

MAIN FEATURES

- Specifically designed for leadfree reflow soldering processes (excellent performance).
- Up to 10K cycles mechanical life.
- IP54 protection according to IEC 60529.
- Cermet resistive element.
- Plastic material according to UL94V-0.
- Alumina substrate.
- 10mm version available (PSC-10).
- Full traceability.
- Also upon request:
 - Long life model for low cost control potentiometer applications.
 - Mechanical detents.
 - Low torque version.
 - Centering pins.
 - Wiper positioned at initial, 50% or fully clockwise.

MECHANICAL SPECIFICATIONS

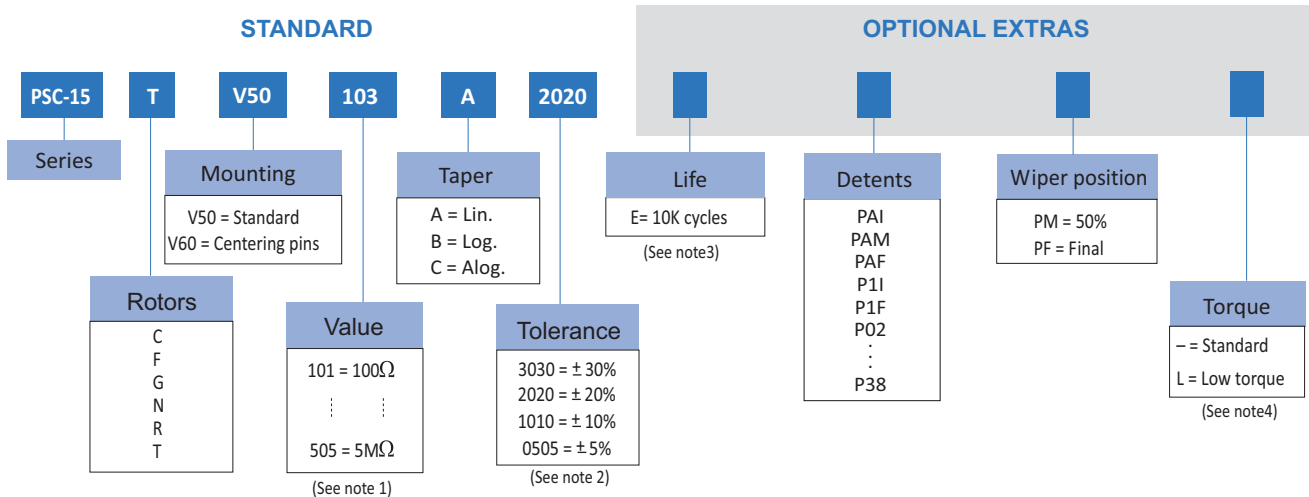
- Mechanical life*: Up to 10k cycles.
- Mechanical rotation angle: $265^\circ \pm 5^\circ$
- Electrical rotation angle: $240^\circ \pm 20^\circ$
- Torque: 0.5 to 2.5 Ncm. (0.7 to 3.4 in-oz)
- Stop torque: > 10 Ncm. (>14 in-oz)

ELECTRICAL SPECIFICATIONS

- Range of values*: $100\Omega \leq R_n \leq 5M\Omega$ (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Standard tolerance*: $100\Omega \leq R_n \leq 1M\Omega$ $\pm 20\%$
 $1M\Omega \leq R_n \leq 5M\Omega$ $\pm 30\%$
- Tapers*: Lin, Log, Alog (Log and Alog. only $R_n \geq 1K$).
- Nominal power: 0.50W @ 70°C (158°F)
- Operating temperature*: $-40^\circ C + 90^\circ C$
- Residual resistance: $\leq 0.5\%$ R_n
- Equivalent noise resistance: $\leq 3\%$ R_n
- Max. voltage: 250 VDC

* Others upon request

HOW TO ORDER



NOTES:

- (1) Value Example: $\overset{10}{\text{---}} \overset{1}{\text{---}} = 100 \Omega$
Number of zeros.
First two digits of the value.
- (2) Non standard tolerance, upon request. Example: +7%
-5%
07 05
negative tolerance
positive tolerance
- (3) 100k cycles version available (to be studied case by case).
- (4) Low torque: $\leq 1.5Ncm$. No detent option available for low torque models.

