# Electropneumatic positioners

**SIPART PS2**

<table>
<thead>
<tr>
<th>Section</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2</td>
<td>Product overview</td>
</tr>
<tr>
<td>6/3</td>
<td>SIPART PS2</td>
</tr>
<tr>
<td>6/3</td>
<td>Technical description</td>
</tr>
<tr>
<td>6/8</td>
<td>Technical specifications</td>
</tr>
<tr>
<td>6/8</td>
<td>- all versions</td>
</tr>
<tr>
<td>6/9</td>
<td>- SIPART PS2</td>
</tr>
<tr>
<td>6/11</td>
<td>- SIPART PS2 PA</td>
</tr>
<tr>
<td>6/13</td>
<td>- SIPART PS2 FF</td>
</tr>
<tr>
<td>6/15</td>
<td>- Option modules</td>
</tr>
<tr>
<td>6/18</td>
<td>Ordering data</td>
</tr>
<tr>
<td>6/18</td>
<td>- SIPART PS2, PS2 PA, PS2 FF</td>
</tr>
<tr>
<td>6/19</td>
<td>- SIPART PS2 EEx-d, PS2 EEx-d PA, PS2 EEx-d FF</td>
</tr>
<tr>
<td>6/20</td>
<td>- Accessories</td>
</tr>
<tr>
<td>6/22</td>
<td>Dimensional drawings</td>
</tr>
<tr>
<td>6/23</td>
<td>Schematics</td>
</tr>
<tr>
<td>6/24</td>
<td>Mounting kits</td>
</tr>
</tbody>
</table>

## Software

**Sec. 8**

SIMATIC PDM, for parameterize HART and PROFIBUS PA devices

---

You can download all instructions, catalogs and certificates for SIPART PS2 free of charge at the following Internet address:

[www.siemens.com/sipartps2](http://www.siemens.com/sipartps2)
### Overview

<table>
<thead>
<tr>
<th>Application</th>
<th>Device description</th>
<th>Catalog page</th>
<th>Software for parameterization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electropneumatic positioners SIPART PS2</td>
<td>Position control Pneumatic linear or part-turn actuators, also for intrinsically-safe operation</td>
<td>SIPART PS2 Universal device for positioning pneumatic actuators • Connection: 4 to 20 mA • HART, PROFIBUS PA or Foundation Fieldbus • Local manual operation • Binary inputs and outputs • Diagnosis functions • Blocking function • Automatic startup</td>
<td>6/3</td>
</tr>
<tr>
<td></td>
<td>As above, but in flame-proof casing for explosion-proof application</td>
<td>SIPART PS2 As above, but in flameproof aluminium casing</td>
<td>6/3</td>
</tr>
</tbody>
</table>
Overview

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.

Benefits

SIPART PS2 positioners offer decisive advantages:

- Simple installation and automatic commissioning (self-adjustment of zero and span)
- Simple operation with
  - Local operation and configuration of the device using three input keys and a user-friendly two-line LCD
  - 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. characteristics and limits)
- Extensive diagnosis 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
- SIL (Safety Integrity Level) 2
- Can also be operated with natural gas

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-action actuators: in plastic, stainless steel or aluminium casings, as well as flameproof aluminium casing (EEx d)
- For double-action actuators: in plastic and stainless steel casing, as well as flameproof aluminium casing (EEx d)
- For non-hazardous applications
- For hazardous applications in the designs
  - as intrinsically-safe device (EEx ia/ib) or
  - in flameproof aluminium casing (EEx d) or
  - in EEx n design (non-sparking)

and in the versions:

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

Explosion-proof versions

The basic version of the device is available in an intrinsically-safe design with degree of protection EEx ia/ib or in a design with approval for zone 2/zone 22 (dust).

Operation in zone 1 is permitted when enclosed in the flameproof casing version SIPART PS2 EEx d. (see "Technical Data"). It is then permissible to use all option modules (except external actuator travel detection systems, SIA module, limit value contact module and NCS).
Electropneumatic positioners

SIPART PS2

Technical description

Stainless steel casing for extreme ambient conditions

The SIPART PS2 is available in a stainless steel casing (without window in the lid) 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:

- Casing 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,
  - FOUNDATION Fieldbus (FF) specification, IEC 61158-2, bus-supplied device
- Actuator travel 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 assembly. The circuit board container in the casing provides slots for separately ordered boards with the following functions:

l, y module:
- Position feedback as a two-wire signal 4 to 20 mA.

Alarm module (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/fitting fault occurs.
- Second binary input for alarm signals of for triggering safety reactions e.g. for 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. The module also contains an alarm output (see Alarm module).

Limit value signal via mechanical contacts (Limit value contact module)

Two limits can be signaled redundantly by switching contacts. A fault message output is also integrated in the module (see alarm module).

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 actuator travel 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 travel 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 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.
The NCS sensor consists of a non-contacting position sensor. All coupling elements are omitted such as coupling wheel and driver pin with part-turn actuators or lever and pick-up bracket with linear actuators up to 14 mm travel.

This results in:
- Even greater resistance to vibration and shock
- No wear of sensor
- Problem-free mounting on very small actuators
- Negligible hysteresis with very small travels.

The sensor does not require an additional power supply, i.e. SIPART PS2 (not for EEx d version) can be operated in a 2-wire system. The NCS (Non Contacting Position Sensor) consists of a potted sensor housing which must be mounted permanently and a magnet which is mounted on the spindle of linear actuators or on the shaft butt of part-turn actuators. For the version for travels > 14 mm (0.55 inch), the magnet and the NCS are remounted on a stainless steel frame and offer the same interface mechanically as the positioner itself, i.e. they can be mounted using the standard mounting kits 6DR4004-8V -8VK and -8VL.

The installation of an EMC filter module in the positioner (controller standard mounting kits 6DR4004-8V, -8VK and -8VL.

The angular error of the pick-up in cases where the assembly is non-floating gear transmission.

When connected in a 2-wire system, the SIPART PS2 draws its current only when it is needed, which means that it pays for itself within a very short time.

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.

Low air consumption

Pneumatic valve manifold with piezoelectric valve precontrol

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

Local operation

Local operation is performed using the built-in LCD and the three input keys. Switching between the operating levels Automatic, Manual, Configuring and Diagnosis is possible at the press of a button.
Electropneumatic positioners

SIPART PS2

Technical description

Status monitoring with 3-stage alarm concept
The intelligent electropneumatic SIPART PS2 positioner is equipped with additional monitoring functions. The status indications 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 (with 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 in the run-up to a serious valve or actuator fault, which can prevent an imminent 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.

This three-stage alarm hierarchy also allows early detection and signaling of other faults, such as the static friction of a packing box, the wearing of a valve plug/seating, or precipitations or incrustations on the fittings.

