (top), aluminum enclosure (center), Makrolon and aluminum enclosure (bottom), dimensions in mm (inch)

Flameproof enclosure left, dimensions in mm (inch)
**Electropneumatic positioners**

**SIPART PS2**

### Schematics

**Mounting onto part-turn actuators; mounting consoles (scope of delivery of actuator manufacturer), extract from VDI/VDE 3845, dimensions in mm (inch)**

- **Electric connection of 2-wire devices (6DR50.. and 6DR51..)**
  Devices of types 6DR50.. and 6DR51.. are operated in a 2-wire system.

- **Electric connection of PROFIBUS PA device (6DR55..) and Foundation Fieldbus device (6DR56..)**
  SIPART PS2 electropneumatic positioner, input circuit for 6DR55.. and 6DR56..

- **Electric connection of 2-, 3- and 4-wire device (6DR52.. and 6DR53..)**
  Devices of types 6DR52.. and 6DR53.. can be operated in a 2-, 3- and 4-wire system.

- **SIPART PS2 electropneumatic positioner, example of connection for communication through HART for 6DR52..**

- **SIPART PS2 electropneumatic positioner, input circuits for 6DR52.. and 6DR53..**

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Mounting kit for NAMUR linear actuators

- 1 mounting bracket
- 2 mounting prisms
- 1 U-bracket
- 1 lever arm with adjustable pick-up roll
- 2 U-bolts
- Various screws and lock washers

Mounting of SIPART PS2 on linear actuators

Mounting of SIPART PS2 Ex d on linear actuators
Electropneumatic positioners

SIPART PS2

Mounting kit

Mounting kit for NAMUR part-turn actuators

- 1 coupling wheel
- 1 driver pin
- 8 scales
- 1 pointer
- Various screws and lock washers

Caution: The mounting consoles and the screws for mounting onto the part-turn actuator are not included in the scope of delivery and must be provided by the customer (see "Technical specifications")

Mounting of SIPART PS2 on part-turn actuators

Mounting of SIPART PS2 Ex d on part-turn actuators