

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.



Temperature



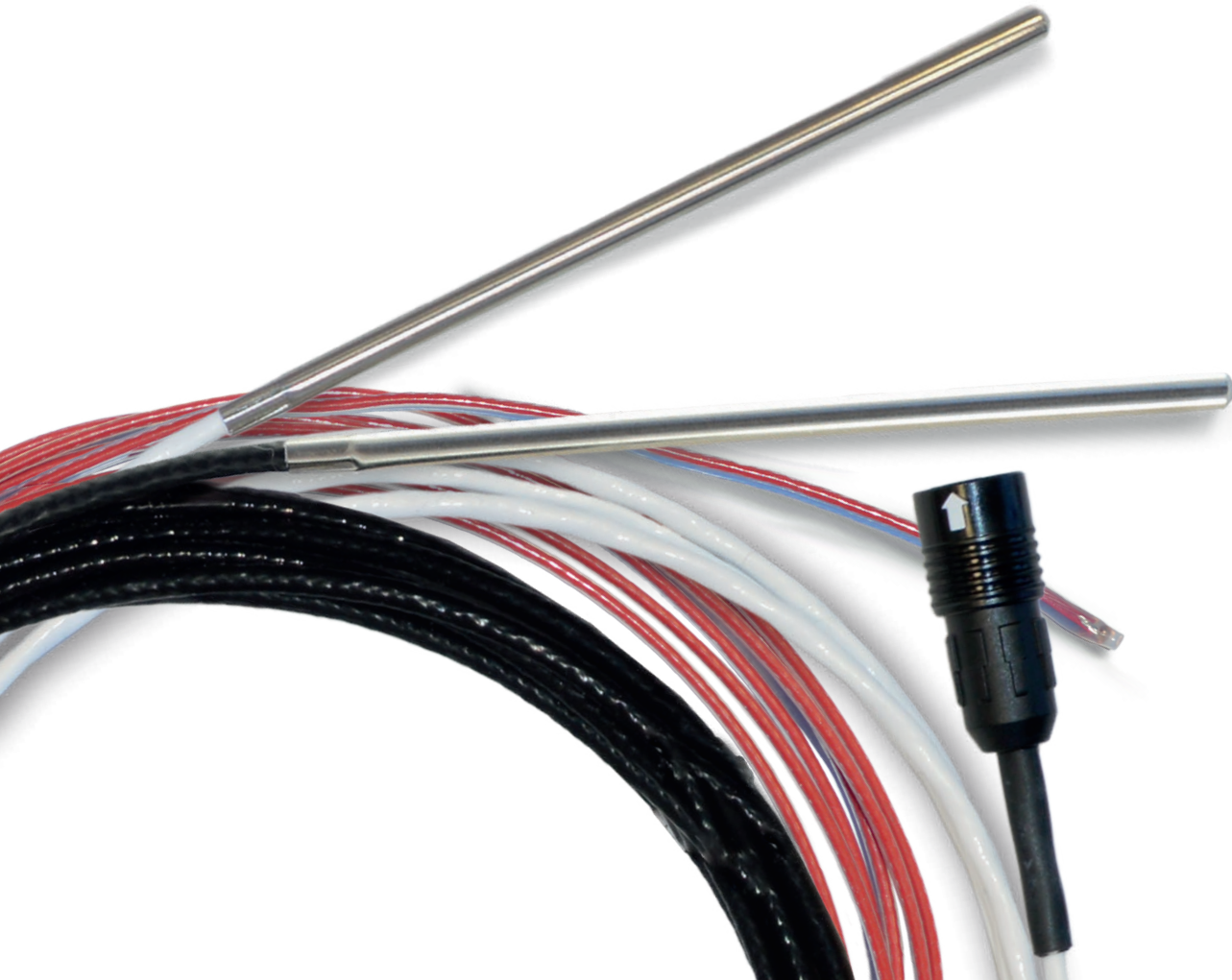
Humidity



Carbon Dioxide



Airflow



Intentionally Blank



Sensor Options

		Probe Family											
		Thermistor	PT100	Thermocouple		RH/T		CO ₂		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