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 fieldbus interfaces. In this case, the HART, PROFIBUS 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 LCD 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 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 or 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
The following settings, for example, can be configured in configuring mode as required with the SIPART PS2 positioner:

- Input current range 0 to 20 mA or 4 to 20 mA
- Rising or falling characteristic 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.
- Function of binary inputs
- Function of alarm output etc.

The key aspects of configuring the different SIPART PS2 versions are largely identical.
SIPART PS2, electropneumatic positioner, function diagram

1. Motherboard with microcontroller and input circuit
2. Control panel with LCD and pushbuttons
3. Piezoelectric valve unit, always present
4. Valve unit, present as accessory in double-action positioner
5. I/O 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.
### Technical specifications

#### SIPART PS2 (all versions)

<table>
<thead>
<tr>
<th>General data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel range (linear actuators)</strong></td>
</tr>
<tr>
<td><strong>Angle of rotation (part-turn actuators)</strong></td>
</tr>
</tbody>
</table>

#### Technical specifications

**Controller**
- **Five-point switch**: Self-adjusting
- **Dead zone**
  - 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 effect**: ≤ 0.1%/10 K (≤ 0.1%/18 °F)

#### Binary input BE1 (terminals 9/10; electrically connected to the basic device)

- **On linear actuators**: Using attachment set 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 attachment set 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

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
</table>
| **Housing**
  - 6DR5..0:- (plastic)
  - 6DR5..1:- (metal)
  - 6DR5..2:- (stainless steel)
  - 6DR5..5:- (metal, pressure-proof)
| **Pressure gauge block**
  - Aluminium AlMgSi, anodized

<table>
<thead>
<tr>
<th>Vibration resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Harmonic oscillations (sine-wave) according to DIN EN 60062-2-6:05.96</strong></td>
</tr>
<tr>
<td><strong>Bumping (half-sine) to DIN EN 60068-2-29/03.95</strong></td>
</tr>
</tbody>
</table>

#### Dimensions
- **Pressure gauge block**: Aluminium AIMgSi, anodized

**Cycle time**
- **20 mA/HART device**: 20 ms
- **PA device**: 60 ms
- **FF device**: 60 ms (min. loop time)

**Ampere rating**
- **Outlet air valve (ventilate actuator)**
  - 3 bar (29 psi) 12 Nm³/h (50.8 USgpm)
  - 4 bar (58 psi) 12 Nm³/h (50.8 USgpm)
  - 6 bar (87 psi) 12 Nm³/h (50.8 USgpm)

**Certificate and approvals**
- For gases of fluid group 1, complies with requirements of article 3, paragraph 3 (sound engineering practice SEP)

### Pneumatic data

**Power supply**
- Compressed air, nitrogen or cleaned natural gas

**Pressure**
- 1.4 ... 7 bar (20.3 ... 101.5 psi)
- Sufficiently greater than max. drive pressure (actuating pressure)

**Air quality to ISO 8573-1**
- Class 2

**Solid particle size and density**
- Class 2

**Pressure dew point**
- 2 bar (29 psi)
- 4 bar (58 psi)
- 6 bar (87 psi)
- ≤ 0 °C (≤ 32 °F)

**Oil content**
- Suitable only for floating contact; max. contact load < 5 mA with 3 V

**Unthrottled flow**
- Inlet air valve (ventilate actuator)
  - 2 bar (29 psi) 3.6 Nm³/h (13.0 USgpm)
  - 4 bar (58 psi) 3.6 Nm³/h (13.0 USgpm)
  - 6 bar (87 psi) 3.6 Nm³/h (13.0 USgpm)

**Outlet air valve (exhaust actuator)**
- 2 bar (29 psi) 8.2 Nm³/h (36.1 USgpm)
- 4 bar (58 psi) 13.7 Nm³/h (60.3 USgpm)
- 6 bar (87 psi) 19.2 Nm³/h (84.5 USgpm)

**Valve leakage**
- < 6 ⋅ 10⁻⁶ Nm³/h (0.0026 USgpm)

**Throttle ratio**
- Adjustable up to : 1

**Power consumption in the controlled state**
- Power supply: 1.4 ... 7 bar (20.3 ... 101.5 psi)
- Sufficiently greater than max. drive pressure (actuating pressure)

**Certificate and approvals**
- For gases of fluid group 1, complies with requirements of article 3, paragraph 3 (sound engineering practice SEP)

**Temperature effect**
- ≤ 32 °F) make sure that the valves are flushed long enough with the dry medium.
## Technical specifications

<table>
<thead>
<tr>
<th>SIPART PS2</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof casing)</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 to ATEX</td>
<td>Without</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] IIIC T6 Dust II 3 D Ex tD A22 IP66 T100°C</td>
</tr>
<tr>
<td>Mounting location</td>
<td>Zone 1</td>
<td>Zone 1</td>
<td>Zone 2/22</td>
<td></td>
</tr>
<tr>
<td>Permissible ambient temperature for operation</td>
<td>-30 ... +80 °C (-22 ... +176 °F)</td>
<td></td>
<td>T4: -30 ... +80 °C (-22 ... +176 °F)</td>
<td>T5: -30 ... +65 °C (-22 ... +149 °F) T6: -30 ... +50 °C (-22 ... +122 °F)</td>
</tr>
</tbody>
</table>

### Electrical data

**Input**

- 2-wire connection (terminals 6/8)
  - Rated signal range: 4 ... 20 mA
  - Current to maintain the power supply: ≥ 3.6 mA
  - Required load voltage: U_b (corresponds to Ω at 20 mA)
    - Without HART (6DR50..)
      - Typical: 6.36 V (corresponds to 318 Ω)
      - Max.: 6.48 V (corresponds to 324 Ω)
    - Without HART (6DR53..)
      - Typical: 7.9 V (corresponds to 395 Ω)
      - Max.: 8.4 V (corresponds to 420 Ω)
    - With HART (6DR51..)
      - Typical: 6.6 V (corresponds to 330 Ω)
      - Max.: 6.72 V (corresponds to 336 Ω)
    - With HART (6DR52..)
      - Typical: 8.4 V (corresponds to 420 Ω)
      - Max.: 8.8 V (corresponds to 440 Ω)
  - Static destruction limit: ± 40 mA

**Internal capacitance C_i**

- Without HART: 22 nF (at "nL")
- With HART: 7 nF (at "nL")

**Internal inductance L_i**

- Without HART: 0.12 mH (at "nL")
- With HART: 0.24 mH (at "nL")

For connection to power circuits with the following max. ratings

- Intrinsic safe at "nA" and "ID":
  - U_i = 30 V DC
  - I_i = 100 mA
  - P_i = 1 W
- Intrinsically safe at "nL":
  - U_i = 30 V DC
  - I_i = 100 mA
### Electropneumatic positioners