HOW TO ORDER CUSTOM DRAWING

PSC15TV50 + DRAWING NUMBER

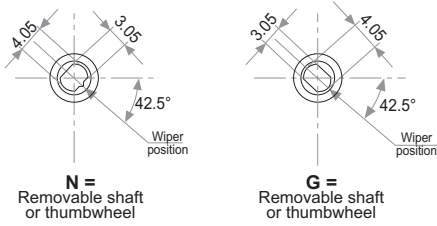
This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

STANDARD OPTIONS

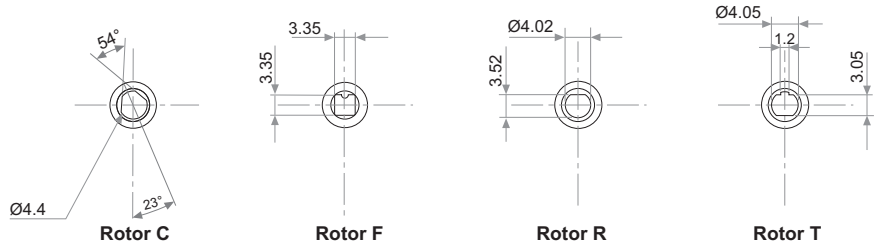
Mechanical Life	1000 cycles
Detents	None
Rotor colour	Brown
Housing colour	Brown
Wiper position	Initial
Torque	Standard
Packaging	Reel

ROTORS (collector side view)

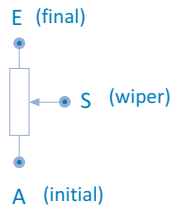
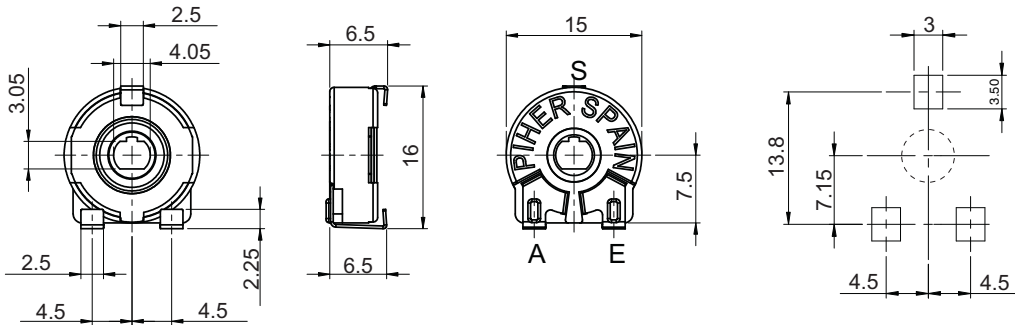
Wipers positioned at initial



