

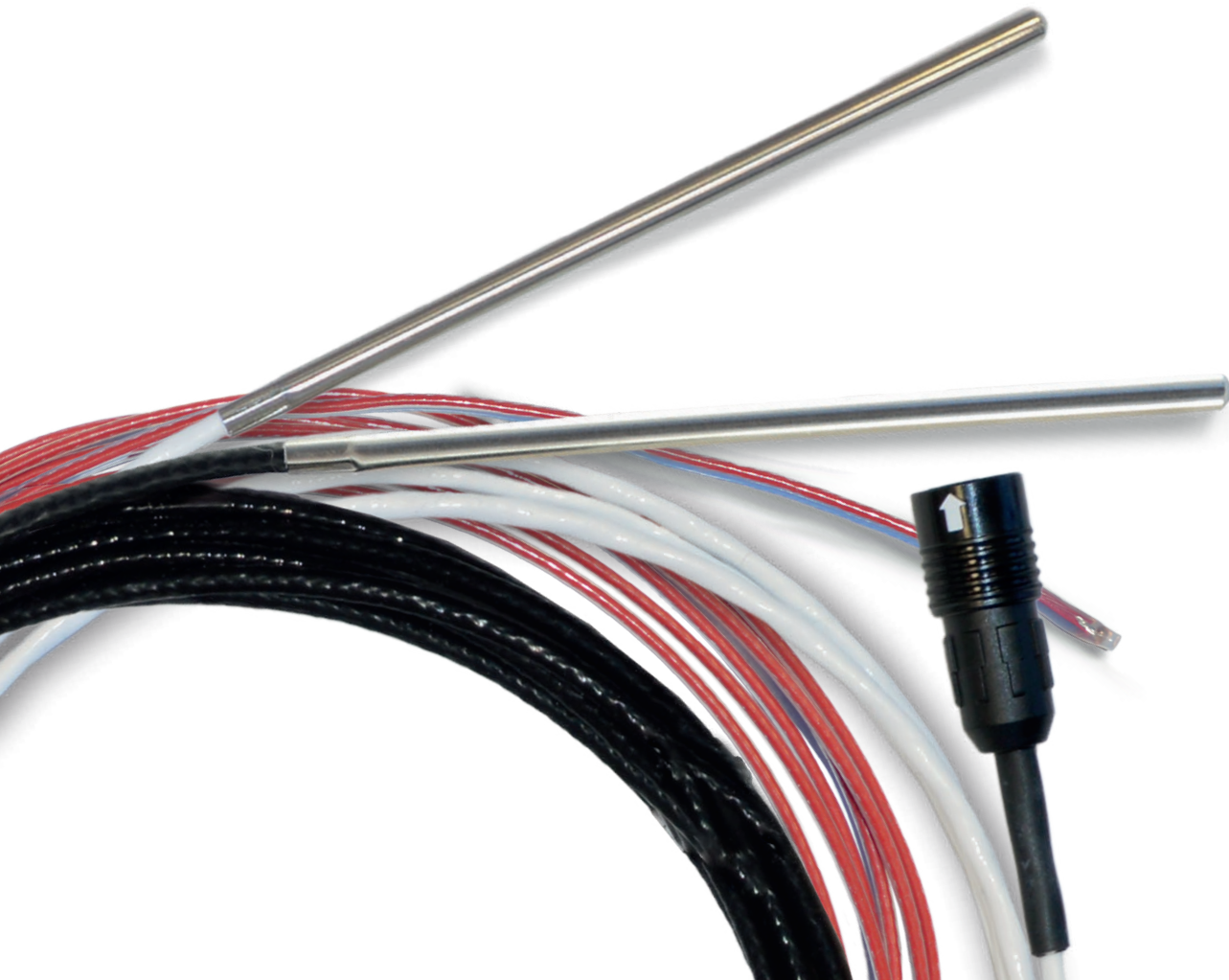
# Hanwell IceSpy

## Sensor Options

The **Hanwell IceSpy** Sensor options technical data sheet details all the sensors available to use with the Hanwell IceSpy Series products.

