

Magnetic rotary angle and position sensor-control.

Contactless sensor.

PSC-360



The robust PSC-360 is a low-cost high performance non-contacting rotary position sensor for automotive, off-road, medical and industrial applications without the limitations of potentiometric solutions (wear, limited electrical angles...) A configurable switch output is integrated within the sensor too.

Full redundancy can be achieved by employing a dual core version or the simple placement of two sensors within the housing.

Sealed and flange mounted for easy positioning when necessary, it provides high stability under harsh environment conditions such as vibration, shock, extreme temperatures / humidity, dither, moisture or dirt. Featuring a modular architecture, electrical & mechanical characteristics can be fully customised to customer's needs as well as connector configurations.

Mechanical specifications

Rotational life [depends on application and mounting]	up to 50.000.000 cycles.
Operating temperature ¹	up to -40°C to +125°C.
Sealing ¹	IP67.

Electrical specifications

Linearity ¹	±1% absolute (0.5% check availability).
Angular range	Programmable from 15 to 360 degrees (without dead band).
Output	Analog (Ratiometric), PWM, Serial Protocol.
Switch output	Yes, programmable.
Angular Resolution [depends on electrical angle and rotational speed]	Analog & PWM: up to 12 bits. Serial Protocol (SPI): up to 14 bits.
Operating temperature	-40°C to +85°C (-13°F to + 158°F).
Supply voltage ¹	5V/12V/15V ±10%.
Supply current	Typ 8.5mA for single version. Typ 17mA for redundant version.

¹ Others check availability.

Piher Sensors & Controls SA

Our product competencies and services:
Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies

Key features

- Simple & Robust Magnetic Design.
- Multiturn.
- Programmable switch output.
- Programmable Linear Transfer Characteristic:
(some positive slopes & one negative slope can be programmed in the same transfer characteristic;
up to 4 programmable points; see last page)
- Self-Diagnostic features
- Over voltage protection and reverse voltage protection.

Also upon request:

- True full redundant version.

Applications

- Non-Contacting long life angle/position sensor.
- Absolute rotary position sensor
- Pedal position sensor.
- Throttle/EGR valve and gear position sensor.
- Height & suspension sensor.
- Non-contacting potentiometer.
- Float-level sensor.
- Motor-shaft position sensor.
- Precision robotics, industrial equipment, HVAC monitoring & control, etc.

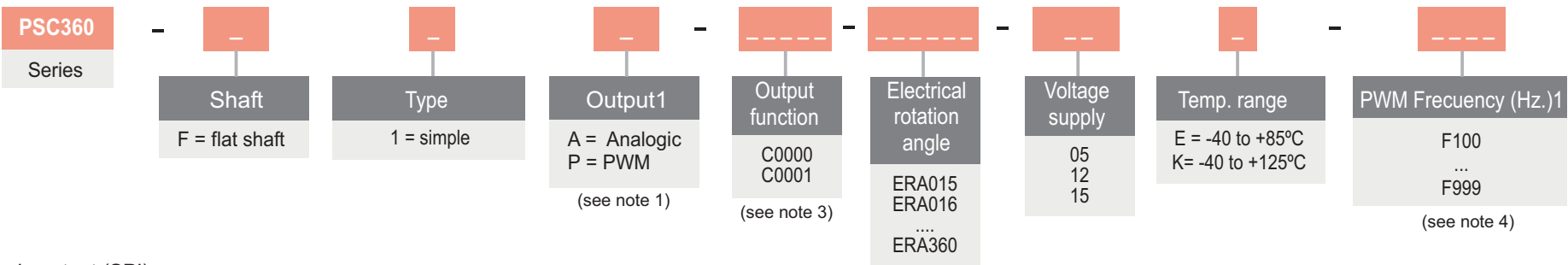


Magnetic rotary angle and position sensor-control.

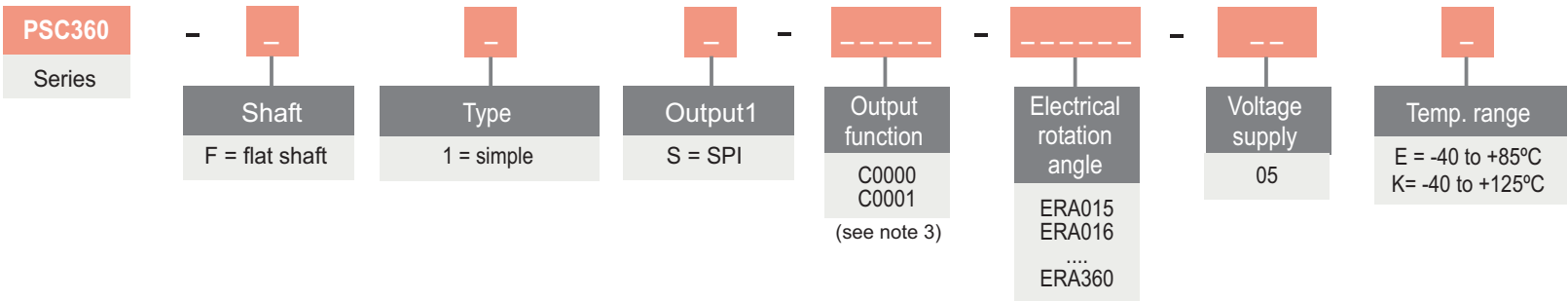
Contactless sensor.
PSC-360

How to order.