**SIPART PS2**

#### Technical specifications

<table>
<thead>
<tr>
<th>SIPART PS2</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof casing)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex ndust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-/4-wire device (terminals 2/4 and 6/8)</td>
<td>18 ... 35 V DC</td>
<td>18 ... 35 V DC</td>
<td>18 ... 30 V DC</td>
<td>18 ... 30 V DC</td>
</tr>
<tr>
<td>• Power supply U_H</td>
<td>(U_H - 7.5 V)/2.4 kΩ [mA]</td>
<td>(U_H - 7.5 V)/2.4 kΩ [mA]</td>
<td>≤ 22 nF</td>
<td>(U_H - 7.5 V)/2.4 kΩ [mA]</td>
</tr>
<tr>
<td>• Current consumption I_H</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>• Internal capacitance C_i</td>
<td>–</td>
<td>–</td>
<td>≤ 0.12 mH</td>
<td>–</td>
</tr>
<tr>
<td>For connection to power circuits with the following max. ratings</td>
<td>–</td>
<td>–</td>
<td>intrinsically safe</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Un = 30 V DC</td>
<td>In = 100 mA</td>
<td>at &quot;nL&quot;:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ui = 30 V DC</td>
<td>li = 100 mA</td>
<td>Ul = 30 V DC</td>
<td>li = 100 mA</td>
</tr>
<tr>
<td></td>
<td>Pi = 1 W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current input I_W</td>
<td>Rated signal range 0/4 ... 20 mA</td>
<td>0/4 ... 20 mA</td>
<td>0/4 ... 20 mA</td>
<td>0/4 ... 20 mA</td>
</tr>
<tr>
<td>Load voltage at 20 mA</td>
<td>≤ 0.2 V (corresponds to 10 Ω)</td>
<td>≤ 0.2 V (corresponds to 10 Ω)</td>
<td>≤ 1 V (corresponds to 50 Ω)</td>
<td>≤ 1 V (corresponds to 50 Ω)</td>
</tr>
<tr>
<td>Internal capacitance C_i</td>
<td>–</td>
<td>–</td>
<td>22 nF</td>
<td>22 nF (at &quot;nL&quot;)</td>
</tr>
<tr>
<td>Internal inductance (L_i)</td>
<td>–</td>
<td>–</td>
<td>0.12 mH</td>
<td>0.12 mH (at &quot;nL&quot;)</td>
</tr>
<tr>
<td>For connection to power circuits with the following max. ratings</td>
<td>–</td>
<td>–</td>
<td>intrinsically safe</td>
<td>at &quot;nA&quot; and &quot;ID&quot;:</td>
</tr>
<tr>
<td></td>
<td>Un = 30 V DC</td>
<td>In = 100 mA</td>
<td>at &quot;nL&quot;:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ui = 30 V DC</td>
<td>li = 100 mA</td>
<td>Ul = 30 V DC</td>
<td>li = 100 mA</td>
</tr>
<tr>
<td></td>
<td>Pi = 1 W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical isolation</td>
<td>between U_H and I_W</td>
<td>between U_H and I_W</td>
<td>between U_H and I_W (2 intrinsically safe circuits)</td>
<td>between U_H and I_W</td>
</tr>
<tr>
<td>Test voltage</td>
<td>840 V DC (1 s)</td>
<td>840 V DC (1 s)</td>
<td>840 V DC (1 s)</td>
<td>840 V DC (1 s)</td>
</tr>
</tbody>
</table>

#### Connections

- **Electric**
  - Screw terminals 2.5 AWG28-12
  - Cable gland M20 x 1.5 or ½-14 NPT
  - EEx d certified cable gland M20 x 1.5, ½-14 NPT or 5/16-18 NPT

- **Pneumatic**
  - Female thread G¼ DIN EN ISO 228-1 or ¼-18 NPT
  - Female thread G¼ DIN EN ISO 228-1 or ¼-18 NPT
  - Female thread G¼ DIN EN ISO 228-1 or ¼-18 NPT
  - Female thread G¼ DIN EN ISO 228-1 or ¼-18 NPT

#### External position sensor (potentiometer or NCS, as option) with the following max. ratings

- **U₀** | – | – | 5 V | 5 V |
| **Io (static)** | – | – | 75 mA | 75 mA |
| **I₀ (short-time)** | – | – | 160 mA | – |
| **P₀** | – | – | 120 mW | 120 mW |
| Maximum permissible external capacitance C₀ | – | – | 1 µF | 1 µF |
| Maximum permissible external inductance L₀ | – | – | 1 mH | 1 mH |
## Technical specifications

<table>
<thead>
<tr>
<th><strong>SIPART PS2 PA</strong></th>
<th><strong>Basic device without Ex protection</strong></th>
<th><strong>Basic device with Ex d protection (flameproof casing)</strong></th>
<th><strong>Basic device with Ex ia/ib protection</strong></th>
<th><strong>Basic device with Ex n/dust protection</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion protection to ATEX</td>
<td>Without</td>
<td>Ex d II G Ex d II C T4/T5/T6</td>
<td>Ex ia/ib II 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>Zone 1</td>
<td>T4: -30 ... +65 °C (-22 ... +149 °F)</td>
<td>T4: -30 ... +60 °C (-22 ... +149 °F)</td>
<td>T4: -30 ... +65 °C (-22 ... +149 °F)</td>
</tr>
<tr>
<td>Permissible ambient temperature for operation</td>
<td>Zone 1</td>
<td>T5: -30 ... +65 °C (-22 ... +149 °F)</td>
<td>T5: -30 ... +60 °C (-22 ... +149 °F)</td>
<td>T5: -20 ... +60 °C (-4 ... +149 °F)</td>
</tr>
<tr>
<td>- Permissible ambient temperature for operation</td>
<td>Zone 2/22</td>
<td>T6: -30 ... +50 °C (-22 ... +122 °F)</td>
<td>T6: -30 ... +50 °C (-22 ... +122 °F)</td>
<td>T6: -20 ... +50 °C (-4 ... +122 °F)</td>
</tr>
</tbody>
</table>

### Electrical data

#### Input

- **Power supply (terminals 6/7):** Bus-supplied
- **Bus voltage:** 9 ... 32 V
- **Bus connection with supply unit:**
  - Max. supply voltage $U_o$: –
  - Max. short-circuit current $I_o$: –
  - Max. power $P_o$: 5.32 W
- **Bus connection with barrier:**
  - Max. supply voltage $U_o$: –
  - Max. short-circuit current $I_o$: –
  - Max. power $P_o$: –
- **Current consumption:** 11.5 mA ± 10%
- **Effective internal inductance $L_i$:** –
- **Effective internal capacitance $C_i$:** –
- **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): 13 ... 30 V
  - Effective Internal capacitance $C_i$: –
  - Effective internal inductance $L_i$: –
  - For connection to power supply with
    - Max. supply voltage $U_i$: –
    - Max. short-circuit current $I_i$: –
    - Maximum power $P_i$: –
  - Electrical isolation: Between basic device and the input for safety shutdown, as well as the outputs of the option modules
  - Test voltage: 840 V DC, 1 s