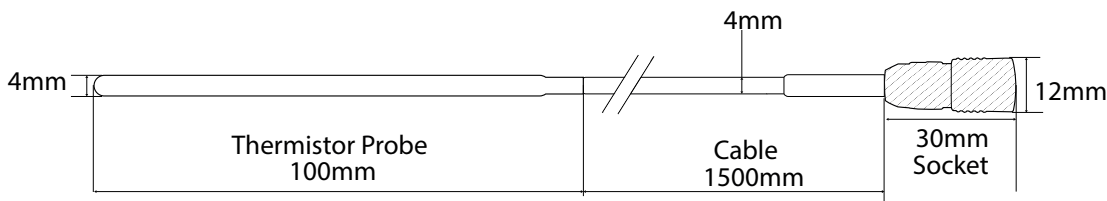
System Accuracy and Range

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

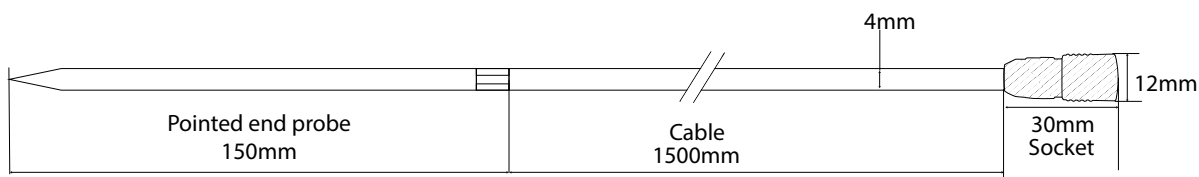
- To calculate **System Accuracy**, add the **Probe Accuracy** to the **Instrument Accuracy** (e.g Transmitter Accuracy).
- The **System Measuring Range**, will be the lesser of the **Instrument** and **Probe** Measuring Ranges.

IN-TH Thermistor Probes

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



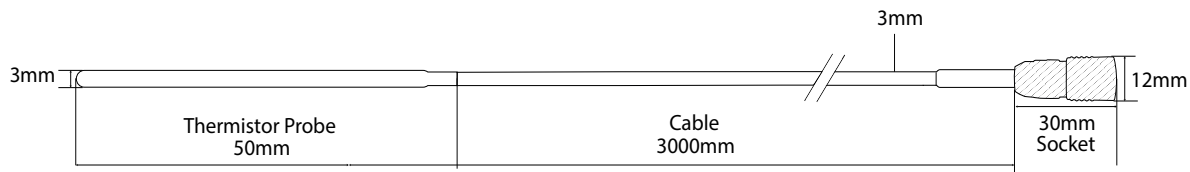
Pointed	Part codes	Specifications
Non-waterproof		Probe diameter 4mm (pointed end)
1.5 metre cable	IN-TH150-P	Probe operating range -40°C to +100°C
Waterproof		Accuracy +/- 0.5°C
1.5 metre cable	IN-TH150-P-WP	Long term drift < 0.1°C per year
		IP rating IP68 (Waterproof version only)



IN-TH Thermistor Probes cont'd

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

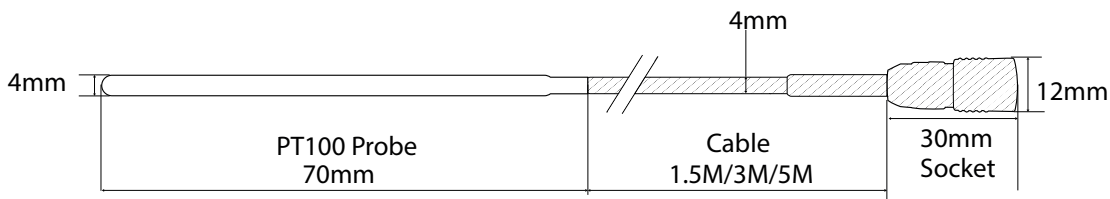
**additional lengths available upon request.
(Thin probe and cable for easy routing around fridge/freezer door seals)*