Please select your product first from the relevant Hanwell IceSpy product datasheets, then add your required sensor appropriately as below. *Please note that sensor temperature ranges may be restricted by the instrument it is used with. Please check the relevant instrument data sheet.*

Note - This datasheet covers our standard and readily available cable lengths. Other lengths may be available than those listed. Please contact Hanwell Solutions with your requirements.



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# Sensor Options

		Probe Family											
		Thermistor	PT100	Thermocouple		RH/T		CO <sub>2</sub>		Airflow	Door	Differential Pressure	Additional Leads
Product family	Unit Type	IN-TH	IN-PT	J043	J044	IN-HUM	IN-HUM2	IN-CO2	IN-CO2-2000	IN-AF	IN-DC	J266	IN-LSC
IN-TH	External thermistor	✓											
IN-THD	External thermistor + door	✓									✓		
IN-TT	Thermocouple			✓	✓								
IN-TTD	Thermocouple + door			✓	✓						✓		
IN-PT	PT100		✓										
IN-PTD	PT100 + door		✓								✓		
IN-RH	RH/T					✓	✓						
IN-VT001	0-1V							✓					✓
IN-VT002	0-5V							✓		✓			✓
IN-VT003	0-10V							✓					✓
IN-MA001	4-20mA								✓				✓
IN-DP-62	Differential Pressure											✓	
Hanwell Lite:													
IN-WT	External thermistor (+ door *)	✓									✓		

\* If door variant

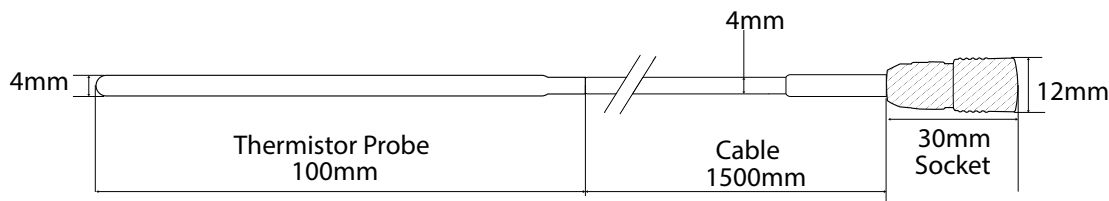
# System Accuracy and Range

**Note:** Accuracies and Measuring Ranges quoted in this Datasheet relate to the **Probes** only.

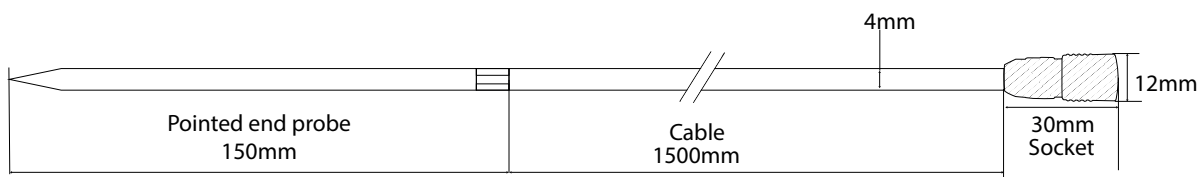
- To calculate **System Accuracy**, add the **Probe Accuracy** to the **Instrument Accuracy** (e.g Transmitter Accuracy).
- The **System Measuring Range**, will be the lesser of the **Instrument** and **Probe** Measuring Ranges.

## IN-TH Thermistor Probes

Standard	Part codes	Specifications
<b>Non-waterproof</b>		Probe diameter 4mm
1.5 metre cable	<a href="#">IN-TH150</a>	Probe operating range -40°C to +100°C
3 metre cable	<a href="#">IN-TH300</a>	Accuracy +/- 0.5°C
<b>Waterproof</b>		Long term drift < 0.1°C per year
1.5 metre cable	<a href="#">IN-TH150-WP</a>	IP rating IP68 (Waterproof version only)
3 metre cable	<a href="#">IN-TH300-WP</a>	



Pointed	Part codes	Specifications
<b>Non-waterproof</b>		Probe diameter 4mm (pointed end)
1.5 metre cable	<a href="#">IN-TH150-P</a>	Probe operating range -40°C to +100°C
<b>Waterproof</b>		Accuracy +/- 0.5°C
1.5 metre cable	<a href="#">IN-TH150-P-WP</a>	Long term drift < 0.1°C per year
		IP rating IP68 (Waterproof version only)