- **Effective inductive isolation:** Negligible

#### Output

- **Bus connection with supply unit:**
  - Max. supply voltage $U_o$: 17.5 V
  - Max. short-circuit current $I_o$: 380 mA
  - Max. power $P_o$: 570 mA
- **Bus connection with barrier:**
  - Max. supply voltage $U_o$: 24 V
  - Max. short-circuit current $I_o$: 250 mA
  - Max. power $P_o$: 1.2 W
- **Current consumption:** 11.5 mA ± 10%
- **Effective internal inductance $L_i$:** Negligible
- **Effective internal capacitance $C_i$:** 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
  - Signal status ‘1’ (shutdown not active): 13 ... 30 V
  - Effective Internal capacitance $C_i$: Negligible
  - Effective internal inductance $L_i$: Negligible
  - For connection to power supply with
    - Max. supply voltage $U_i$: 30 V
    - Max. short-circuit current $I_i$: 100 mA
    - Maximum power $P_i$: 1 W
  - Electrical isolation: Between basic device and the input for safety shutdown, as well as the outputs of the option modules
  - Test voltage: 840 V DC, 1 s

- **Effective inductive isolation:** Negligible

- **Effective inductive isolation:** Negligible

- **For connection to power supply with
  - Max. supply voltage $U_i$: 30 V
  - Max. short-circuit current $I_i$: 100 mA
  - Maximum power $P_i$: 1 W
- **Electrical isolation:** Between basic device and the input for safety shutdown, as well as the outputs of the option modules
## Electropneumatic positioners

### SIPART PS2 PA

#### Technical specifications

<table>
<thead>
<tr>
<th>SIPART PS2 PA</th>
<th>Basic device without Ex d protection</th>
<th>Basic device with Ex d protection (flameproof casing)</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>Layers 1 and 2 according to PROFIBUS PA, transmission technique 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><strong>C2 connections</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Device profile</strong></td>
<td>PROFIBUS PA profile B, version 3.0, more than 150 objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response time to master message</strong></td>
<td>Typical 10 ms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Device address</strong></td>
<td>126 (when delivered)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PC parameterizing software</strong></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

- **Electric**
  - Screw terminals 2.5 AWG28-12
  - Cable gland M20 x 1.5 or ½-14 NPT
  - Screw terminals 2.5 AWG28-12
  - Cable gland M20 x 1.5 or ½-14 NPT

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

**External position sensor (potentiometer or NCS; as option) with the following max. ratings**

- **U₀**
  - 5 V

- **I₀ (static)**
  - 75 mA

- **Iₚ (short-time)**
  - 160 mA

- **P₀**
  - 120 mW

- **Maximum permissible external capacitance C₀**
  - 1 µF

- **Maximum permissible external inductance L₀**
  - 1 mH
## Technical specifications

### SIPART PS2 FF

<table>
<thead>
<tr>
<th>Basic device with Ex protection (flameproof casing)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex ndust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex d II G Ex d II C T4/T5/T6</td>
<td>Ex ia/ib II G Ex ia/ib II C T6</td>
<td>Ex n II G Ex nA nL[nL] IIC T6</td>
</tr>
<tr>
<td>Zone 1</td>
<td>Zone 1</td>
<td>Zone 2/22</td>
</tr>
<tr>
<td>T4: -30 °C ... +80 °C (22 °C ... +176 °F)</td>
<td>T4: -30 °C ... +80 °C (22 °C ... +176 °F)</td>
<td>T4: -20 °C ... +75 °C (4 °C ... +167 °F)</td>
</tr>
<tr>
<td>T5: -30 °C ... +65 °C (22 °C ... +149 °F)</td>
<td>T5: -30 °C ... +65 °C (22 °C ... +149 °F)</td>
<td>T5: -20 °C ... +65 °C (4 °C ... +149 °F)</td>
</tr>
<tr>
<td>T6: -30 °C ... +50 °C (22 °C ... +122 °F)</td>
<td>T6: -30 °C ... +50 °C (22 °C ... +122 °F)</td>
<td>T6: -20 °C ... +50 °C (4 °C ... +122 °F)</td>
</tr>
</tbody>
</table>

### Explosion protection to ATEX

- **Without Ex protection**
- **Ex d** II G Ex d II C T4/T5/T6
- **Ex ia/ib** II G Ex ia/ib II C T6
- **Ex n** II G Ex nA nL[nL] IIC T6

### Mounting location

- **Zone 1**
- **Zone 2/22**

### Permissible ambient temperature for operation

- **Zone 1**
  - T4: -30 °C ... +80 °C (22 °C ... +176 °F)
  - T5: -30 °C ... +65 °C (22 °C ... +149 °F)
  - T6: -30 °C ... +50 °C (22 °C ... +122 °F)

### Electrical data

**Input**

- **Power supply (terminals 6/7)**
  - Bus-supplied
  - Bus-supplied
  - Bus-supplied
  - Bus-supplied

- **Bus voltage**
  - 9 ... 32 V
  - 9 ... 32 V
  - 9 ... 24 V
  - 9 ... 32 V

- **Bus connection with supply unit**
  - Intrinsically safe

- **Max. supply voltage**
  - Un = 32 V DC
  - FNICO

- **Max. short-circuit current**
  - 380 mA
  - 570 mA

- **Max. power**
  - 5.32 W
  - 5.32 W

- **Bus connection with barrier**
  - Intrinsically safe

- **Max. supply voltage**
  - 17.5 V
  - 17.5 V

- **Max. short-circuit current**
  - 380 mA
  - 570 mA

- **Max. power**
  - 5.32 W
  - 5.32 W

**Current consumption**

- 11.5 mA ± 10%
- 11.5 mA ± 10%
- 11.5 mA ± 10%
- 11.5 mA ± 10%

**Additional fault current**

- 0 mA
- 0 mA
- 0 mA
- 0 mA

**Effective internal inductance**

- Negligible
- Negligible
- Negligible
- Negligible

**Effective internal capacitance**

- Negligible
- Negligible
- Negligible
- Negligible

**Safety shutdown can be activated with coding bridge (terminals 81/82; electrically isolated from the basic device)**

**Input resistance**

- > 20 kΩ
- > 20 kΩ
- > 20 kΩ
- > 20 kΩ

**Signal status "0" (shutdown active)**

- 0 ... 4.5 V or unused
- 0 ... 4.5 V or unused
- 0 ... 4.5 V or unused
- 0 ... 4.5 V or unused