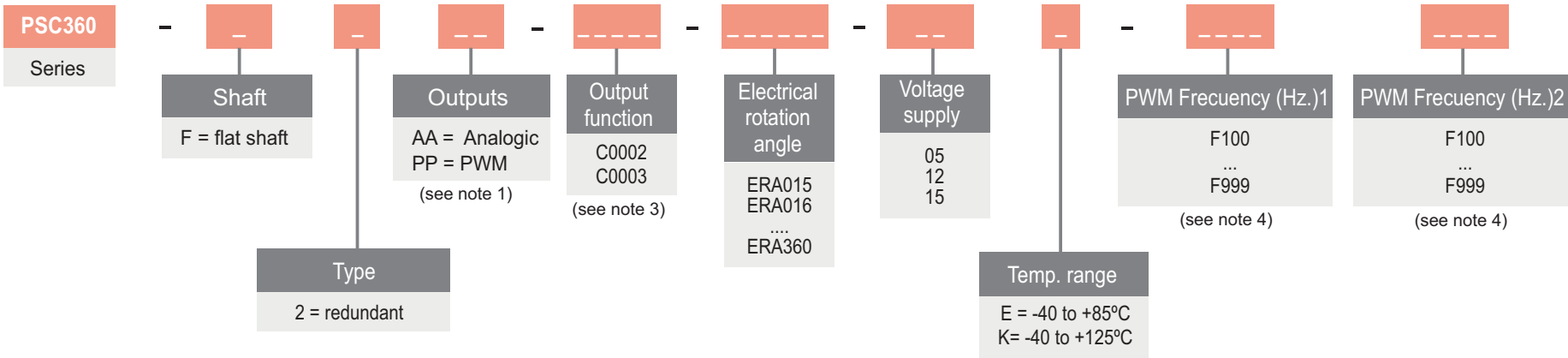
Simple output (analogic / PWM)



Simple output (SPI)



Redundant output (analogic / PWM) without switch



Other product configurations will be studied case by case.

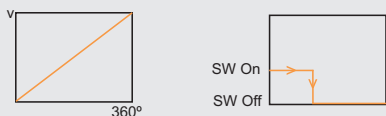
Notes

- (1) The analog output is a ratiometric output, proportional to:
- For supply voltage 5V: to input supply voltage.
 - For supply voltage 12V: to 5V.
 - For supply voltage 15V: to 5V.

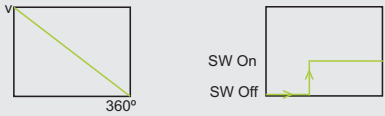
- (2) Leave empty if no applicable.

Switch function diagram:

Positive slope



Negative slope



- (3) Other output functions available check availability. In the How To Order reference, enter **CXXXX** meanwhile the new output function reference is not defined.

- (4) Leave empty if no applicable. Default frequency is 200 Hz

Piher Sensors & Controls SA

Our product competencies and services:

Potentiometers | Position / angle sensors | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies



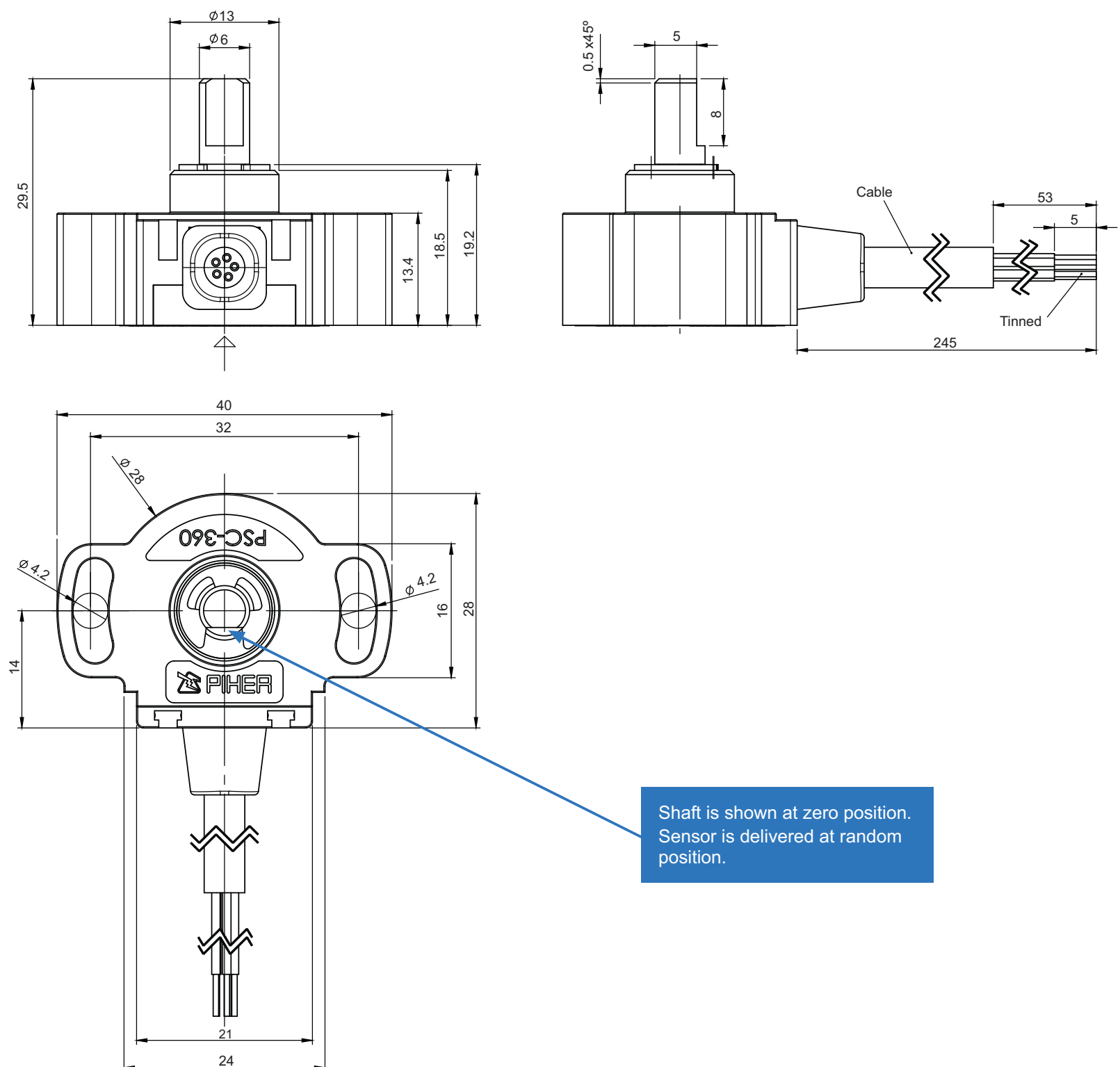
Magnetic rotary angle and position sensor-control.

