

## Solenoid driver - PI-EX-SD-21-25 - 2865201

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Ex i solenoid driver, pluggable. To control intrinsically safe solenoid valves, alarm modules as well as simple electric equipment installed in Ex areas. For Group IIC gases, loop-powered. Electrical isolation.



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 046356 134842 |
| GTIN         | 4046356134842                                                                                           |

### Technical data

#### Note

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---------------------------------------------------------------------------|

#### Dimensions

|        |         |
|--------|---------|
| Width  | 12.4 mm |
| Height | 145 mm  |
| Depth  | 147 mm  |

#### Ambient conditions

|                                         |                                                   |
|-----------------------------------------|---------------------------------------------------|
| Ambient temperature (operation)         | -20 °C ... 55 °C                                  |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C                                  |
| Permissible humidity (operation)        | 10 % ... 95 % (relative humidity, non-condensing) |

#### Output data

|                                              |                                             |
|----------------------------------------------|---------------------------------------------|
| Output characteristic curve: Output resistor | 654 Ω (Internal resistance R <sub>i</sub> ) |
| Response time                                | < 30 ms                                     |

#### Compatible valves

|      |                                                                             |
|------|-----------------------------------------------------------------------------|
| Note | This is an extract of possible combinations of valves and solenoid drivers. |
|------|-----------------------------------------------------------------------------|

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## Technical data

### Compatible valves

|                  |                                             |
|------------------|---------------------------------------------|
| Compatible valve | Norgren Herion Coil 2080 / 2082             |
|                  | Norgren Herion Coil 2081 / 2083             |
|                  | Norgren Herion Coil 2084                    |
|                  | Hörbiger Piezo P8 38x RF-Nx-SPN65 30 V type |
|                  | Hörbiger Piezo P20 381RF-NG-CPN61 30 V type |
|                  | Samson Coil 3701-11 (6 V)                   |
|                  | Samson Coil 3701-12 (12 V)                  |
|                  | Samson Coil 3701-13 (24 V)                  |
|                  | Samson Coil 3963-11 (6 V)                   |
|                  | Samson Coil 3963-12 (12 V)                  |
|                  | Samson Coil 3963-13 (24 V)                  |
|                  | Samson Coil 3964-11 (6 V)                   |
|                  | Samson Coil 3964-12 (12 V)                  |
|                  | Samson Coil 3964-13 (24 V)                  |
|                  | Seitz Pilot valve PV 12F73 Ci oH            |
|                  | Seitz Pilot valve PV 12F73 Xi oH            |
|                  | Seitz Pilot valve PV 12F73 Xi oH-2          |

### Power supply

|                          |                      |
|--------------------------|----------------------|
| Max. current consumption | 50 mA (at 24 V)      |
| Power dissipation        | max. 0.9 W (at 24 V) |

### General

|                                        |                                                  |
|----------------------------------------|--------------------------------------------------|
| Maximum temperature coefficient        | 0.01 %/K                                         |
| Status display                         | Yellow LED (status display)                      |
|                                        | Red LED (line errors)                            |
| Flammability rating according to UL 94 | V0                                               |
| Housing material                       | PBT and polyamide PA non-reinforced              |
| Color                                  | green                                            |
| Designation                            | Input/output                                     |
| Electrical isolation                   | 375 V (Peak value as per EN 50020 / EN 60079-11) |
|                                        | 2.5 kV (50 Hz, 1 min., test voltage)             |
| Conformance                            | CE-compliant                                     |
| ATEX                                   | # II (1) GD [Ex ia] IIC / IIB / IIA              |
|                                        | # II 3 G Ex nA II T4 X                           |
| Functional Safety (SIL)                | SIL 3                                            |
| SIL                                    | 3                                                |

### Safety characteristic data

|                              |                        |
|------------------------------|------------------------|
| Integrity requirement        | IEC 61508 - Low demand |
| Equipment type               | Type A                 |
| Safety Integrity Level (SIL) | 3                      |