**Signal status "1" (shutdown not active)**

- 13 ... 30 V
- 13 ... 30 V
- 13 ... 30 V
- 13 ... 30 V

**Effective Internal capacitance**

- Negligible
- Negligible
- Negligible
- Negligible

**Effective internal inductance**

- Negligible
- Negligible
- Negligible
- Negligible

**For connection to power supply with**

- Max. supply voltage** Uj**
  - 30 V
  - 30 V
  - 30 V
  - 30 V

- Max. short-circuit current** Ij**
  - 100 mA
  - 100 mA
  - 100 mA
  - 100 mA

- Maximum power** Pj**
  - 1 W
  - 1 W
  - 1 W
  - 1 W

**Electrical isolation**

- Between basic device and the input for safety shutdown, as well as the outputs of the option modules
- 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 individual, intrinsically-safe circuits
- Between basic device and the input for safety shutdown, as well as the outputs of the option modules

**Test voltage**

- 840 V DC, 1 s
- 840 V DC, 1 s
- 840 V DC, 1 s
- 840 V DC, 1 s
## Technical specifications
### SIPART PS2 FF

<table>
<thead>
<tr>
<th>Communication</th>
<th>SIPART PS2 FF</th>
<th>Basic device without Ex protection</th>
<th>Basic device with Ex d protection (flameproof casing)</th>
<th>Basic device with Ex ia/ib protection</th>
<th>Basic device with Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications group and class</td>
<td>According to technical specification of the Fieldbus Foundation for H1 communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function blocks</td>
<td>Group 3, Class 31PS (publisher, subscriber)</td>
<td>1 resource block (RB2)</td>
<td>1 analog output function block (AO)</td>
<td>1 PID function block (PID)</td>
<td>1 transducer block (standard advanced positioner valve)</td>
</tr>
<tr>
<td>Execution times of the blocks</td>
<td>AO: 50 ms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical layer profile</td>
<td>123, 511</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FF registration</td>
<td>Tested with ITK 5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device address</td>
<td>22 (when delivered)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Connections

#### Electric
- Screw terminals 2.5
- AWG 28-12
- Cable gland M20 x 1.5 or ½-14 NPT
- EExd certified cable gland M20 x 1.5 or M25 x 1.5
- Screw terminals 2.5
- AWG 28-12
- Cable gland M20 x 1.5 or ½-14 NPT
- Screw terminals 2.5
- AWG 28-12
- Screw terminals 2.5
- AWG 28-12
- Screw terminals 2.5
- AWG 28-12

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

### External position sensor
- (potentiometer or NCS; as option)
  - \( U_0 \) < 5 V
  - \( I_0 \) < 75 mA
  - \( I_s \) < 160 mA
  - \( P_0 \) < 120 mW
  - Maximum permissible external capacitance \( C_0 \) < 1 μF
  - Maximum permissible external inductance \( L_0 \) < 1 mH
## Technical specifications

### Option modules

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

### Alarm module

- **Alarm module**: 6DR4004-8A (without Ex protection) 6DR4004-6A (with Ex protection) 6DR4004-6A (with Ex protection)

- **Binary alarm outputs A1, A2 and alarm output**

- **Signal status High (not responded)**
  - Active, \( R = 1 \, \text{k} \Omega \) +3/-1%*
  - Disabled, \( I_R < 60 \, \mu \text{A} \)

- **Signal status Low* (responded)**
  - When used in the flameproof casing the current consumption is limited to 10 mA per output.

- **Internal capacitance \( C_i \)**
  - 5.2 nF

- **Internal inductance \( L_i \)**
  - Negligible

- **Power supply \( U_H \)**
  - \( \leq 35 \, \text{V} \)

- **Connection to power circuits with the following max. ratings**

- **Power supply \( U_H \)**
  - \( \leq 35 \, \text{V} \)

- **Binary input BE2**

- **Electrically connected to the basic device**
  - Signal status 0
    - Contact load 3 V, 5 \( \mu \text{A} \)
  - Signal status 1
    - Contact load 3 V, 5 \( \mu \text{A} \)

- **Electrically isolated from the basic device**
  - Signal status 0
    - Contact load \( \leq 4.5 \, \text{V} \) or open
    - Contact load \( \geq 13 \, \text{V} \)
  - Signal status 1
    - Contact load \( \geq 25 \, \text{k} \Omega \)
  - Natural resistance
    - Static destruction limit \( \leq 35 \, \text{V} \)
    - Natural resistance
    - Static destruction limit
    - Internal inductance and capacitance
      - Negligible

- **Connection to power circuits with the following max. ratings**

- **Electrical isolation**
  - The 3 outputs, the input BE2 and the basic device are electrically isolated from each other.

### Test voltage

- 840 V DC, 1 s

---

¹ Only in conjunction with the basic device 6DR5...-E.... With Iy module only T4 permitted.
## Technical specifications