Contactless sensor. PSC-360

Options

- Special outputs slopes and protocols.
- Full redundant version with switches.
- Energy harvesting versions.
- Fast versions.
- Connectors.
- IP sealing.
- Shaft interfaces.
- Contact the factory for other options.

Dimensions



Piher Sensors & Controls SA

Our product competencies and services:

Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies



Magnetic rotary angle and position sensor-control.






Contactless sensor. PSC-360

Mounting instructions.

- 1.- Place the component on a flat surface.
- 2.- Fasten the two M4 screws (M4 washers are recommended).
- 3.- Fit the actuator onto the shaft avoiding any mechanical play/wobble.

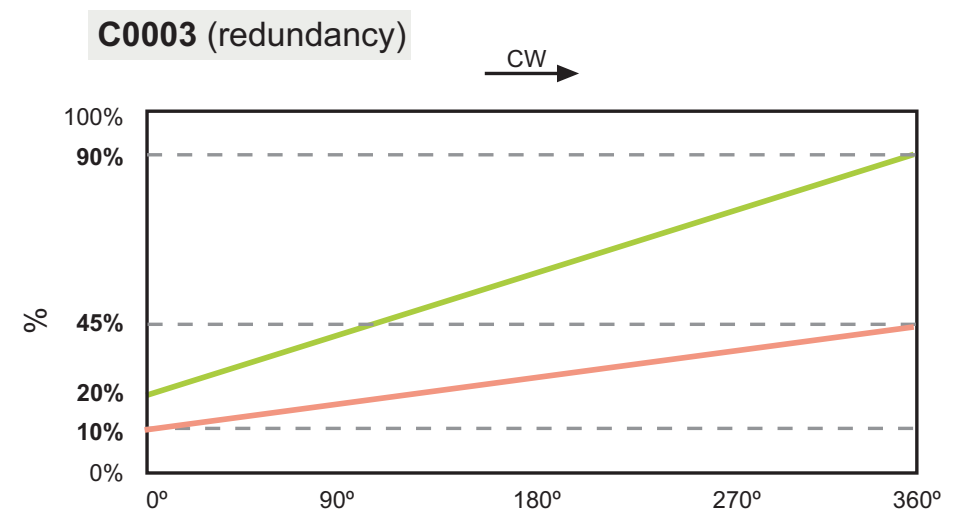
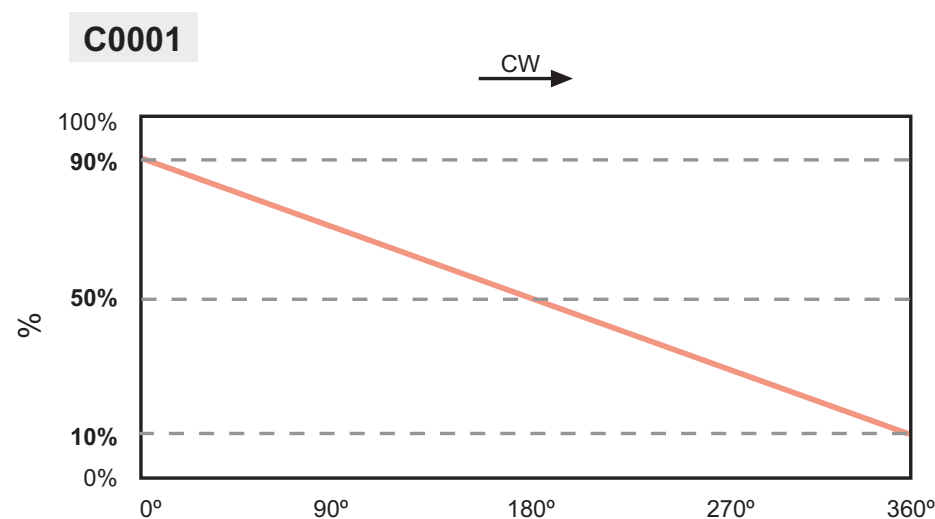
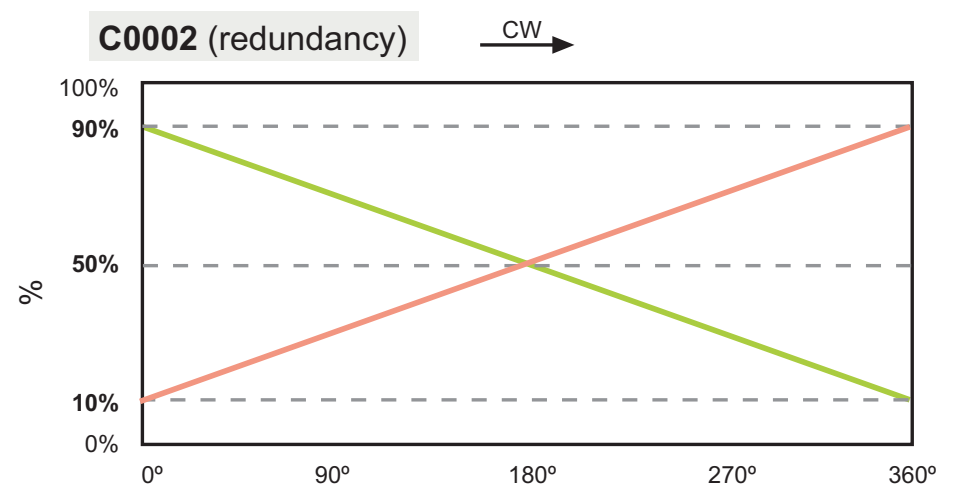
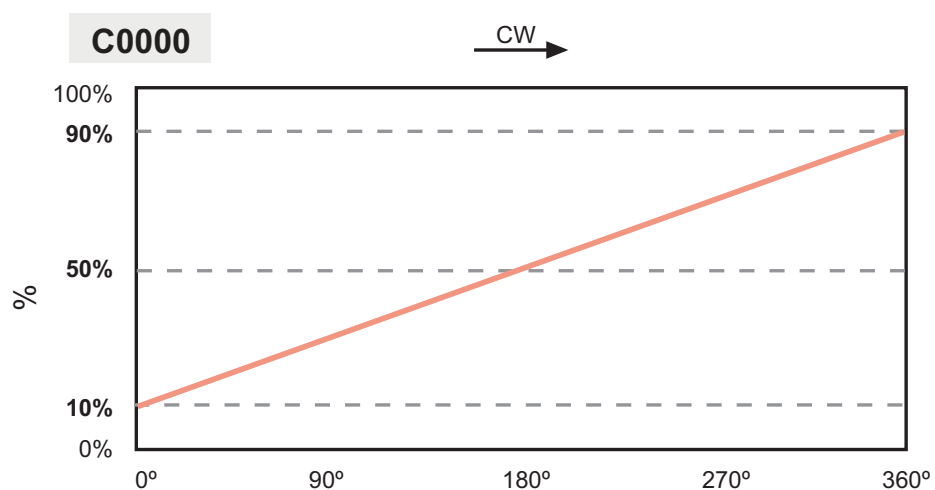
Connections scheme.