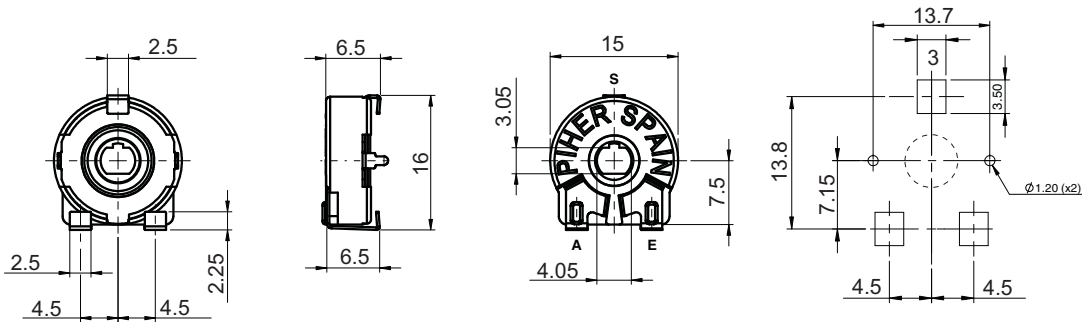
Wipers positioned at 50%



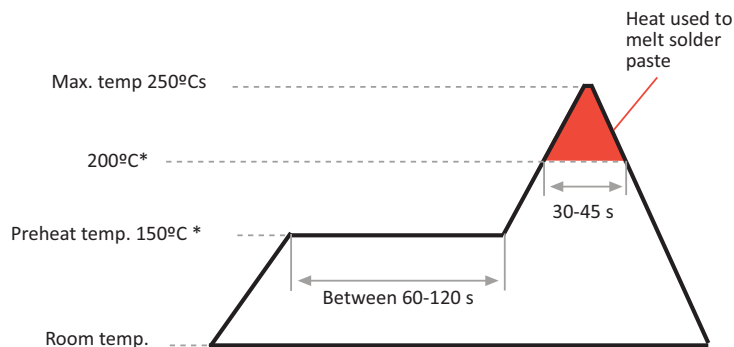
DIMENSIONS (V50 version)



DIMENSIONS (V60 version - with centering pins)



RECOMMENDED REFLOW PROFILE



* Melting point temp. depends on solder properties

TESTS

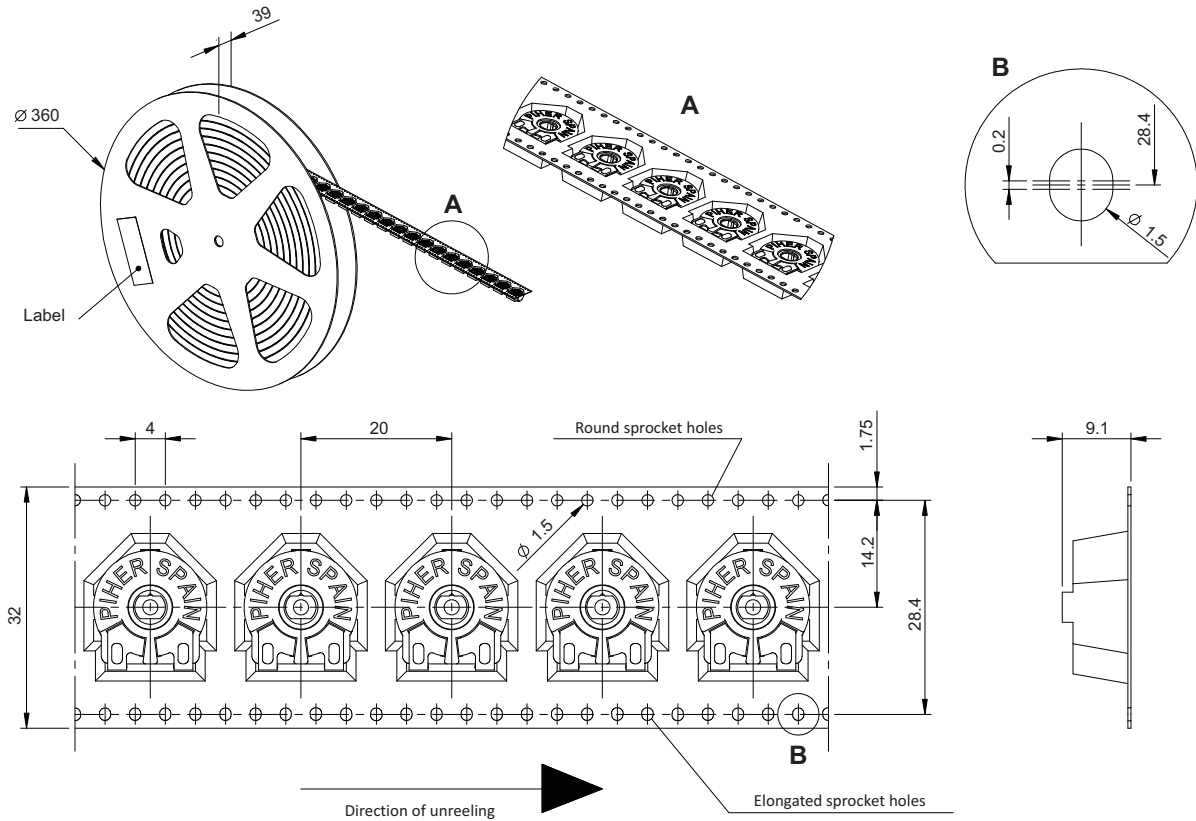
TYPICAL VARIATIONS

ELECTRICAL LIFE	1.000 h. @ 70°C; 0.5 W	± 5 %
MECHANICAL LIFE (CYCLES)	1000 @ 10 CPM ...15 CPM	± 3 % (Rn < 1 MΩ)
TEMPERATURE COEFFICIENT	-40° C; +90° C	± 100 ppm (Rn <100 K)
THERMAL CYCLING	16 h. @ 90° C; 2h. @ -40° C	± 2.5 %
DAMP HEAT	500 h. @ 40° C @ 95% HR	± 5 %
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	± 2 %