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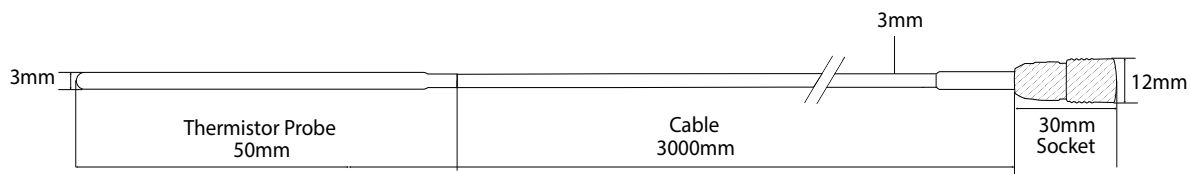
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# IN-TH Thermistor Probes cont'd

Thin	Part codes	Specifications	
<b>Non-waterproof</b>		Probe diameter	3mm
3 metre cable	<a href="#">IN-TH300-3</a>	Probe operating range	-40°C to +100°C
<b>Waterproof</b>		Accuracy	+/- 0.5°C
3 metre cable	<a href="#">IN-TH300-3-WP</a>	Long term drift	< 0.1°C per year
		IP rating	IP68 (Waterproof version only)

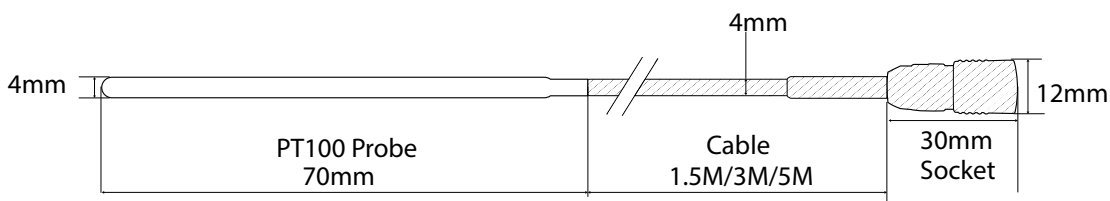
*\*additional lengths available upon request.  
(Thin probe and cable for easy routing around fridge/freezer door seals)*



# PT100 Probes

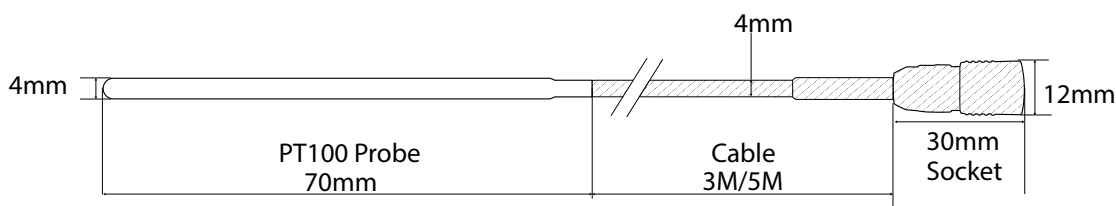
IN-PT143	Part codes	Specifications	
<b>Non-waterproof</b>		Type Class A	Flat film
1.5 metre cable	<a href="#">IN-PT141.5</a>	Probe diameter	4mm
3 metre cable	<a href="#">IN-PT143</a>	Probe operating range	-90°C to +200°C
5 metre cable	<a href="#">IN-PT145</a>	Accuracy -50°C to +250°C	+/- (0.15+0.002* t )°C
<b>Waterproof</b>		Accuracy Below -50°C	+/- (0.3+0.005* t )°C
1.5 metre cable	<a href="#">IN-PT141.5</a>	Long term drift	< 0.1°C per year *dependent on conditions of use
3 metre cable	<a href="#">IN-PT143-WP</a>	IP Rating	IP68 (Waterproof version only)
5 metre cable	<a href="#">IN-PT145-WP</a>		

