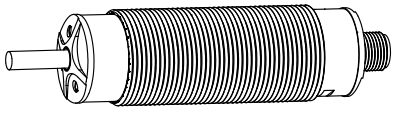
# SPS30 Inline AC/DC Converter

## Datasheet



- Converts universal 100 V AC to 240 V AC supply voltage to power various DC-powered devices such as sensors or indicators
- Converts the DC-powered device output to a Normally Open 4 Amp electro-mechanical relay output on the AC side
- The DC-powered device connection can be 4-pin M8 or 5-pin M12 quick disconnect on a 150 mm (6 in) cable, depending on the model number
- The AC connection is an integral ½-20 UNF 5-pin dual key quick disconnect
- An AC input line is available to remotely teach a sensor or activate an input on an actuator

**WARNING:**
- **Risk of electric shock**
- Failure to follow these instructions could result in serious injury or death.
- Disconnect or turn off power before installing, removing, or servicing the device.
- Install and connect the device in accordance with the National Electrical Code (NEC) and any applicable local code requirements and supply the device with an appropriate fuse box or circuit breaker (see *Specifications*).

**WARNING:**
- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

**WARNING:** Directly connecting the AC and DC sides together causes permanent damage to the device.

**Important:** A switch or 20 amp maximum circuit breaker must be used in the installation.

## Model Number Selection Instructions

### Select DC Device Output Type

**Required:** Match the DC Device Output type of the SPS30 converter to the output type of the DC powered device.

For example, if the DC device has a PNP output, then it must use an SPS30 with a **DC Device Output type** of PNP.

### Select DC Device Remote Input Type and Pin Assignment When Using the Remote Input

The SPS30 includes an AC Remote Input which can be used to remote teach a sensor or activate a job indicator on an actuator, such as a touch button or other pick-to-light devices.

When the AC Remote Input is connected to AC neutral, the DC Device Remote Input is activated. The DC Device Remote Input can be either PNP type (pull high to +24 V DC), or NPN type (pull low to 0 V DC). The DC Device Remote Input can connect to either Pin 2 or Pin 5 of the DC-powered device.

**Required:** Select the appropriate SPS30 model configuration based on the DC-powered device input requirements.

### Models

| Family | DC Device Output Type | AC Output Configuration | AC Output Hardware | DC Device Remote Input Type and Pin Assignment | DC Device Connector Type |
|---|---|---|---|---|---|
| SPS30 | P | A | R | 2P | Q3 |
| | P = PNP<br>N = NPN | A = Normally Open | R = E/M Relay | 2P = PNP on Pin 2<br>2N = NPN on Pin 2<br>5P = PNP on Pin 5<br>5N = NPN on Pin 5 | Q3 = 150 mm (6 in.) PVC cable with an M8 quick disconnect<br>Q5 = 150 mm (6 in.) PVC cable with an M12 quick disconnect |

Original Document
224538 Rev. B

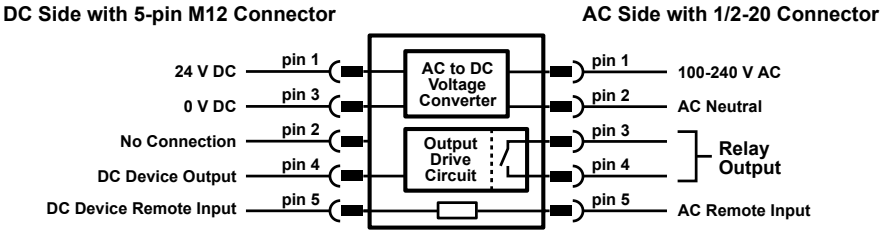
15 March 2022

224538

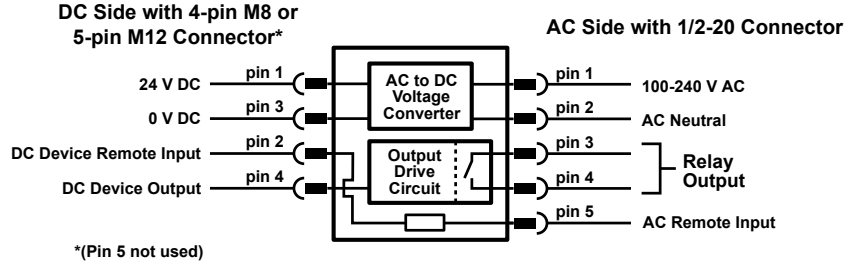
ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