### Option modules

<table>
<thead>
<tr>
<th>Option modules</th>
<th>Without Ex protection</th>
<th>With Ex protection EEx ia/ib</th>
<th>With Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SIA module</strong></td>
<td>6DR4004-8G (without Ex protection) (not for Ex-d version)</td>
<td>6DR4004-6G (with Ex protection)</td>
<td>6DR4004-6G (with Ex protection)</td>
</tr>
<tr>
<td><strong>Limit switches with slot-type initiators and alarm output</strong></td>
<td>2-wire connection</td>
<td>2-wire connection</td>
<td>2-wire connection</td>
</tr>
<tr>
<td><strong>Ex protection</strong></td>
<td>Without</td>
<td>II 2 G EEx ia/ib IIC T6</td>
<td>III 3 G EEx nA [L] IIC T6</td>
</tr>
<tr>
<td><strong>Connection</strong></td>
<td>2-wire system to EN 60947-5-6 (NAMUR), for switching amplifier to be connected on load side</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2 slot-type initiators</strong></td>
<td>Type SJS2-SN</td>
<td>Type SJS2-SN</td>
<td>Type SJS2-SN</td>
</tr>
<tr>
<td><strong>Function</strong></td>
<td>NC (normally closed)</td>
<td>NC (normally closed)</td>
<td>NC (normally closed)</td>
</tr>
<tr>
<td><strong>Connection to power circuits with the following ratings</strong></td>
<td>nominal voltage 8 V</td>
<td>intrinsically safe switching amplifier EN 60947-5-6</td>
<td>at “a” and “b”:</td>
</tr>
<tr>
<td><strong>Current consumption:</strong></td>
<td>≥ 3 mA (limit value not responded)</td>
<td>UI = 15.5 V DC</td>
<td>Un = 15.5 V DC</td>
</tr>
<tr>
<td><strong>Internal capacitance</strong></td>
<td>–</td>
<td>1 mF (limit value not responded)</td>
<td>–</td>
</tr>
<tr>
<td><strong>Internal inductance</strong></td>
<td>–</td>
<td>100 mH (limit value not responded)</td>
<td>–</td>
</tr>
<tr>
<td><strong>Electrical isolation</strong></td>
<td>The 3 outputs are electrically isolated from the basic device.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Test voltage</strong></td>
<td>840 V DC, 1 s</td>
<td>840 V DC, 1 s</td>
<td>840 V DC, 1 s</td>
</tr>
<tr>
<td><strong>Alarm output</strong></td>
<td>2-wire system to EN 60947-5-6 (NAMUR), for switching amplifier to be connected on load side</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Signal status High (not active)</strong></td>
<td>R = 1.1 kΩ</td>
<td>≥ 2.1 mA</td>
<td>≥ 2.1 mA</td>
</tr>
<tr>
<td><strong>Signal status Low (active)</strong></td>
<td>R1 = 10 kΩ</td>
<td>≤ 1.2 mA</td>
<td>≤ 1.2 mA</td>
</tr>
<tr>
<td><strong>Internal capacitance C1</strong></td>
<td>–</td>
<td>5.2 nF</td>
<td>5.2 nF (bei „nL“)</td>
</tr>
<tr>
<td><strong>Internal inductance L1</strong></td>
<td>–</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td><strong>Power supply UH</strong></td>
<td>UH ≤ 35 V DC, I ≤ 20 mA</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
| **For connection to power with the following ratings** | – | Intrinsically safe switching amplifier EN 60947-5-6 | at “a” and “b”:
| **Max. switching voltage AC/DC** | 250 V / 24 V | UI = 15.5 V DC | Ua = 15.5 V DC |
| **Internal capacitance C1** | – | I1 = 25 mA | I1 = 25 mA |
| **Internal inductance L1** | – | P1 = 64 mW | P1 = 64 mW |
| **Electrical isolation** | The 3 outputs are electrically isolated from the basic device. | | |
| **Test voltage** | 3150 V DC, 2s | 3150 V DC, 2s | 3150 V DC, 2s |
| **Alarm output** | 2-wire system to EN 60947-5-6 (NAMUR), for switching amplifier to be connected on load side | | |
| **Signal status High (not active)** | R = 1.1 kΩ | ≥ 2.1 mA | ≥ 2.1 mA |
| **Signal status Low (active)** | R1 = 10 kΩ | ≤ 1.2 mA | ≤ 1.2 mA |
| **Internal capacitance C1** | – | 5.2 nF | 5.2 nF (bei „nL“) |
| **Internal inductance L1** | – | Negligible | Negligible |
| **Power supply UH** | UH ≤ 35 V DC, I ≤ 20 mA | – | – |
| **For connection to power with the following ratings** | – | Intrinsically safe switching amplifier EN 60947-5-6 | at „nL“:
| **Max. switching voltage AC/DC** | 250 V / 24 V | UI = 15.5 V DC | Ua = 15.5 V DC |
| **Internal capacitance C1** | – | I1 = 25 mA | I1 = 25 mA |
| **Internal inductance L1** | – | P1 = 64 mW | P1 = 64 mW |
### Technical specifications

<table>
<thead>
<tr>
<th>Option modules</th>
<th>Without Ex protection</th>
<th>With Ex ia/ib protection</th>
<th>With Ex n/dust protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I_y module</strong></td>
<td>6DR4004-8J (without Ex protection)</td>
<td>6DR4004-6J (with Ex protection)</td>
<td>6DR4004-6J (with Ex protection)</td>
</tr>
<tr>
<td>DC output for position feedback</td>
<td>2-wire connection</td>
<td>2-wire connection</td>
<td>2-wire connection</td>
</tr>
<tr>
<td>Nominal signal range</td>
<td>4 ... 20 mA, short-circuit-proof</td>
<td>4 ... 20 mA, short-circuit-proof</td>
<td>4 ... 20 mA, short-circuit-proof</td>
</tr>
<tr>
<td>Total operating range</td>
<td>3.6 ... 20.5 mA</td>
<td>3.6 ... 20.5 mA</td>
<td>3.6 ... 20.5 mA</td>
</tr>
<tr>
<td>Power supply U_H</td>
<td>+12 ... +35 V</td>
<td>+12 ... +30 V</td>
<td>+12 ... +30 V</td>
</tr>
<tr>
<td>External load R_0 [kΩ]</td>
<td>≤ (U_H [V] - 12 V) / i [mA]</td>
<td>≤ (U_H [V] - 12 V) / i [mA]</td>
<td>≤ (U_H [V] - 12 V) / i [mA]</td>
</tr>
<tr>
<td>Transmission error</td>
<td>≤ 0.3%</td>
<td>≤ 0.3%</td>
<td>≤ 0.3%</td>
</tr>
<tr>
<td>Temperature effect</td>
<td>≤ 0.1%/10 K (≤ 0.1%/18 °F)</td>
<td>≤ 0.1%/10 K (≤ 0.1%/18 °F)</td>
<td>≤ 0.1%/10 K (≤ 0.1%/18 °F)</td>
</tr>
<tr>
<td>Resolution</td>
<td>≤ 0.1%</td>
<td>≤ 0.1%</td>
<td>≤ 0.1%</td>
</tr>
<tr>
<td>Residual ripple</td>
<td>≤ 1%</td>
<td>≤ 1%</td>
<td>≤ 1%</td>
</tr>
<tr>
<td>Internal capacitance C_i</td>
<td>Negligible</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Internal inductance L_i</td>
<td>Negligible</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Electrical isolation</td>
<td>Electrically isolated from the basic device</td>
<td>Electrically isolated from the basic device</td>
<td>Electrically isolated from the basic device</td>
</tr>
<tr>
<td>Test voltage</td>
<td>840 V DC, 1 s</td>
<td>840 V DC, 1 s</td>
<td>840 V DC, 1 s</td>
</tr>
</tbody>
</table>

### NCS sensor

<table>
<thead>
<tr>
<th>(not for Ex d version)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position range</strong></td>
</tr>
<tr>
<td>Linear actuator: 3 ... 130 mm (0.12 ... 5.12 inch), to 200 mm (7.87 inch) on request</td>
</tr>
<tr>
<td>Part-turn actuator: 30° ... 100°</td>
</tr>
<tr>
<td>Linearity (after correction by SIPART PS2)</td>
</tr>
<tr>
<td>Hysteresis</td>
</tr>
<tr>
<td>Continuous working temperature</td>
</tr>
</tbody>
</table>

For connection to power circuits with the following max. ratings

| Internal capacitance C_i | 10 nF | 10 nF (at “nL”) |
| Internal inductance L_i | 240 mH | 240 mH (at “nL”) |
| Degree of protection of casing | IP68/NEMA 4X | IP68/NEMA 4X |
### Electropneumatic positioners

#### SIPART PS2

**Ordering data**

| SIPART PS2, PS2 PA, PS2 FF |

---

**Selection and Ordering data**

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Electropneumatic positioner</th>
<th>SIPART PS2, Ex protection without, EEx ia/ib and EEx n</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 DR 5 - 0 - A A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Optional modules