*\*additional lengths available upon request.*



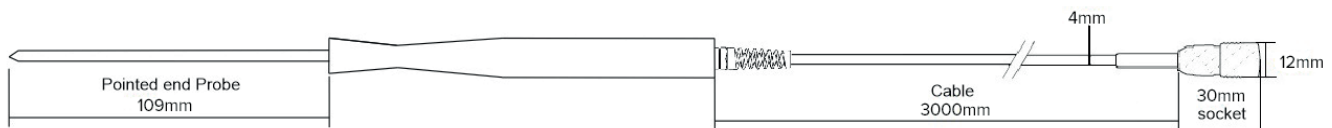
# PT100 Probes cont'd

IN-PT143	Part codes	Specifications
<b>Non-waterproof</b>		Type Class A
3 metre cable	<a href="#">IN-PT143-CAL</a>	Wire wound
5 metre cable	<a href="#">IN-PT145-CAL</a>	Probe diameter 4mm
<b>Waterproof</b>		Probe operating range -200°C to +250°C
3 metre cable	<a href="#">IN-PT143-CAL-WP</a>	Accuracy -100°C to +250°C +/- (0.15+0.002* t )°C
5 metre cable	<a href="#">IN-PT145-CAL-WP</a>	Accuracy Below -100°C +/- (0.3+0.005* t )°C
<i>*additional lengths available upon request.</i>		Long term drift < 0.05°C per year <i>*dependent on conditions of use</i>
		IP Rating IP68 (Waterproof version only)



**Note:** Not suitable for measuring cryogenic liquids such as Liquid Nitrogen (LN2)

IN-PT100-WP	Part codes	Specifications
<b>Stabbing probe</b>		Type Class A
	<a href="#">IN-PT100-WP</a>	Flat film
<i>*additional lengths available upon request.</i>		Probe diameter 4mm
		Probe operating range -90°C to +200°C
		Accuracy -50°C to +250°C +/- (0.15+0.002* t )°C
		Accuracy Below -50°C +/- (0.3+0.005* t )°C
		Long term drift < 0.1°C per year <i>*dependent on conditions of use</i>
		IP Rating IP68 (Waterproof version only)



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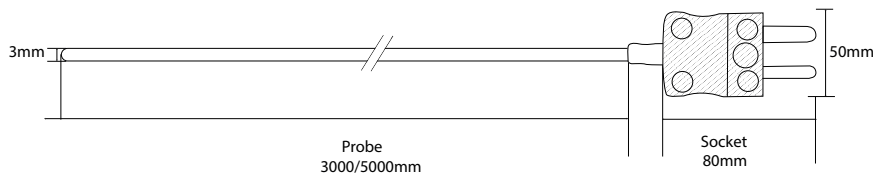
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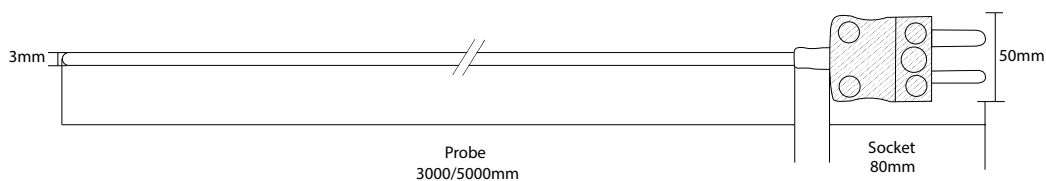
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# J043/J044 Thermocouple Probes

J043 - Teflon Coated	Part Codes	Specifications
3 metre cable	<a href="#">J043-3-09</a>	<b>Type</b> Ultra precision Teflon coated Type T (Thermocouple junction is isolated from sheath) <b>Probe diameter</b> 3mm <b>Probe operating range</b> -200°C to +200°C <b>Accuracy</b> BS EN 60584 - 1:2013 Class 1 +/- 0.5°C or +/-0.4%, (whichever is greater) above -40°C Below -40°C +/-1 or 1.5% of reading <b>Long term drift</b> < 0.1°C per year
5 metre cable	<a href="#">J043-5-09</a>	