## Wiring

### SPS30 with DC Input on DC Pin 5




### SPS30 with DC Input on DC Pin 2




## Specifications

**AC Input Characteristics**
Voltage: 100 V AC to 240 V AC

| Max Current Draw (mA) | | | |
|---|---|---|---|
| **100 V AC** | **120 V AC** | **230 V AC** | **240 V AC** |
| 115 | 95 | 65 | 60 |

Frequency Range: 47 Hz to 63 Hz
AC Remote Input: 5 mA max

**DC Output Characteristics**
Voltage: 24 V DC (±10%)
Current: 300 mA max between the powered device and DC Device Remote Input
Power: 7.2 W max
DC Device Remote Input: 100 mA max NPN or PNP output, depending on model
Limited energy power supply evaluated to IEC, UL, and CSA 61010-2-201 that can be used to power devices that require a Class 2 or SELV power supply

**Supply Protection Circuitry**
Protected against transient voltages

**Relay Output Response Time**
6 ms

**Status Indicators**
Power On: Green
Output On: Yellow

**Construction**
Housing and AC endcap: PBT
DC endcap: TPU
Nuts: Polycarbonate

**AC Remote Input Leakage Current Immunity**
500 µA
Application Note: The use of relay output PLC is recommended since there is no leakage current. Solid state output PLCs often have leakage current above 1 mA and, therefore, turn the DC Device Remote Input ON in the OFF state. To counteract the leakage current, a shunt resistor must be used. A resistor must be applied from the hot wire of the AC Remote Input of the device.

**Mounting**
M30 × 1.5 threaded base, maximum torque 4.5 N·m (40 in·lbf)
Supplied with two 30 mm mounting nuts

**Connections**
AC: Integral 5-pin 1/2 in. 20UNF male quick-disconnect connector
DC: 150 mm (6 in) PVC cable with a 5-pin M12 male quick disconnect, or 150 mm (6 in) PVC cable with a 4-pin M8 male quick-disconnect connector, depending on model

**Note:** Do not spray cable with high-pressure sprayer, or cable damage will result.

**Environmental Rating**
IP65, IP67, IP69K per DIN 40050-9

**Operating Temperature**
Max current of 2 A through relay: –20 °C to +50 °C (–4 °F to +122 °F)
Max current of 4 A through relay: –20 °C to +45 °C (–4 °F to +113 °F)

**Storage Temperature**
–40 °C to +70 °C (–40 °F to +158 °F)

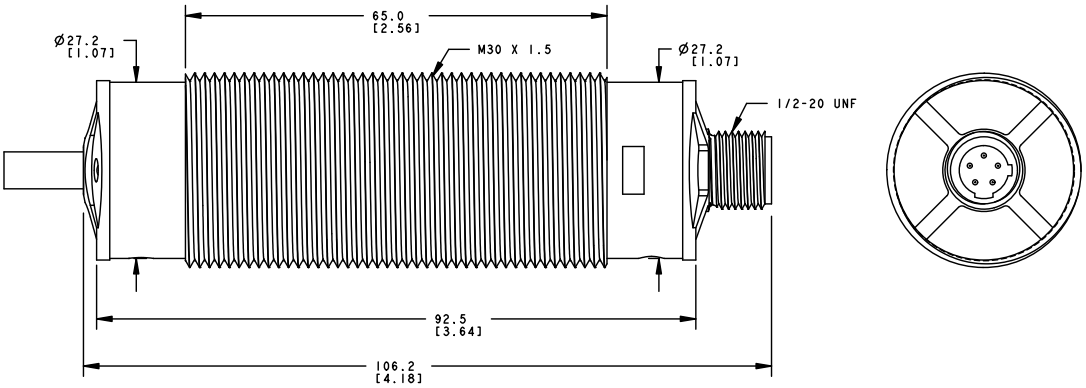
**Vibration and Mechanical Shock**
Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6
Shock: 15G 11 ms duration, half sine wave per IEC 60068-2-27

**Relay Output**
SPST (1 Form A) relay:
250 V AC, 4A
Minimum Mechanical Life: 100,000 operations

**Certifications**

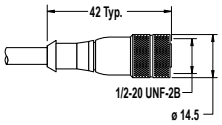
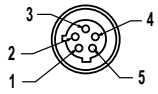
## Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise.