Simple analog output connection wiring scheme:

-  Brown = Power supply.
-  Blue = Ground.
-  Black = Signal output.
-  White = Not used.
-  Grey = Not used.

Cable length: 245mm

Output.



Piher Sensors & Controls SA

Our product competencies and services:
Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies



Magnetic rotary angle and position sensor-control.

Contactless sensor.
PSC-360

Disclaimer

The product information in this catalogue is for reference purposes. Please consult for the most up to date and accurate design information.

Piher Sensors & Controls S.A., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Piher"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product described herein.

Piher disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Piher's terms and conditions of sale, including but not limited to the warranty expressed therein, which apply to these products.

No licence, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Piher.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Piher products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Piher for any damages arising or resulting from such use or sale. Please contact authorised Piher personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Information contained in and/or attached to this catalogue may be subject to export control regulations of the European Community, USA, or other countries. Each recipient of this document is responsible to ensure that usage and/or transfer of any information contained in this document complies with all relevant export control regulations. If you are in any doubt about the export control restrictions that apply to this information, please contact the sender immediately. For any Piher Exports, Note: All products / technologies are EAR99 Classified commodities. Exports from the United States are in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited.

Contact

Piher Sensors & Controls SA

Polígono Industrial Municipal
Vial T2 N°22
31500 Tudela - Spain
Tel: +34-948-820450

sales@piher.net

www.piher.net



All Piher products can be adapted to meet customer's requirements.
Due to continuous process improvement, specifications are subject to change without notice.
Please always use the datasheets published at our website www.piher.net for the most up-to-date information.

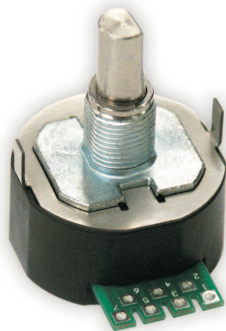
v220616

Piher Sensors & Controls SA

Our product competencies and services:
Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies

Magnetic rotary angle and position sensor-control.

Contactless sensor.
PSC-360U



The robust PSC-360U is a low-cost high performance non-contacting rotary position sensor for automotive, off-road, medical and industrial applications without the limitations of potentiometric solutions (wear, limited electrical angles...) A configurable switch ouptput is integrated within the sensor too.

Full redundancy can be achieved by employing a dual core version or the simple placement of two sensors within the housing.

Sealed and flange mounted for easy positioning when necessary, it provides high stability under harsh environment conditions such as vibration, shock, extreme temperatures / humidity, dither, moisture or dirt. Featuring a modular architecture, electrical & mechanical characteristics can be fully customised to customer´s needs as well as connector configurations.

Mechanical specifications

Rotational life [depends on application and mounting]	up to 50.000.000 cycles.
Operating temperature ¹	up to -40°C to +125°C
Sealing ¹	IP67

Electrical specifications

Linearity ¹	±1% absolute (0.5% check availability).
Angular range	Programmable from 15 to 360 degrees (without dead band).
Output	Analog (Ratiometric), PWM, Serial Protocol.
Switch output	Yes, programmable.
Angular Resolution [depends on electrical angle and rotational speed]	Analog & PWM: up to 12 bits. Serial Protocol (SPI): up to 14 bits.
Operating temperature	-40°C to +85°C (-13°F to + 158°F).
Supply voltage ¹	5V/12V/15V ±10%.
Supply current	Typ 8.5mA for single version. Typ 17mA for redundant version.