NOTE: Out of range values may not comply these results.

PACKAGING

BULK: 500pcs per box (80 x 85 x 185 mm.).
EMBOSSED TAPE: 400pcs per reel.



SHAFTS (for N, G and T rotor types, top view)

Hollow model shafts

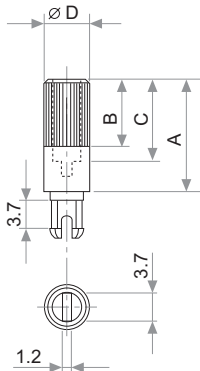


FIG.	A	B	C	D	Ref.
1	12	9	8	6	5272
2	19	9	15	6	5214
5	9.5	6.5	5.5	6	5208
9	35	9	31	6	5216
10	37.8	9	33.8	6	5218
11	35	25	15	6	5209
13	7.8	4.8	3.8	6	5265

Solid model shafts

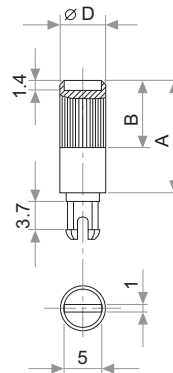


FIG.	A	B	D	Ref.
6	15	9	6	5219
7	16.8	9	6	5220
8	25.3	9	6	5207
12	46	5	6	5227

A = Length (FRS)
B = Knurling length
C = Hollow depth
D = Shaft diameter
FRS = From rotor surface

Slot (1 x 1.4) perpendicular to wiper position. Fig. 12 slot is in line with wiper position.

Shafts, knobs & & thumbwheels are delivered unassembled.

SHAFTS (for N, G and T rotor types, top view)

If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.
Shafts, knobs & thumbwheels are delivered unassembled.