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Electropneumatic positioner</th>
<th>SIPART PS2, Ex protection without, EEx ia/ib and EEx n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Customer-specific design

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Electropneumatic positioner</th>
<th>SIPART PS2, Ex protection without, EEx ia/ib and EEx n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Further designs

<table>
<thead>
<tr>
<th>Order code</th>
<th>Add “-Z” to Order No. and specify Order code.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Version with stainless steel sound absorbers**

- standard with stainless steel enclosures
  - Order code: A40

**Measuring point number (TAG No.)**

- HART tag max. 16 characters, max. 32 characters for PROFIBUS PA, FOUNDATION Fieldbus and 4 ... 20 mA version, specify in plain text: Y17:
  - Order code: Y17

**Measuring point description**

- HART tag max. 16 characters, max. 32 characters for PROFIBUS PA, FOUNDATION Fieldbus and 4 ... 20 mA version, specify in plain text: Y15:
  - Order code: Y15

**Measuring point text**

- HART tag max. 24 characters, max. 32 characters for PROFIBUS PA, FOUNDATION Fieldbus and 4 ... 20 mA version, specify in plain text: Y16:
  - Order code: 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
  - Order code: Y25

---

1) Maximum impact energy to the casing: 1 Joule.
2) For device versions in plastic casing: it is essential to prevent electrostatic charging. Maximum torque of the cable gland: 67 Nm.
3) Only for plastic casing, for other casings on request.
## Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Electropneumatic positioner SIPART PS2, Ex protection EEx-d, aluminium housing, without cable gland</th>
</tr>
</thead>
<tbody>
<tr>
<td>6DR550E0A</td>
<td></td>
</tr>
</tbody>
</table>

### Version

- 2-wire (4 to 20 mA) |
  - Without HART | 0 |
  - With HART | 1 |
- 2-, 3-, 4-wire (0/4 to 20 mA) |
  - Without HART | 2 |
  - With HART | 3 |
- PROFIBUS PA connection | 4 |
- FOUNDATION Fieldbus connection | 5 |

### For actuator

- Single-action | 1 |
- Double-action | 2 |

### Connection thread

- Electrical/pneumatic |
  - M20 x 1.5 / G¼ | 6 |
  - ½-14 NPT / ¼-18 NPT | 7 |
  - M20 x 1.5 / ½-18 NPT | 8 |
  - ½-14 NPT / G¼ | 9 |
  - M25 x 1.5 / G¼ | 10 |

### Limit monitor

- Installed |
  - Without | 11 |
  - Alarm module; electronic (6DR4004-A) | 12 |

### Optional modules

- Installed |
  - Without | 13 |
  - Iy module for position feedback signal (4 ... 20 mA) (6DR4004-J) | 14 |

### Customer-specific design

- Without | 15 |

### Brief instructions

- German/English | A |
- French/Spanish/Italian | B |

### Mounted pressure gauge block

- Without | 16 |
- Single-action G¼, scaling MPa and bar | 17 |
- Double-action G¼, scaling MPa and bar | 18 |
- Single-action ¼-18 NPT, scaling MPa and psi | 19 |
- Double-action ¼-18 NPT, scaling MPa and psi | 20 |

---

## Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Electropneumatic positioner SIPART PS2, Ex protection EEx-d, aluminium housing, without cable gland</th>
</tr>
</thead>
<tbody>
<tr>
<td>6DR550E0A</td>
<td></td>
</tr>
</tbody>
</table>

### Further designs

Add "Z" to Order No. and specify Order Code.

### Measuring point number (TAG No.)

- HART tag max. 8 characters, max. 32 characters for PROFIBUS PA and FOUNDATION Fieldbus version, specify in plain text: Y17: .......

### Measuring point description

- HART tag max. 16 characters, max. 32 characters for PROFIBUS PA and FOUNDATION Fieldbus version, specify in plain text: Y15: .......

### Measuring point text

- HART tag max. 24 characters, max. 32 characters for PROFIBUS PA and FOUNDATION Fieldbus version, 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: .......

### Available ex stock

D) Subject to export regulations AL: N, ECCN: EAR99H
Electropneumatic positioners

SIPART PS2

Ordering data

Accessories

Selection and Ordering data

Order No.

NCS sensor

6 D R 4 0 0 4 - 8 N N 0

for non-contacting detection of position (not for EEx d version), cable length 6 m (19.68 ft)

Non explosion-proof

8

Explosion-protected, EEx ia/ib

6

For part-turn actuators, without mounting console

1

For linear actuators up to 14 mm (0.55 inch), without mounting bracket

2

For linear actuators >14 mm (0.55 inch), to 130 mm (5.12 inch); Mounting kit same as for SIPART PS2 (separate ordering item)

3

The EMC filter module is additionally required for the controller unit. (separate order item, see below)

Limit value contact module

(with mechanical ground contacts, not for EEx d version)

6 D R 4 0 0 4 - 8 K

-without explosion protection

6 D R 4 0 0 4 - 6 K

\( i_1 \) module for position feedback signal (4 to 20 mA)

6 D R 4 0 0 4 - 8 J

-without explosion protection

6 D R 4 0 0 4 - 6 J

CENELEC/ATEX

6 D R 4 0 0 4 - 7 J

With explosion protection FM/CSA \(^1\)

HART modem for connecting to PC or laptop

7 M F 4 9 9 7 - 1 D A

-with RS232 interface

D

-with USB interface

7 M F 4 9 9 7 - 1 D B

EMC filter module for connection of external position sensor (10 k\( \Omega \)) or NCS sensor (not for EEx d version)

C 7 3 4 5 1 - A 4 3 0 - D 2 3

Coupler for NAMUR part-turn actuators

- VDI/VDE 3845, without mounting plate

6 D R 4 0 0 4 - 8 D

- VDI/VDE 3845 SST coupler

T G X : 1 6 3 0 0 - 1 5 5 6

The following mounting plates can be used with the NAMUR part-turn actuator mounting kit 6DRA004-8D.

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

- 30 x 80 x 20 mm

T G X : 1 6 1 5 2 - 1 0 5

- 30 x 80 x 30 mm

T G X : 1 6 3 0 0 - 1 4 7

- 30 x 130 x 30 mm

T G X : 1 6 3 0 0 - 1 4 9

- 30 x 130 x 50 mm

T G X : 1 6 3 0 0 - 1 5 1

Mounting kit for other part-turn actuators

The following mounting plates can be used together with the NAMUR part-turn actuator mounting kit 6DRA004-8D.