PT100 Probes

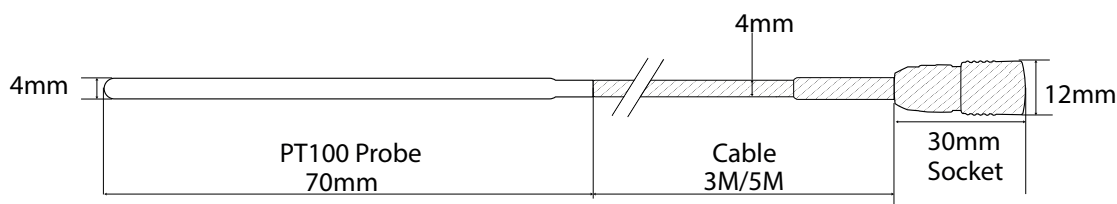
IN-PT143	Part codes	Specifications	
Non-waterproof		Type Class A	Flat film
1.5 metre cable	IN-PT141.5	Probe diameter	4mm
3 metre cable	IN-PT143	Probe operating range	-90°C to +200°C
5 metre cable	IN-PT145	Accuracy -50°C to +250°C	+/- (0.15+0.002* t)°C
Waterproof		Accuracy Below -50°C	+/- (0.3+0.005*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

**additional lengths available upon request.*



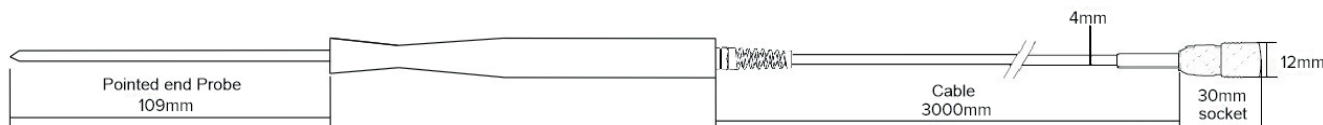
PT100 Probes cont'd

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



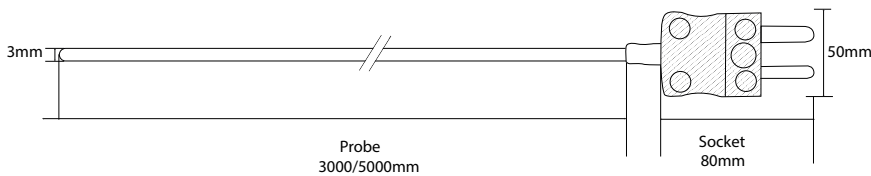
Note: Not suitable for measuring cryogenic liquids such as Liquid Nitrogen (LN2)

IN-PT100-WP	Part codes	Specifications
Stabbing probe		Type Class 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 *dependent on conditions of use
		IP Rating IP68 (Waterproof version only)

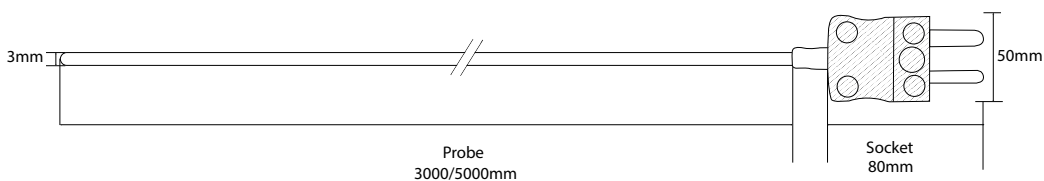


J043/J044 Thermocouple Probes

J043 - Teflon Coated	Part Codes	Specifications										
3 metre cable	J043-3-09	<table border="1"> <tr> <td>Type</td> <td>Ultra precision Teflon coated Type T (Thermocouple junction is isolated from sheath)</td> </tr> <tr> <td>Probe diameter</td> <td>3mm</td> </tr> <tr> <td>Probe operating range</td> <td>-200°C to +200°C</td> </tr> <tr> <td>Accuracy</td> <td>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</td> </tr> <tr> <td>Long term drift</td> <td>< 0.1°C per year</td> </tr> </table>	Type	Ultra precision Teflon coated Type T (Thermocouple junction is isolated from sheath)	Probe diameter	3mm	Probe operating range	-200°C to +200°C	Accuracy	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	Long term drift	< 0.1°C per year
Type	Ultra precision Teflon coated Type T (Thermocouple junction is isolated from sheath)											
Probe diameter	3mm											
Probe operating range	-200°C to +200°C											
Accuracy	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											
Long term drift	< 0.1°C per year											
5 metre cable	J043-5-09											



