

A group of swans swimming in water, with the text 'Water Level Sensors' overlaid. The swans are white with dark wings, and the water is blue with ripples. The background is a soft, out-of-focus landscape with hills and a bright sky.

# Water Level Sensors

## Section 10

# Water Level Sensors

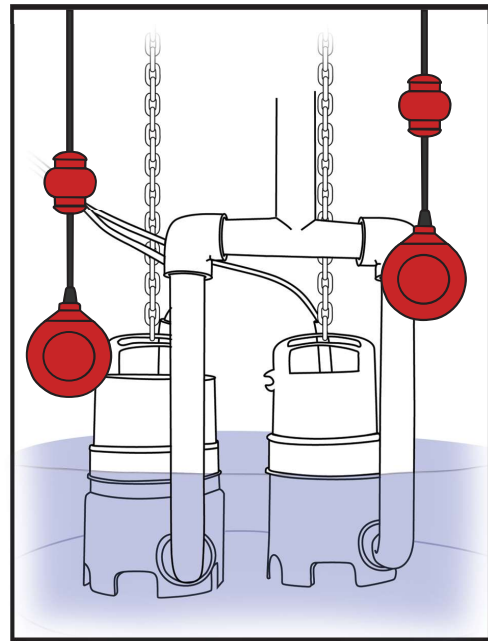
## Float Switches



The 9000 Series MATElec Float Switch, which utilises an innovative, yet simple 'fool proof' switching concept, has greatly enhanced Float Switch reliability. The positive microswitching eliminates the possibility of more than one circuit being in operation at any one time. The design innovation of the Switch is the 'sliding detent action' which obviates wave induced oscillation (common in mercury type switches) while maintaining consistency in switching level accuracy.

The smooth robust ABS switch housing on the 9006, 9008 and 9010 models, prevents adhesion of foreign materials.

Our extensive range of switches, cable types and cable lengths ensures we have the 'right' product to suit the application.



## Common Features & Specifications

Liquid Temperature:	Min 0°C (32°F) Max 60°C (140°F)
Liquid Density:	Min .65g/cm <sup>2</sup> Max 1.5g/cm <sup>2</sup>
Protection:	IP68 @ 20m (65ft)
Working Pressure:	.35MPa
Switching Speed:	600/min
Contact Life:	10 000 switches
Switching Angle:	20° (from horizontal)
Max Voltage:	750Vac
Cable Size:	ø 7mm/3 x .75mm <sup>2</sup> (9008 & 9010) or ø 6mm/3 x .5mm <sup>2</sup> (9006)
Housing Material:	ABS - Acrylonine Butadiene Styrene
Cable Material:	Oil / chemical resistant, submersible neoprene Rubber cable
Chemical Resistance:	Acid - Good Alkaline - Good Petro - Good

# Water Level Sensors

## The Range

### 9004 Series

Product Code	Cable Length	Cable Type	Contacts	Switch Rating
FSW-12409	6m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12410	10m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12411	15m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12412	20m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12413	30m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12414	40m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12415	50m	Neoprene Rubber	N/C & N/O	6Amp



### 9006 Series

Product Code	Cable Length	Cable Type	Contacts	Switch Rating
FSW-12529	6m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12530	10m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12531	15m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12532	20m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12533	30m	Neoprene Rubber	N/C & N/O	6Amp
FSW-12534	40m	Neoprene Rubber	N/C & N/O	6Amp



### 9010 Series

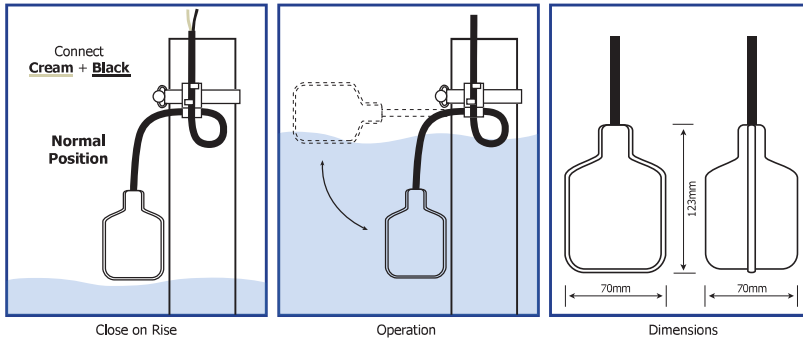
Product Code	Cable Length	Cable Type	Contacts	Switch Rating
FSW-12517	10m	Neoprene Rubber	N/C & N/O	10Amp
FSW-12518	15m	Neoprene Rubber	N/C & N/O	10Amp
FSW-12519	20m	Neoprene Rubber	N/C & N/O	10Amp
FSW-12520	30m	Neoprene Rubber	N/C & N/O	10Amp
FSW-12521	40m	Neoprene Rubber	N/C & N/O	10Amp