- SPX (DEZURIK) Power Rac, sizes R1, R1A

T G X : 1 6 1 5 2 - 3 3 2

- Masoneilan Camflex II/35

T G X : 1 6 1 5 2 - 3 5 0

- Fisher 1051/1052/1061, sizes 30, 40, 60 to 70

T G X : 1 6 1 5 2 - 3 6 4

- Fisher 1051/1052, size 33

T G X : 1 6 1 5 2 - 3 4 8

Mounting kit for NAMUR linear actuators

6 D R 4 0 0 4 - 8 V

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)

6 D R 4 0 0 4 - 8 L

- Reduced mounting kit for linear actuator (without fixing angle and U-bracket), with short lever with up to 35 mm travel (1.38 inch)

6 D R 4 0 0 4 - 8 V L

- Reduced mounting kit for linear actuator (without fixing angle and U-bracket), with long lever with >35 mm travel (1.38 inch)

6 D R 4 0 0 4 - 8 V L

Mounting kit for other linear actuators

6 D R 4 0 0 4 - 8 S

Retrofitting kit for Moore series 72 and 750 valve positioners

- Fisher type 637/667, size 30 to 80

T G X : 1 6 1 5 2 - 1 1 7

- SAMSON actuator type 3277 (yoke dimension (H5) = 101 mm) \(^2\) (integrated connection without tube), not for EEx d

6 D R 4 0 0 4 - 8 S

Pipe mounting

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

T G X : 1 6 1 5 2 - 3 3 6

Additional actuator items can be found at the following Internet address:

www.siemens.com/sipartps2

Customer-specific mounting kits available on request. Contact your local sales office.

Available ex stock

1) U.S. certification by FM institute

2) With a yoke dimension H5 = 95 mm, only the SIPART PS2 in a metal casing can be used.

© Siemens AG 2008
**Electropneumatic positioners**

**SIPART PS2**

### Ordering data

<table>
<thead>
<tr>
<th>Accessories</th>
<th>6DR4004-1M</th>
<th>6DR4004-2M</th>
<th>6DR4004-1MN</th>
<th>6DR4004-2MN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manometer block</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For single-action SIPART PS2 positioner with G thread (2 manometers, scaled in MPa and bar)</td>
<td>6DR4004-1M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For double-action SIPART PS2 positioner with G thread (3 manometers, scaled in MPa and bar)</td>
<td>6DR4004-2M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For single-action SIPART PS2 positioner with NPT thread (2 manometers, scaled in MPa and psi)</td>
<td>6DR4004-1MN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For double-action SIPART PS2 positioner with NPT thread (3 manometers, scaled in MPa and psi)</td>
<td>6DR4004-2MN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection block</td>
<td>6DR4004-1B</td>
<td>6DR4004-1C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For mounting to IEC 534-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For SAMSON actuator (integrated mounting) see above</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External position detection system</td>
<td>C73451-A430-D78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(with explosion protection to CENELEC/ATEX, Ex ia/ib) for separate mounting of position sensor and controller (for EE Ex d version), comprising SIPART PS2 plastic casing with integral potentiometer and sliding clutch (without electronics and valve block)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The EMC filter module is additionally required for the controller unit. (separate ordering item below)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation (see notes below)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction Manual SIPART PS2</td>
<td>A5E00074600</td>
<td>A5E00074601</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• German/English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• French/Italian/Spanish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction Manual SIPART PS2 PROFIBUS PA</td>
<td>A5E00120716</td>
<td>A5E00120717</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• German/English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• French/Italian/Spanish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruction Manual NCS Sensor</td>
<td>A5E00097485</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• German/English/French/Spanish/Italian</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIPART PS2 device documentation</td>
<td>A5E00214567</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• CD-ROM with complete documentation for all device versions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device manual for SIPART PS2 (not PA and FF)</td>
<td>A5E00074630</td>
<td>A5E00074631</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• German</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual for SIPART PS2 PROFIBUS PA</td>
<td>A5E00127924</td>
<td>A5E00127926</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• German</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SITRANS I outgoing isolator HART</td>
<td>7NG4130-1AA11</td>
<td>7NG4130-1BA11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(see „SITRANS I supply units and isolation amplifiers”) with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 24 V DC power supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 230 V AC power supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note

All the above mentioned manuals are included on CD-ROM or can be downloaded from the Internet under: www.siemens.com/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 (6DR56xx) with FOUNDATION Fieldbus
  - German/English: A5E00214570
- Instruction Manual SIPART PS2 FF, Electropneumatic Positioner (6DR56xx) with FOUNDATION Fieldbus
  - German: A5E00214568
  - English: A5E00214569

**Scope of delivery:**

- 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”

**More information**

**Special versions**

On request

**Special versions**

- **Manometer block including pressure gauge**
  - For single-action SIPART PS2 positioner with G thread (2 manometers, scaled in MPa and bar) 6DR4004-1M
  - For double-action SIPART PS2 positioner with G thread (3 manometers, scaled in MPa and bar) 6DR4004-2M
  - For single-action SIPART PS2 positioner with NPT thread (2 manometers, scaled in MPa and psi) 6DR4004-1MN
  - For double-action SIPART PS2 positioner with NPT thread (3 manometers, scaled in MPa and psi) 6DR4004-2MN

- **Connection block** for safety solenoid valve with extended mounting flange to NAMUR
  - For mounting to IEC 534-6 6DR4004-1B
  - For SAMSON actuator (integrated mounting) see above 6DR4004-1C

- **External position detection system** (with explosion protection to CENELEC/ATEX, Ex ia/ib) for separate mounting of position sensor and controller (for EE Ex d version), comprising SIPART PS2 plastic 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 below)

- **Documentation (see notes below)**
  - Instruction Manual SIPART PS2
    - German/English A5E00074600
    - French/Italian/Spanish A5E00074601
  - Instruction Manual SIPART PS2 PROFIBUS PA
    - German/English A5E00120716
    - French/Italian/Spanish A5E00120717
  - Instruction Manual NCS Sensor
    - German/English/French/Spanish/Italian A5E00097485
  - SIPART PS2 device documentation
    - CD-ROM with complete documentation for all device versions A5E00214567
  - Device manual for SIPART PS2 (not PA and FF)
    - German A5E00074630
    - English A5E00074631
  - Manual for SIPART PS2 PROFIBUS PA
    - German A5E00127924
    - English A5E00127926

- **SITRANS I outgoing isolator HART**
  - 24 V DC power supply 7NG4130-1AA11
  - 230 V AC power supply 7NG4130-1BA11

1) Only together with 6DR4004-8S and 6DR4004-1M.
Plastic and stainless steel casing (top), aluminium casing (center), plastic and metal casing (bottom), dimensions in mm (inch)

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

### Schematics

**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, input circuit for 6DR50.. and 6DR51..**

**SIPART PS2 electropneumatic positioner, input circuit for 6DR55.. and 6DR56..**

**Electric connection of PROFIBUS PA device (6DR55..) and FOUNDATION Fieldbus devices (6DR56..)**

SIPART PS2 electropneumatic positioner, input circuits for 6DR52..
Mounting kits

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 EEx d on linear actuators
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).
Electropneumatic positioners