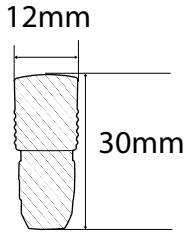
J044 - Mineral Coated	Part Codes	Specifications
3 metre cable	<a href="#">J044-3-09</a>	<b>Type</b> Mineral insulated Type T (Thermocouple junction is isolated) <b>Probe diameter</b> 3mm <b>Probe operating range</b> -200°C to +300°C <b>Accuracy</b> BS EN 60584 - 1:2013 Class 1 +/- 0.5°C or +/-0.4%, (whichever is greater) above -40°C Below -40°C +/-1 or 1.5% of reading <b>Long term drift</b> < 0.1°C per year
5 metre cable	<a href="#">J044-5-09</a>	



# RH/T Probe

**IN-HUM** Part codes

**IN-HUM**

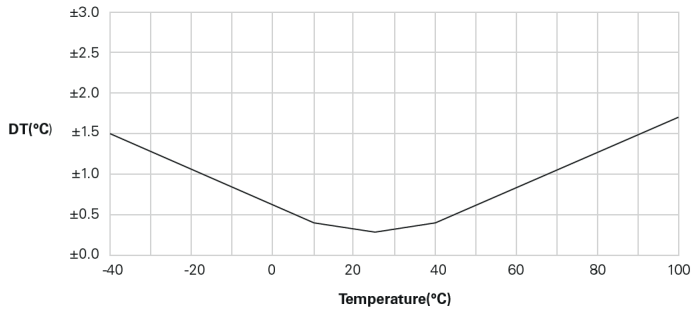


**Humidity Probe details**

Recommended range	0-100% RH non condensing
Accuracy	+/- 3% RH

**Temperature Sensor details (Band gap internal with RH)**

Temperature operating range	-30°C to +50°C
Accuracy	See chart

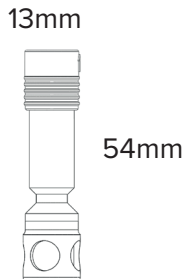


**Extension cables** Part codes Specifications

1.5 metre cable	<b>IN-EXT150</b>	Temperature Operating range	-25°C to +85°C
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**IN-HUM-V2** Part codes

**IN-HUM-V2**

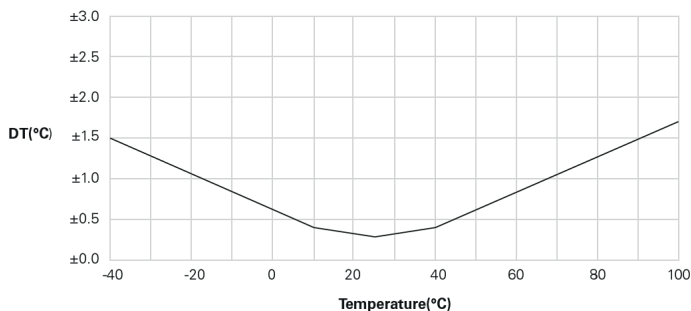


**Humidity Probe details**

Recommended range	0-100% RH non condensing
Accuracy	+/- 3% RH

**Temperature Sensor details (Band gap internal with RH)**

Temperature operating range	-30°C to +50°C
Accuracy	See chart



**IN-HUM V2 Probe Compatibility - IN-RH001F1/ IN-RH001F2**

Serial Numbers 00-01-66-04 and upwards ie:  
 00-01-66-04  
 00-01-66-05 through 00-01-66-99  
 00-01-67-00 through 00-01-99-99  
 00-02-00-00 onwards

**Extension cables** Part codes Specifications

1.5 metre cable	<b>IN-EXT150</b>	Temperature Operating range	-25°C to +85°C
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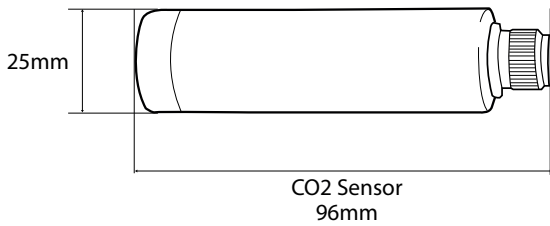
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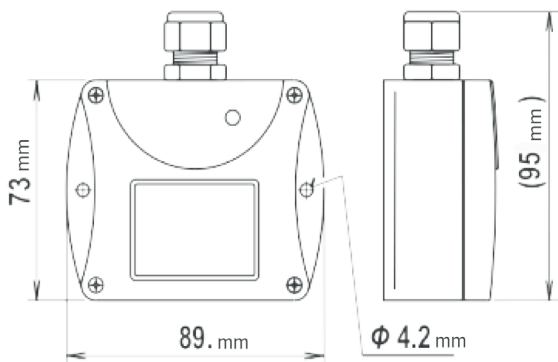
# IN-CO2 CO<sub>2</sub> Sensors