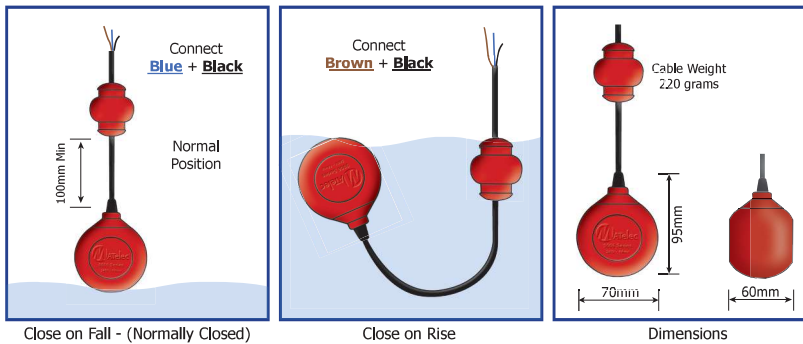
# Water Level Sensors

## Wiring Instructions

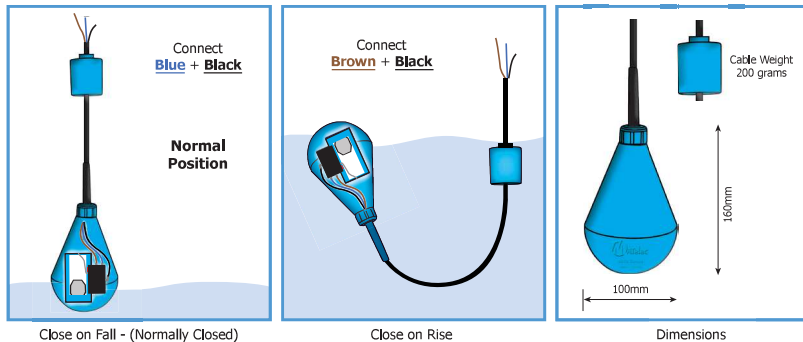
### 9004 Series - Wiring Instructions



### 9006 Series - Wiring Instructions



### 9010 Series - Wiring Instructions



# Water Level Sensors

## Magnetic Float Switch

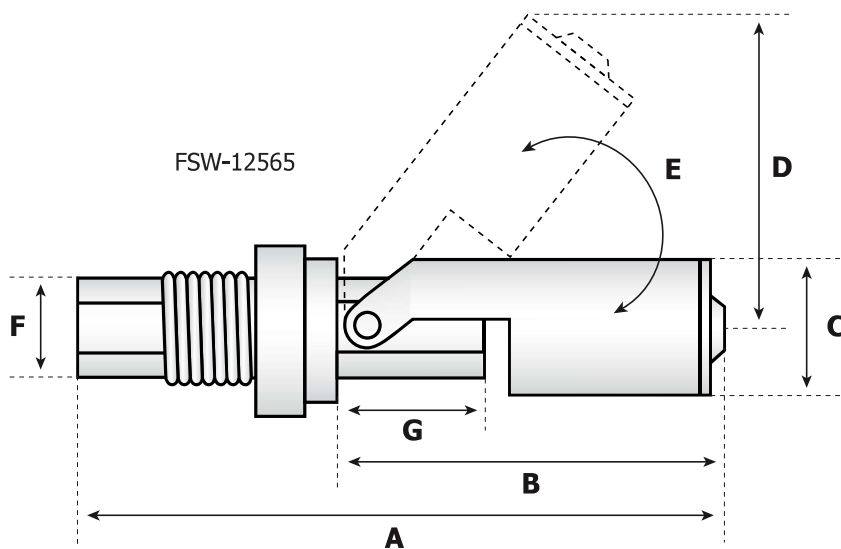
### FSW-12564 & FPC-12565

High quality housing suitable for most liquids eg: oils, mild chemicals. Fully immersible. Ideal for water tank systems such as rain or waste water management, activating boat bilge pumps etc.

Can be used to control pumps or electric valves when liquid levels change. Features a weatherproof membrane which mounts on the inside of the tank.