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## Technical data

### Safety characteristic data

|                                                                    |                                            |
|--------------------------------------------------------------------|--------------------------------------------|
| Safe Failure Fraction (SFF)                                        | 100 %                                      |
| $\lambda_{SU}$                                                     | $2.84 \times 10^{-7}$ (284 FIT)            |
| $\lambda_{SD}$                                                     | 0                                          |
| $\lambda_{DU}$                                                     | 0                                          |
| $\lambda_{DD}$                                                     | 0                                          |
| Probability of a hazardous failure on demand (PFD <sub>AVG</sub> ) | 0 (1 year)                                 |
|                                                                    | 0 (5 years)                                |
|                                                                    | 0 (10 years)                               |
| Diagnostic coverage (DC)                                           | DC <sub>S</sub> =0 %, DC <sub>D</sub> =0 % |

### Safety data

|                                               |                     |
|-----------------------------------------------|---------------------|
| Max. output voltage U <sub>o</sub>            | 25.1 V              |
| Max. output current I <sub>o</sub>            | 39 mA               |
| Max. output power P <sub>o</sub>              | 245 mW              |
| Group                                         | IIA                 |
| Max. external inductivity L <sub>o</sub>      | 20 mH               |
| Max. external capacity C <sub>o</sub>         | 0.66 µF             |
| Group                                         | IIB                 |
| Max. external inductivity L <sub>o</sub>      | 5 mH                |
| Max. external capacity C <sub>o</sub>         | 0.43 µF             |
| Group                                         | IIC                 |
| Max. external inductivity L <sub>o</sub>      | 0.5 mH              |
| Max. external capacity C <sub>o</sub>         | 0.093 µF            |
| Safety-related maximum voltage U <sub>m</sub> | 250 V AC (125 V DC) |

### Standards and Regulations

|                                        |                                     |
|----------------------------------------|-------------------------------------|
| Flammability rating according to UL 94 | V0                                  |
| Conformance                            | CE-compliant                        |
| ATEX                                   | # II (1) GD [Ex ia] IIC / IIB / IIA |
|                                        | # II 3 G Ex nA II T4 X              |
| Group                                  | IIA                                 |
|                                        | IIB                                 |
|                                        | IIC                                 |

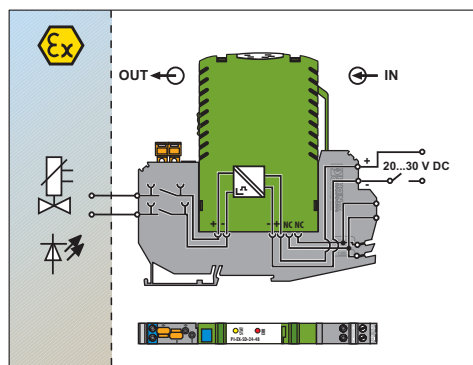
### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| China RoHS | Environmentally Friendly Use Period = 50                                                            |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

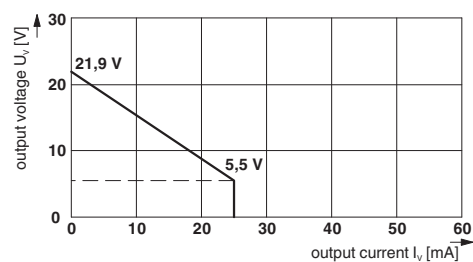
## Drawings

## Solenoid driver - PI-EX-SD-21-25 - 2865201

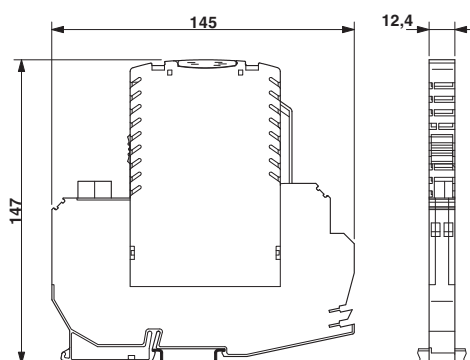
Block diagram



Diagram



Dimensional drawing



### Approvals

#### Approvals

Approvals

Functional Safety

Ex Approvals

#### Approval details

Functional Safety

06/06-05 R004 V2R0

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