¹ Others check availability.

Key features

- Simple & Robust Magnetic Design.
- High resolution (up to 14-bit)
- Absolute position feedback up to 360° (keeps position on power loss).
- Low profile.
- Easy integration into existing systems
- Full true-redundant versions.
- Conceived for harsh environments applications.
- Protected from magnetic fields, dust, moisture, vibrations, exteme temperatures.
- Analog oputput ready for easy potentiometer replacement.
- Multiturn.
- Programmable Linear Transfer Characteristic:
(some positive slopes & one negative slope can be programmed in the same transfer characteristic;
up to 4 programmable points; see last page)
- Self-Diagnostic features
- Over voltage protection and reverse voltage protection.

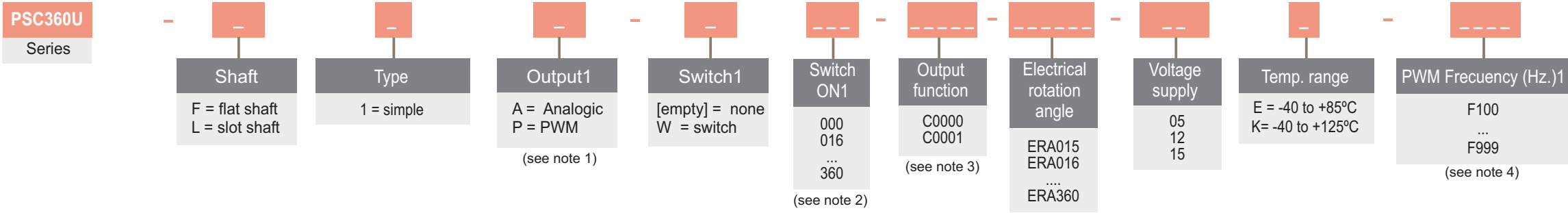
Applications

- Non-Contacting long life angle/position sensor.
- Absolute rotary position sensor
- Pedal position sSensor.
- Throttle/EGR valve and gear position sensor.
- Height & suspension sensor.
- Non-contacting potentiometer.
- Float-level sensor.
- Motor-shaft position sensor.
- Precision robotics, industrial equipment, HVAC monitoring & control, etc.

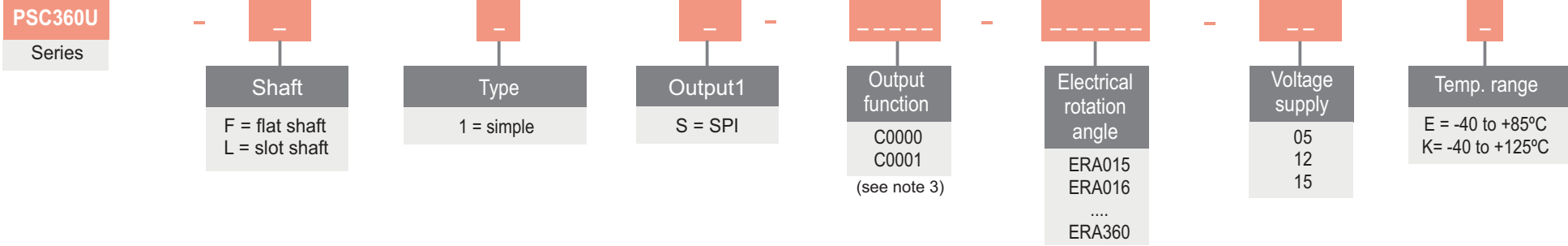
How to order.

Sensors
Controls

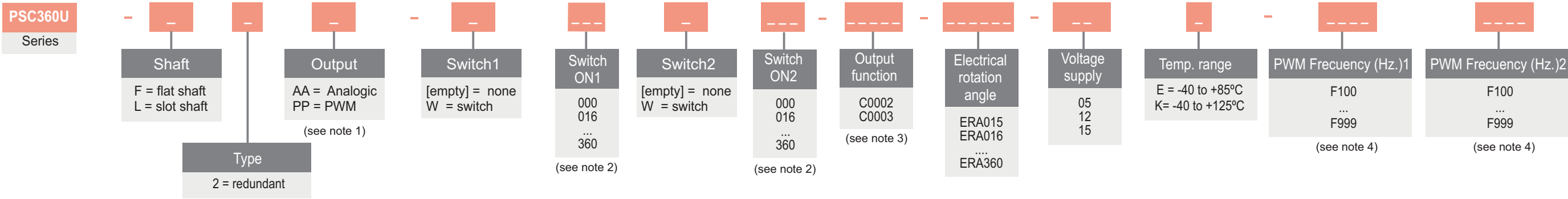
Simple output (analogic / PWM)



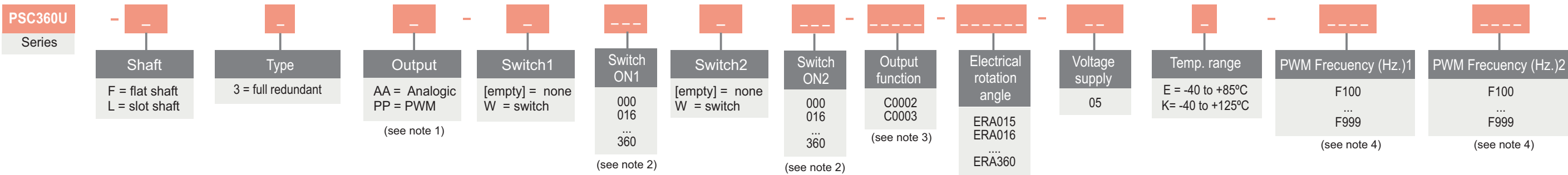
Simple output (SPI)



Redundant output (analogic / PWM)



Full redundant output (analogic / PWM)



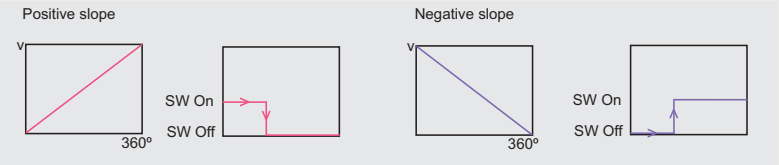
Other product configurations will be studied case by case.