External	Part codes		
(0-5% CO <sub>2</sub> )	<b>IN-CO2-5</b>	Operating Temperature of CO <sub>2</sub> Measurement	-40°C to +60°C
(0-10% CO <sub>2</sub> )	<b>IN-CO2-10</b>	Accuracy @ 25°C and 1013 PA	±0.1% CO <sub>2</sub>
		Temperature Dependence with Compensation, 0 to 20% CO <sub>2</sub> between -40°C and +60°C	±0.045% of reading/°C
		Long term drift	+/- 0.3% CO <sub>2</sub> per year
		Housing	PET plastic
		Cable	1.5 metre
		Output	0-5VDC



*Recommended Installation: The probe can be installed in an environment with an operating temperature range -40 °C to +60 °C. Make sure the probe is in a location that represents the measurement environment properly.*

Concentration	Part codes		
	<b>IN-CO2-2000</b>	Operating Temperature of CO <sub>2</sub> Measurement	-30°C to +60°C
		Measuring range	0 to 2000ppm
		Accuracy	±50ppm +2% of measured value
		Temperature Dependence	-20°C to +45°C typ. 2ppm CO <sub>2</sub> / °C
		Analog output	4-20mA
		IP Rating of housing	IP30
		Cable	3 metre

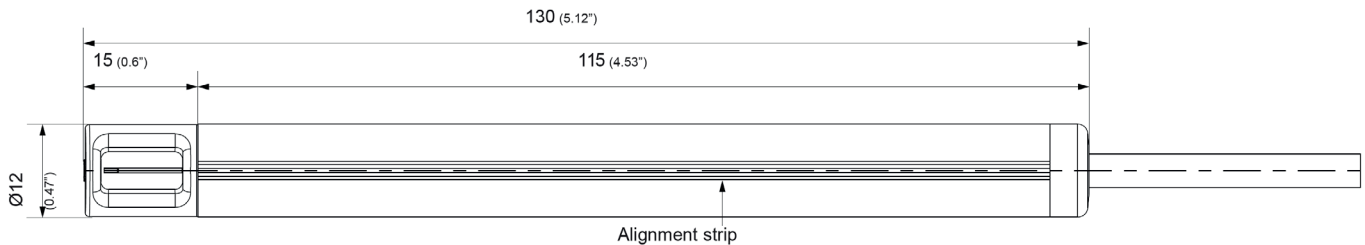


# Airflow Sensors

0-5M/S	Part codes	Specifications
	<b>IN-AF05MS</b>	
		Probe operating range 0-5m/s (0... 1000ft/min)
		Analogue Output 0-5V
		Working range temperature -20°C to +60°C
		Storage temperature -30°C to +60°C
		Working range 0-5m/s (0... 1000ft/min)
		Accuracy ±(0.2m/s / 40ft/ min +3% of measuring value)
		Cable length 2 metres
		Power supply 12V via external universal power supply

0-10M/S	Part codes	Specifications
	<b>IN-AF010MS</b>	
		Probe operating range 0-10m/s (0...2000ft/min)
		Analogue Output 0-5V
		Working range temperature -20°C to +60°C
		Storage temperature -30°C to +60°C
		Working range 0-10m/s (0...2000ft/min)
		Accuracy ±(0.3m/s / 60ft/ min +4% of measuring value)
		Cable length 2 metres
		Power Supply 12V via external universal power supply

0-20M/S	Part codes	Specifications
	<b>IN-AF020MS</b>	
		Probe operating range 0-20m/s (0...4000ft/min)
		Analogue Output 0-5V
		Working range temperature -20°C to +60°C
		Storage temperature -30°C to +60°C
		Working range 0-20m/s (0...4000ft/min)
		Accuracy ±(0.4m/s / 80ft/min +6% of measuring value)
		Cable length 2 metres
		Power supply 12V via external universal power supply