# Accessories

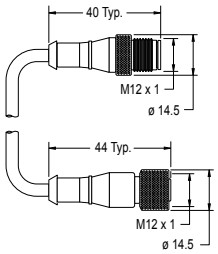
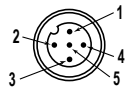
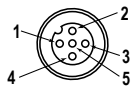
## Cordsets

| 5-Pin 1/2-in Dual Key Cordsets—Single Ended | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout** |
| **MQAC2-506** | 2 m (6.56 ft) | Straight |  |  |
| **MQAC2-515** | 5 m (16.4 ft) | | | |
| **MQAC2-530** | 9.14 m (30 ft) | | | |





1 = Brown
2 = Blue
3 = White
4 = Black
5 = Gray

| 5-Pin Threaded M12 Cordsets—Double Ended | | | | | |
|---|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout (Male)** | **Pinout (Female)** |
| **MQDEC-501SS** | 0.31 m (1.02 ft) | Male Straight/ Female Straight |  |  |  |
| **MQDEC-503SS** | 0.91 m (2.99 ft) | | | | |
| **MQDEC-506SS** | 1.83 m (6 ft) | | | | |
| **MQDEC-512SS** | 3.66 m (12 ft) | | | | |
| **MQDEC-515SS** | 5 m (16.4 ft) | | | | |
| **MQDEC-530SS** | 9 m (29.5 ft) | | | | |
| **MQDEC-550SS** | 15 m (49.2 ft) | | | | |

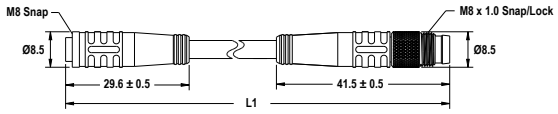
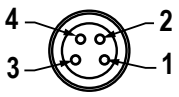






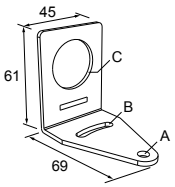
1 = Brown
2 = White
3 = Blue

4 = Black
5 = Gray

| 4-Pin Threaded M8 Cordsets—Double Ended | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout** |
| **PSG4M-1-PKG4** | 1.03 m (3.38 ft) | Male Straight/ Female Straight |  | Female<br><br>Male<br><br>1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black |

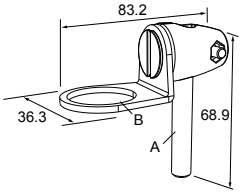
## Brackets

**SMB30A**
- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel



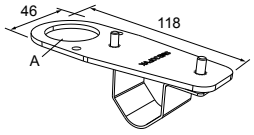

**Hole center spacing:** A to B=40
**Hole size:** A=ø 6.3, B= 27.1 x 6.3, C=ø 30.5

**SMB30FA**
- Swivel bracket with tilt and pan movement for precise adjustment
- Mounting hole for 30 mm sensor
- 12-ga. 304 stainless steel
- Easy sensor mounting to extrude rail T-slot
- Metric and inch size bolt available



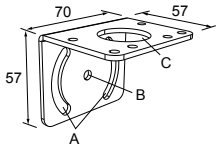

**Bolt thread:** SMB30FA, A= 3/8 - 16 x 2 in; SMB30FAM10, A= M10 - 1.5 x 50
**Hole size:** B= ø 30.1

**SMB30FVK**
- V-clamp, flat bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors



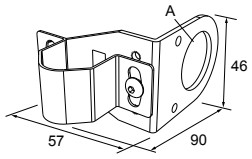

**Hole size:** A= ø 31

**SMB30MM**
- 12-ga. stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor



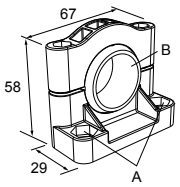

**Hole center spacing:** A = 51, A to B = 25.4
**Hole size:** A = 42.6 x 7, B = ø 6.4, C = ø 30.1

**SMB30RAVK**
- V-clamp, right-angle bracket and fasteners for mounting sensors to pipe or extrusion
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors



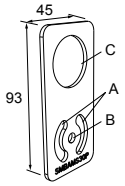

**Hole size:** A = ø 30.5

**SMB30SC**
- Swivel bracket with 30 mm mounting hole for sensor
- Black reinforced thermoplastic polyester
- Stainless steel mounting and swivel locking hardware included



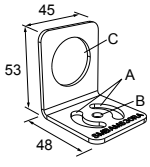

**Hole center spacing:** A=ø 50.8
**Hole size:** A=ø 7.0, B=ø 30.0

**SMBAMS30P**
- Flat SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. 300 series stainless steel




**Hole center spacing:** A=26.0, A to B=13.0
**Hole size:** A=26.8 x 7.0, B=ø 6.5, C=ø 31.0

**SMBAMS30RA**
- Right-angle SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. (2.6 mm) cold-rolled steel




**Hole center spacing:** A=26.0, A to B=13.0
**Hole size:** A=26.8 x 7.0, B=ø 6.5, C=ø 31.0

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Cet appareil est conforme à la norme NMB-3(A). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.



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