(1) The analog output is a ratiometric output, proportional to:

- For supply voltage 5V: to input supply voltage.
- For supply voltage 12V: to 5V.
- For supply voltage 15V: to 5V.

(2) Leave empty if no applicable.

Switch function diagram:



(3) Other output functions available check availability. In the How To Order reference, enter **CXXXX** meanwhile the new output function reference is not defined.

(4) Leave empty if no applicable. Default frequency is 200 Hz

Notes



Magnetic rotary angle and position sensor-control.

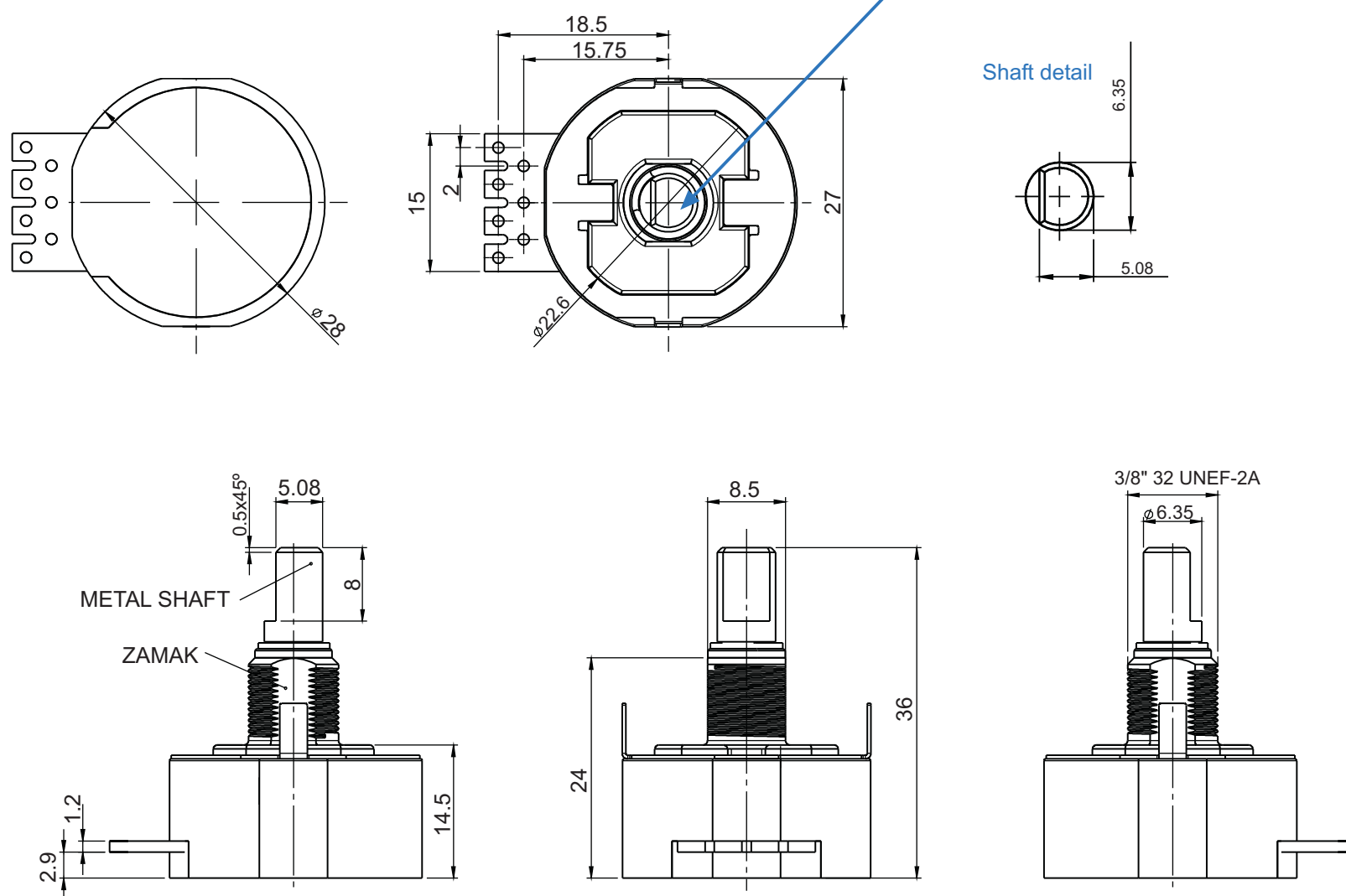
Contactless sensor. PSC-360U

Options.

- Special outputs slopes and protocols.
- Full redundant version with switches.
- Energy harvesting versions.
- Fast versions.
- Connectors.
- IP sealing.
- Shaft interfaces.
- Contact the factory for other options.

Dimensions.

Flat shaft version.



* Nut & washer included.