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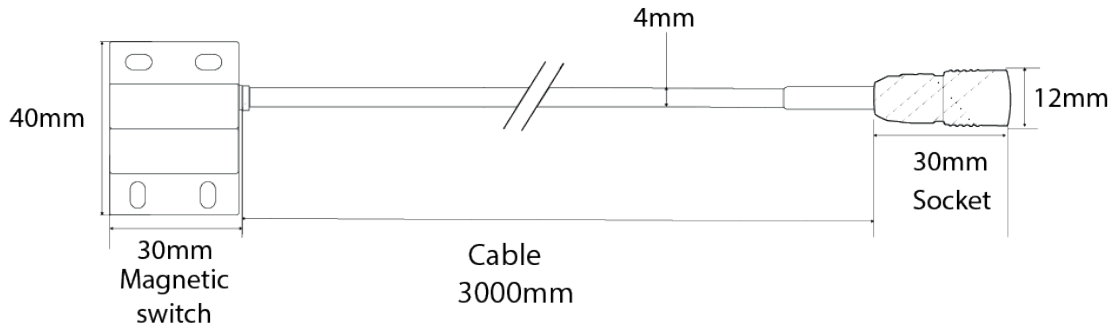
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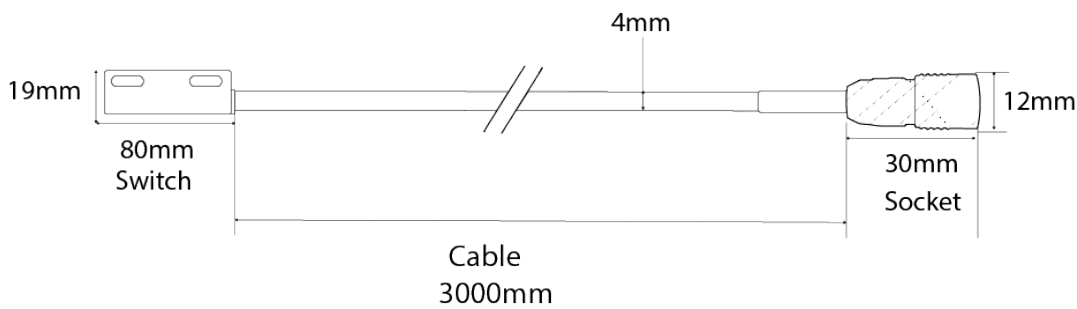
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# IN-DC Door Sensors

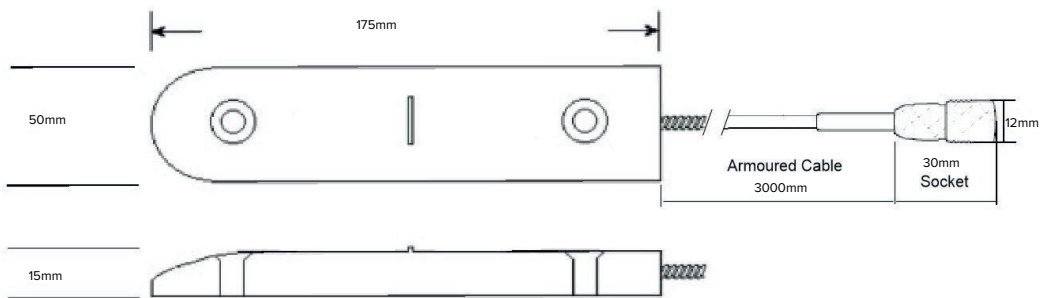
IN-DC001 (Light weight Door switch)	Part codes	Specifications
	<a href="#">IN-DC001</a>	Cable length 3 metre cable



IN-DC002 (Medium duty Door switch with Hirose)	Part codes	Specifications
	<a href="#">IN-DC002</a>	Cable length 3 metre cable