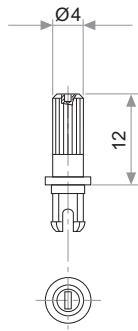


Fig. 3 / Ref. 5372

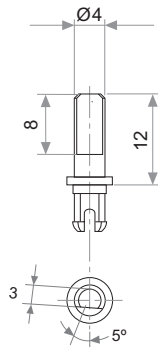


Fig. 15 / Ref. 5217

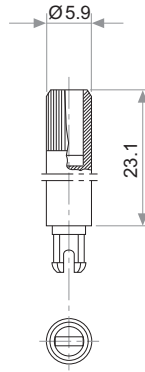


Fig. 17 / Ref. 5210

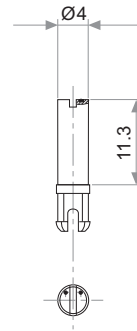


Fig. 18 / Ref. 5271

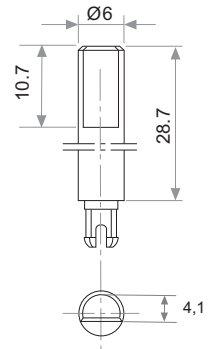


Fig. 19 / Ref. 6032*

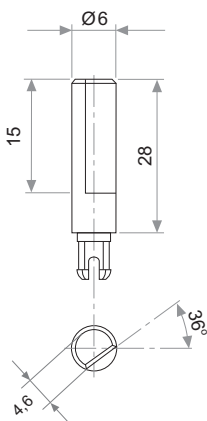


Fig. 20 / Ref. 5369*

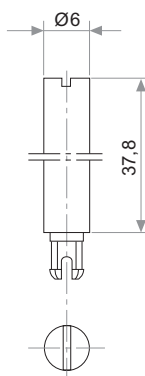


Fig. 21 / Ref. 6031*

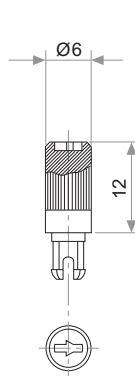


Fig. 22 / Ref. 6029

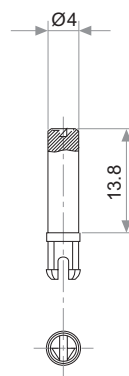


Fig. 23 / Ref. 6022

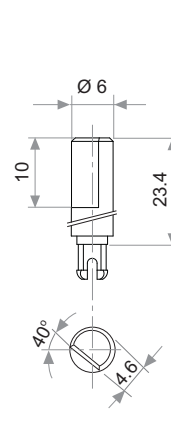


Fig. 29 / Ref. 6162

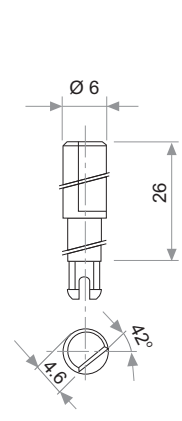


Fig. 25 / Ref. 6059

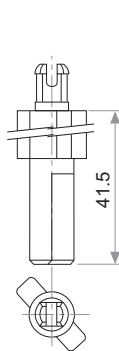


Fig. 27 / Ref. 5268*

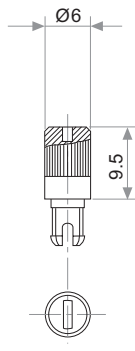


Fig. 28 / Ref. 6055

* Not available in self extinguishable plastic

THUMBWHEEL (for N, G and T rotor types, top view)

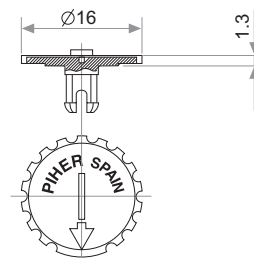


Fig. 4 / Ref. 5371

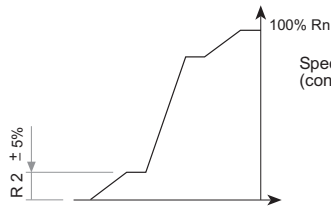
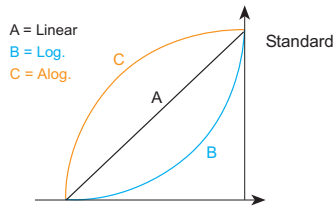
* Not available in self extinguishable plastic

STANDARD VALUES AND TOLERANCES

Resistance Ω	100	200	220	250	470	500	1K	2K	2.2K	2.5K	4.7K	5K	10K	20K	22K	25K	47K	50K	100K	200K	220K	250K	470K	500K	1M	2M	2.5M	4.7M	5M
How to order code	101	201	221	251	471	501	102	202	222	252	472	502	103	203	223	253	473	503	104	204	224	254	474	504	105	205	255	475	505
Standard tolerance	20%																								30%				

(Others upon request)

TAPERS



DETENT CONFIGURATIONS EXAMPLES

This innovative PT's with detents family has been specifically developed to allow the integration of otherwise large and expensive external mechanisms into the body of the potentiometer thus allowing a high range of configurations: special tapers, torque, tolerances, linearity, etc.