Piher Sensors & Controls SA

Our product competencies and services:

Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies

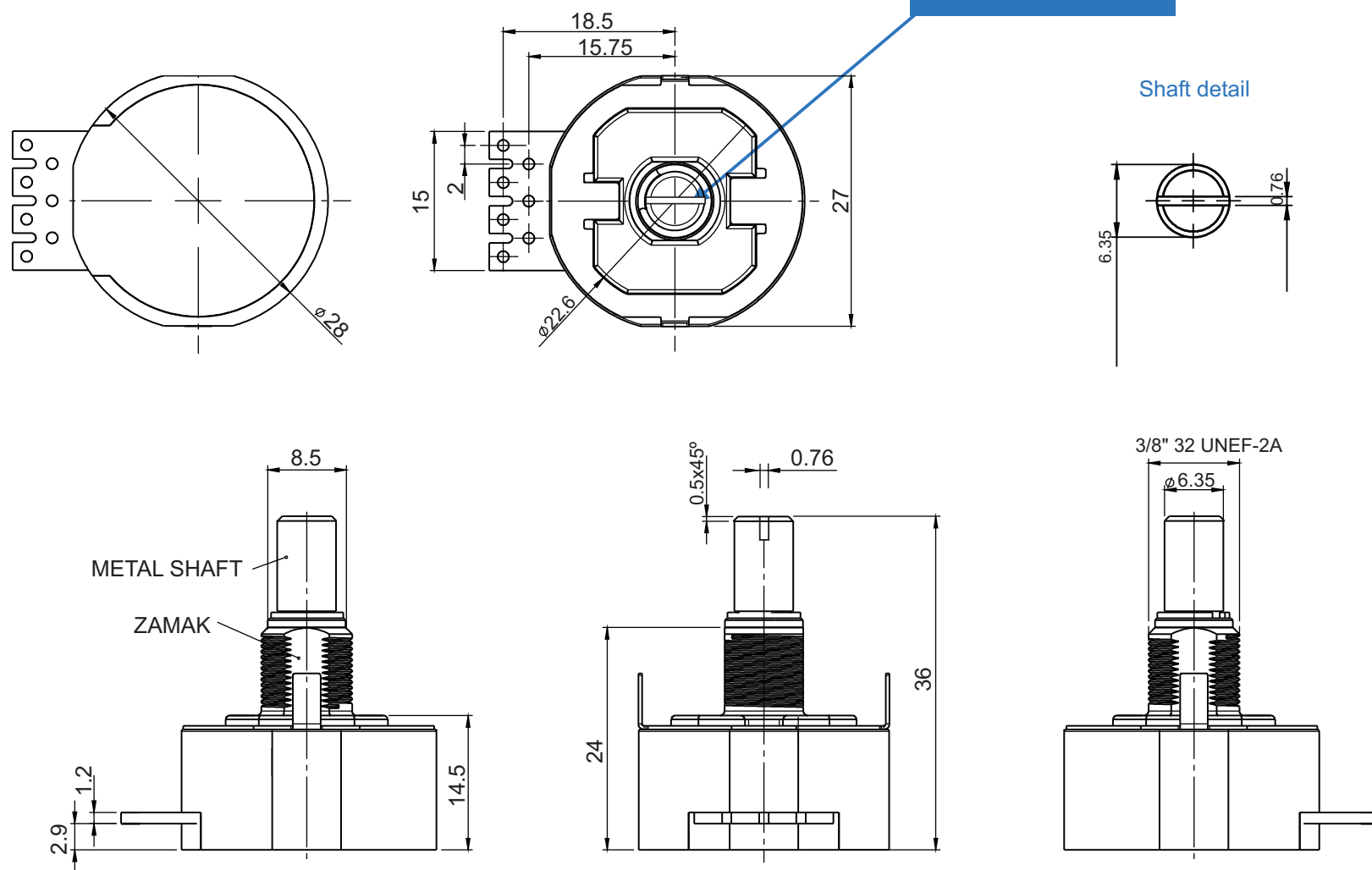


Magnetic rotary angle and position sensor-control.

Contactless sensor. PSC-360U

Dimensions.

Slotted shaft version.



* Nut & washer included.

Mounting instructions.

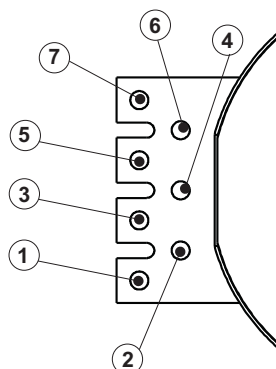
Electronic semiconductor products are sensitive to Electro Static Discharge (ESD).

Always observe Electro Static Discharge control procedures whenever handling semiconductor products.

Connections scheme.

Simple analog output connection scheme:

- 1.- Supply voltage
- 2.- Not used *
- 3.- Not used
- 4.- Not used
- 5.- Not used
- 6.- Ground
- 7.- Analog output



* The output pin needs to be connected to the ground

Piher Sensors & Controls SA

Our product competencies and services:

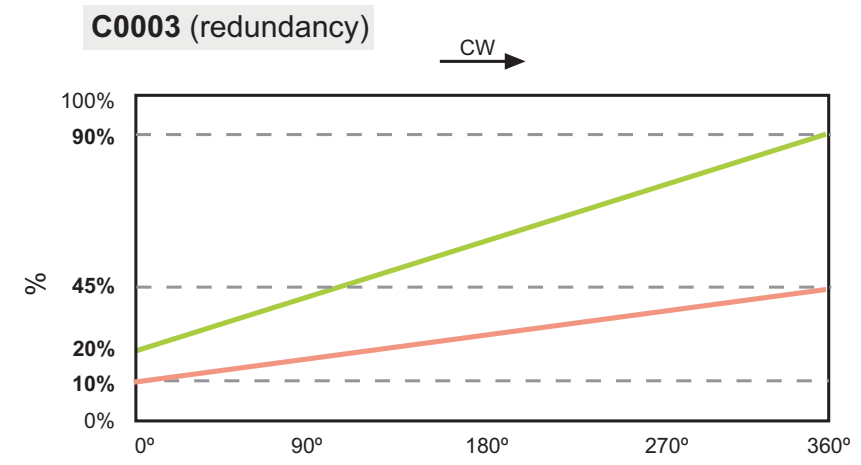
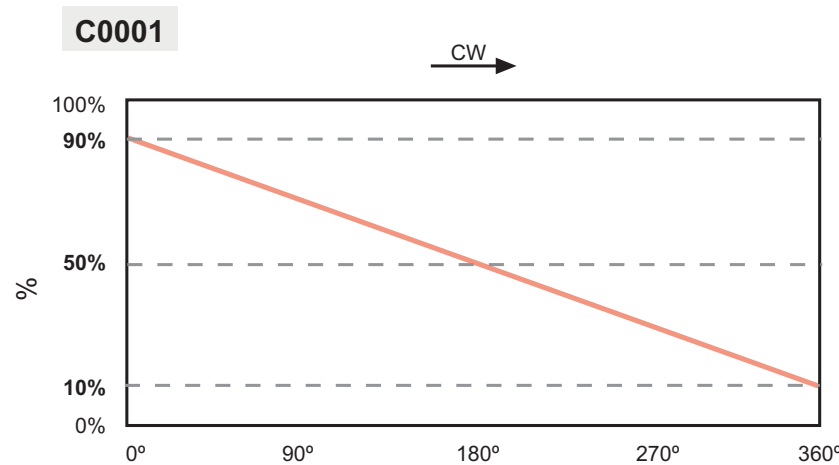
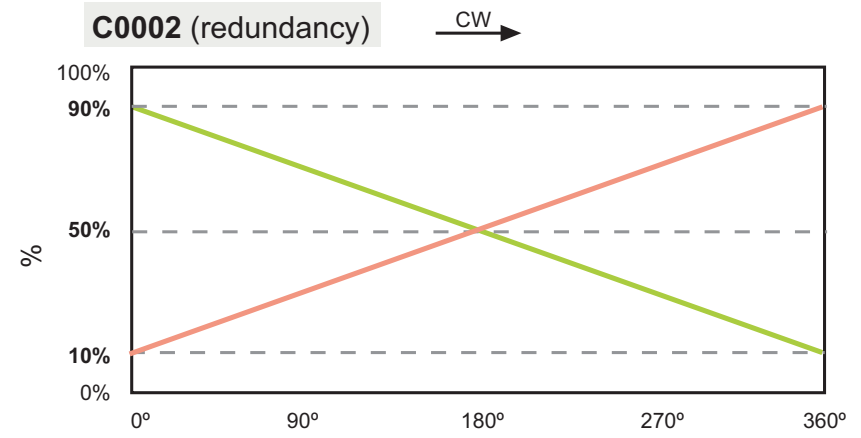
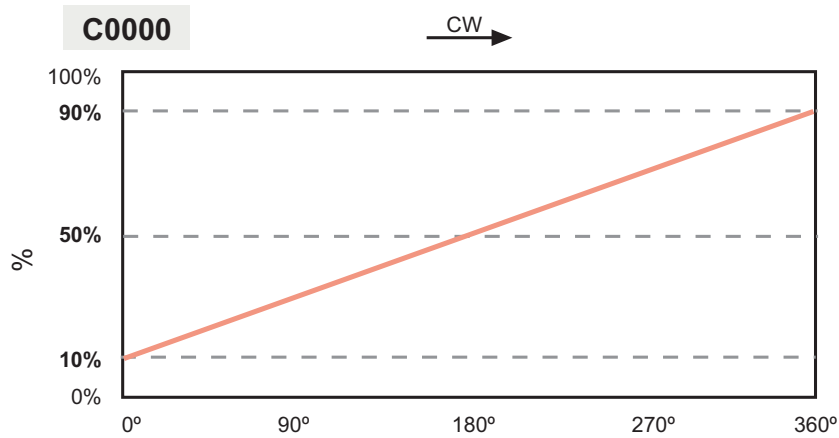
Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies



Magnetic rotary angle and position sensor-control.

Contactless sensor. PSC-360U

Output.



Disclaimer

The product information in this catalogue is for reference purposes. Please consult for the most up to date and accurate design information.

Piher Sensors & Controls S.A., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Piher"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product described herein.

Piher disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Piher's terms and conditions of sale, including but not limited to the warranty expressed therein, which apply to these products.

No licence, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Piher.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Piher products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Piher for any damages arising or resulting from such use or sale. Please contact authorised Piher personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Information contained in and/or attached to this catalogue may be subject to export control regulations of the European Community, USA, or other countries. Each recipient of this document is responsible to ensure that usage and/or transfer of any information contained in this document complies with all relevant export control regulations. If you are in any doubt about the export control restrictions that apply to this information, please contact the sender immediately. For any Piher Exports, Note: All products / technologies are EAR99 Classified commodities. Exports from the United States are in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited.



All Piher products can be adapted to meet customer's requirements.
Due to continuous process improvement, specifications are subject to change without notice.
Please always use the datasheets published at our website www.piher.net for the most up-to-date information.

v220616

Contact

sales@piher.net

www.piher.net

Piher Sensors & Controls SA

Our product competencies and services:

Potentiometers | **Position / angle sensors** | Rotary switches | Incremental encoders
Printed circuit resistors | Mechatronics | Value added assemblies

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Piher:

[PSC360-F1A-W-360-000- - -](#) [PSC360U-F1A-W-360-000- - -](#)