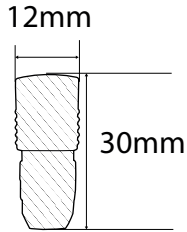
J044 - Mineral Coated	Part Codes	Specifications										
3 metre cable	J044-3-09	<table border="1"> <tr> <td>Type</td> <td>Mineral insulated Type T (Thermocouple junction is isolated)</td> </tr> <tr> <td>Probe diameter</td> <td>3mm</td> </tr> <tr> <td>Probe operating range</td> <td>-200°C to +300°C</td> </tr> <tr> <td>Accuracy</td> <td>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</td> </tr> <tr> <td>Long term drift</td> <td>< 0.1°C per year</td> </tr> </table>	Type	Mineral insulated Type T (Thermocouple junction is isolated)	Probe diameter	3mm	Probe operating range	-200°C to +300°C	Accuracy	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	Long term drift	< 0.1°C per year
Type	Mineral insulated Type T (Thermocouple junction is isolated)											
Probe diameter	3mm											
Probe operating range	-200°C to +300°C											
Accuracy	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											
Long term drift	< 0.1°C per year											
5 metre cable	J044-5-09											



RH/T Probe

IN-HUM Part codes

IN-HUM

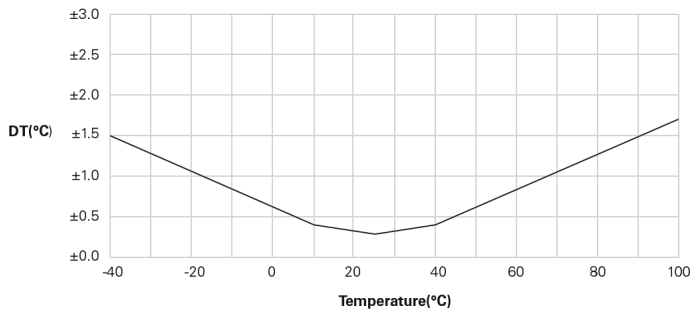


Humidity Probe details

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

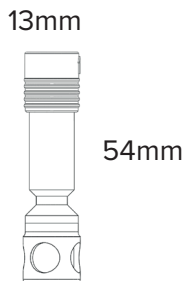


Extension cables Part codes Specifications

1.5 metre cable	IN-EXT150	Temperature Operating range	-25°C to +85°C
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IN-HUM-V2 Part codes

IN-HUM-V2

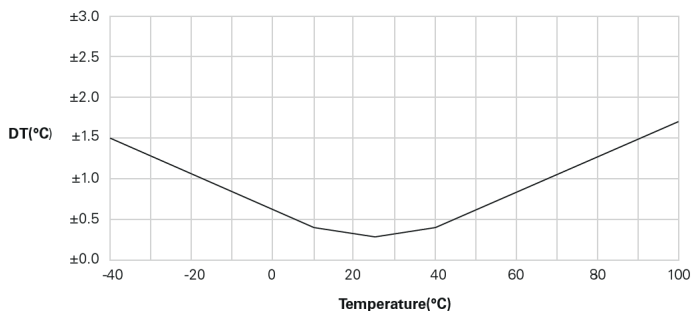


Humidity Probe details

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

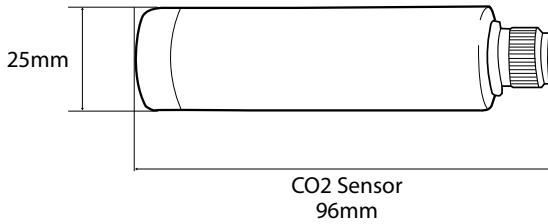
Extension cables Part codes Specifications

1.5 metre cable	IN-EXT150	Temperature Operating range	-25°C to +85°C
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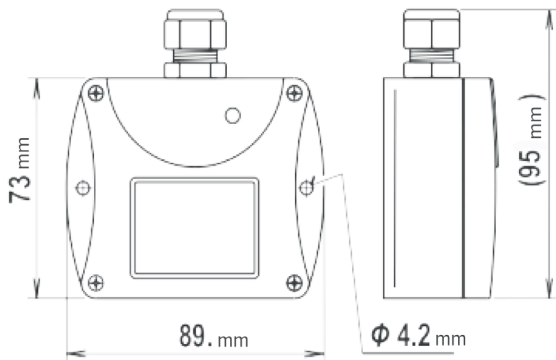
IN-CO2 CO₂ Sensors