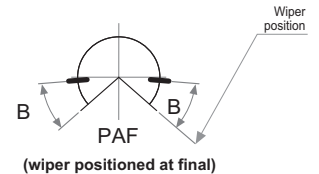
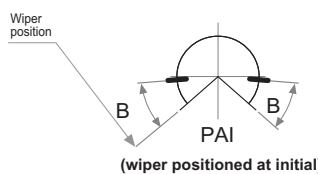
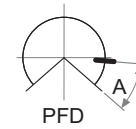
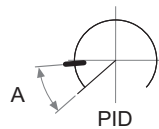
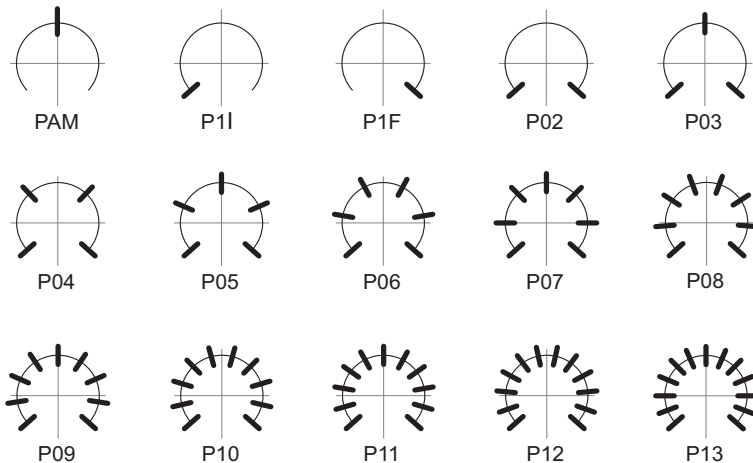
This detent design not only adds a "click" sensation of position, but also offers enormous savings in both cost and space for any given application.

Strong and weak detents can be mixed as per customer's request.

Detent number and positions can be made or fitted to the customer needs or preferences.

Relative detent positions along the total mechanical travel. Unless otherwise specified the detents are evenly spaced (using the end points as reference)

A = 32.625°
B = 34.5°



NOTES FOR DETENTED VERSIONS:

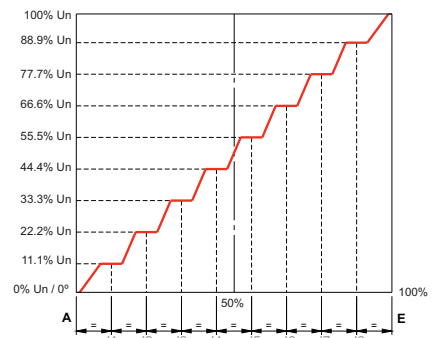
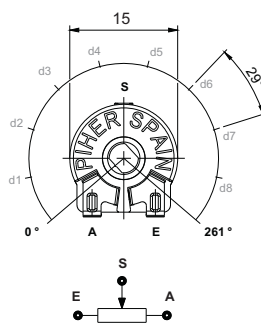
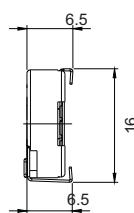
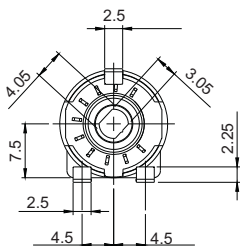
- Some configurations may have a longer leadtime.
- Standard mechanical life is 500 cycles.
- Long life versions are available under request and have the following characteristics at T²:
 - Potentiometers with 1 to 3 detents: up to 10K cycles
 - Potentiometers with 4 and more detents: up to 5K cycles
- Detent torque can vary from 1.2 to 2.5 times the standard potentiometer torque.
- Please consult your nearest Piher supplier if unique non-overlapping values at each detent position or LOG/ALOG tapers are required.
- Different output voltage values can be matched at each detent position (under request).

DETENT DETAILS

DETENTS & STEPPED OUTPUTS

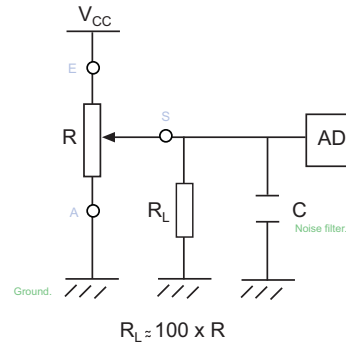
10 detents example

Our potentiometers can feature flattened regions in its output curve. This allows engineers to precisely control constant voltage outputs within the normal rotational range of their potentiometer. These regions can be combined with Piher's detent feature providing a positive mechanical action when rotating the potentiometer into these constant voltage zones.



RECOMMENDED CONNECTIONS

Piher potentiometer's recommended connection circuit for a position sensor or control application. (voltage divider circuit electronic design).



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

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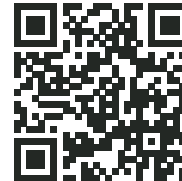
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RoHS
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All Piher products can be adapted to meet customer's requirements.
Due to continuous process improvement, specifications are subject to change without notice.
Please always use the datasheets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

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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