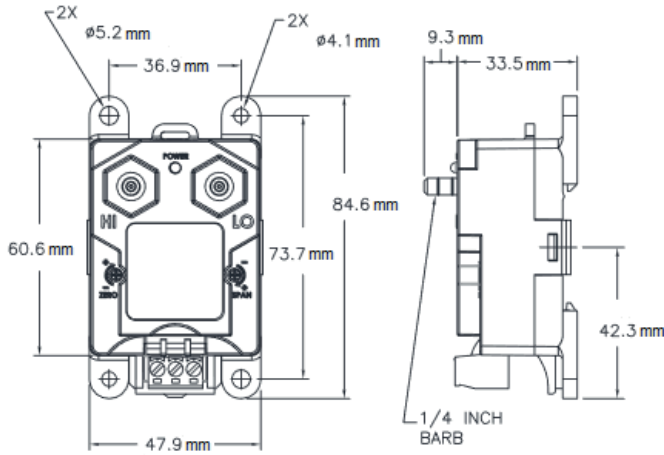
IN-DC003 (Industrial Door events sensor)	Part codes	Specifications
	<a href="#">IN-DC003</a>	Cable length 3 metre cable



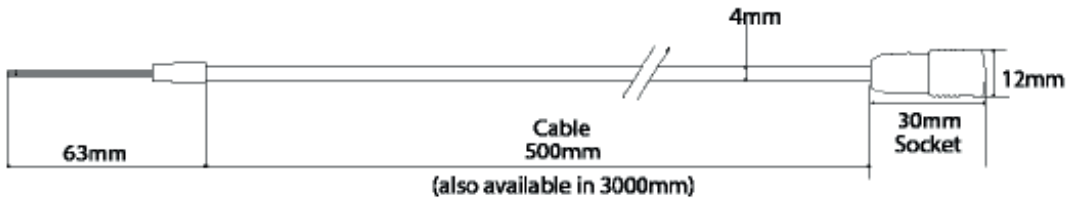
Extension cables	Part codes	Specifications
	<a href="#">IN-DSC-3.0</a>	Temperature Operating Range -20°C to +70°C

# IN-DP-62

External	Part codes	Specifications																				
±0.25 IWC	<b>J266</b>	<table border="1"> <tr> <td>Operating Voltage</td> <td>12 - 36 VDC</td> </tr> <tr> <td>Operating Temperature</td> <td>0 to 160°F (-18 to 71°C)</td> </tr> <tr> <td>Storage Temperature</td> <td>-40 to 180°F (-40 to 82°C)</td> </tr> <tr> <td>Humidity</td> <td>10 to 95% R.H., non-condensing</td> </tr> <tr> <td>Stability</td> <td>Less than m0.25% full range / year</td> </tr> <tr> <td>Accuracy</td> <td>±1% maximum. Includes non-linearity, hysteresis, nonrepeatability, zero offset and span setting errors.</td> </tr> <tr> <td>Response Time</td> <td>250 msec</td> </tr> <tr> <td>Proof Pressure</td> <td>15 psig</td> </tr> <tr> <td>Burst Pressure</td> <td>25 psig</td> </tr> <tr> <td>Cable length</td> <td>0.5 metre</td> </tr> </table>	Operating Voltage	12 - 36 VDC	Operating Temperature	0 to 160°F (-18 to 71°C)	Storage Temperature	-40 to 180°F (-40 to 82°C)	Humidity	10 to 95% R.H., non-condensing	Stability	Less than m0.25% full range / year	Accuracy	±1% maximum. Includes non-linearity, hysteresis, nonrepeatability, zero offset and span setting errors.	Response Time	250 msec	Proof Pressure	15 psig	Burst Pressure	25 psig	Cable length	0.5 metre
Operating Voltage	12 - 36 VDC																					
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Stability	Less than m0.25% full range / year																					
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Response Time	250 msec																					
Proof Pressure	15 psig																					
Burst Pressure	25 psig																					
Cable length	0.5 metre																					



Cable options available	Part codes	Specifications
	<b>X253</b>	Cable length 3 metre cable



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# Additional Leads

## IN-LSC1

IN-LSC1	Part codes	Specifications
5 metre cable	<a href="#">IN-LSC-0.5</a>	Lead that can be used to attach linear sensors to the IceSpy range
3 metre cable	<a href="#">IN-LSC-3.0</a>	





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