External	Part codes		
(0-5% CO ₂)	IN-CO2-5	Operating Temperature of CO ₂ Measurement	-40°C to +60°C
(0-10% CO ₂)	IN-CO2-10	Accuracy @ 25°C and 1013 PA	±0.1% CO ₂
		Temperature Dependence with Compensation, 0 to 20% CO ₂ between -40°C and +60°C	±0.045% of reading/°C
		Long term drift	+/- 0.3% CO ₂ 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		
	IN-CO2-2000	Operating Temperature of CO ₂ 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 ₂ / °C
		Analog output	4-20mA
		IP Rating of housing	IP30
		Cable	3 metre

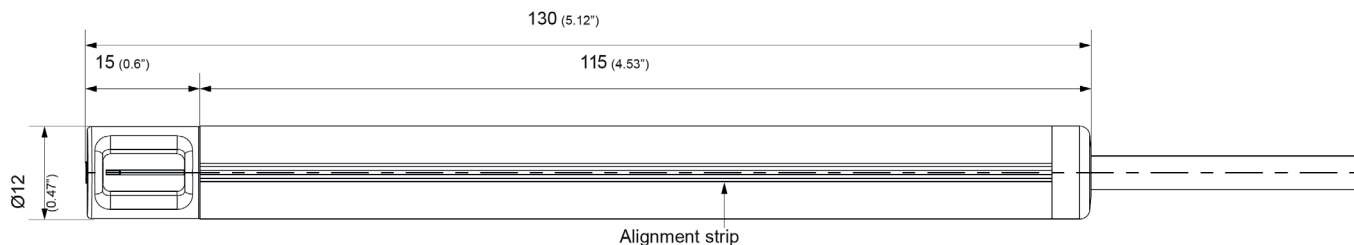


Airflow Sensors

0-5M/S	Part codes	Specifications
	IN-AF05MS	
		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

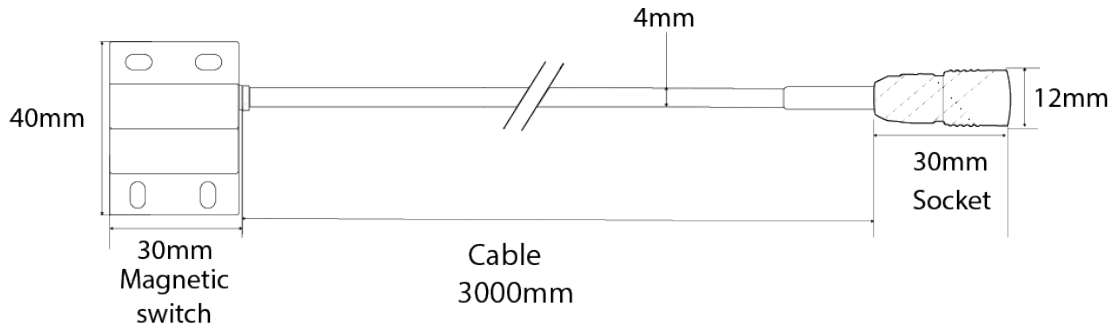
0-10M/S	Part codes	Specifications
	IN-AF010MS	
		Probe operating range 0-10m/s (0...2000ft/min)
		Analogue Output 0-5V
		Working range temperature -20°C to +60°C
		Storage temperature -30°C to +60°C
		Working range 0-10m/s (0...2000ft/min)
		Accuracy ±(0.3m/s / 60ft/ min +4% of measuring value)
		Cable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

0-20M/S	Part codes	Specifications
	IN-AF020MS	
		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

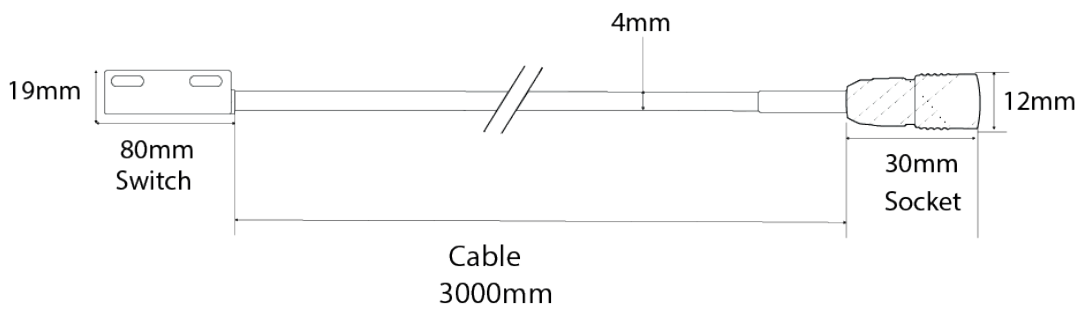


IN-DC Door Sensors

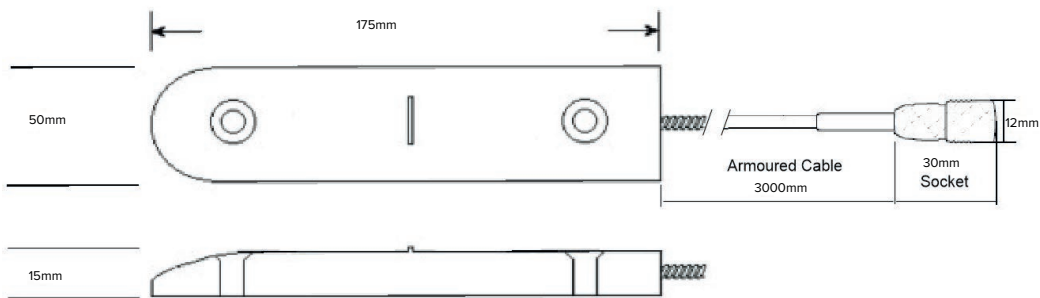
IN-DC001 (Light weight Door switch)	Part codes	Specifications
	IN-DC001	Cable length 3 metre cable



IN-DC002 (Medium duty Door switch with Hirose)	Part codes	Specifications
	IN-DC002	Cable length 3 metre cable



IN-DC003 (Industrial Door events sensor)	Part codes	Specifications
	IN-DC003	Cable length 3 metre cable

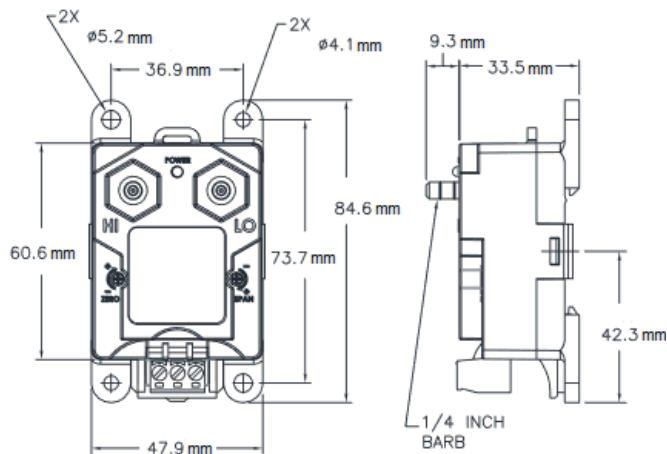


Extension cables	Part codes	Specifications
	IN-DSC-3.0	Temperature Operating Range -20°C to +70°C

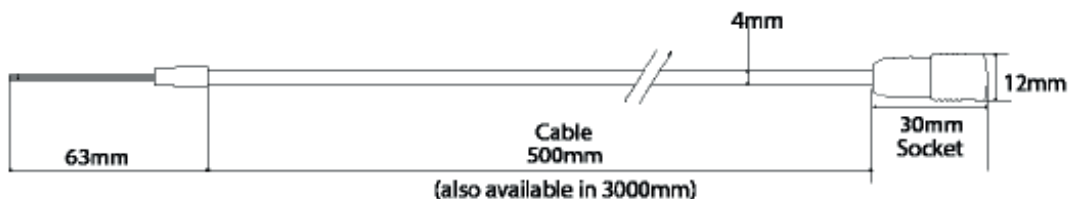


IN-DP-62

External	Part codes	Specifications																				
±0.25 IWC	J266	<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																					
Operating Temperature	0 to 160°F (-18 to 71°C)																					
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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
	X253	Cable length 3 metre cable



Additional Leads

IN-LSC1

IN-LSC1	Part codes	Specifications
5 metre cable	IN-LSC-0.5	Lead that can be used to attach linear sensors to the IceSpy range
3 metre cable	IN-LSC-3.0	