### Dimensions

	A	B	C	D	E	F	G	Cable Length
FSW-12565	88mm	56mm	18mm	40mm	45°	12mm	24mm	10m



## Common Features & Specifications

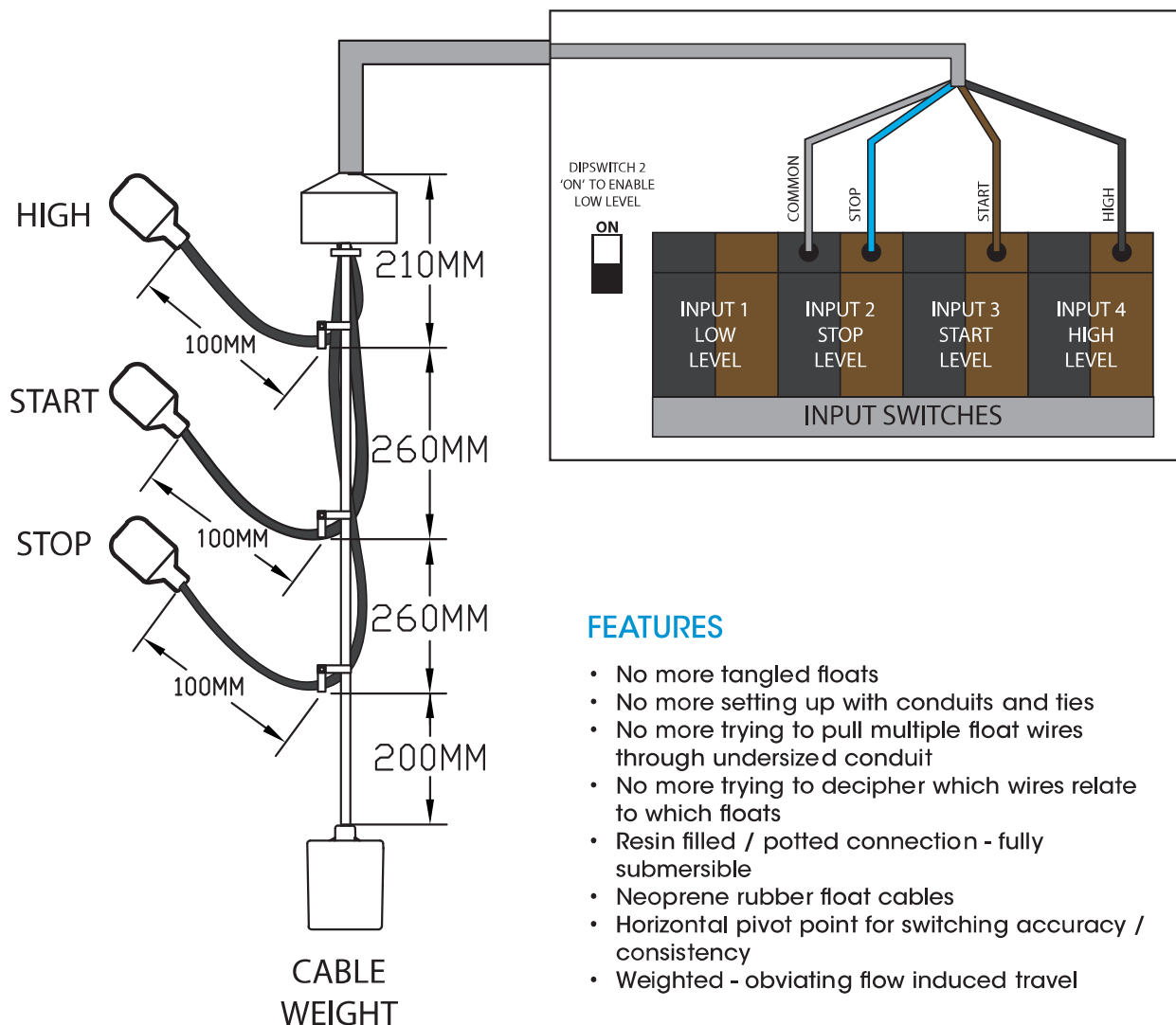
Switching Current:	0.5A DC
Contact Rating:	1.5A @ 200Vdc (max)
Contact Resistance:	100mΩ
Insulation Resistance:	10 <sup>12</sup> Ω
Magnetic Sensitivity:	20 to 50 AT
Operate Time:	0.8ms
Temperature Rating:	-30°C to 80°C

# Water Level Sensors

## Multi Level Float Switch

The Multi Float Tree is a unique combination of floats, configured in a way that minimises installation/setup time and overcomes the many issues associated with float switch installations.

### CONNECTION



### FEATURES

- No more tangled floats
- No more setting up with conduits and ties
- No more trying to pull multiple float wires through undersized conduit
- No more trying to decipher which wires relate to which floats
- Resin filled / potted connection - fully submersible
- Neoprene rubber float cables
- Horizontal pivot point for switching accuracy / consistency
- Weighted - obviating flow induced travel

Code	Description
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FSW-12545F	loat Tree - 3 Float 10m Cable
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FSW-12547F	loat Tree - 3 Float 20m Cable
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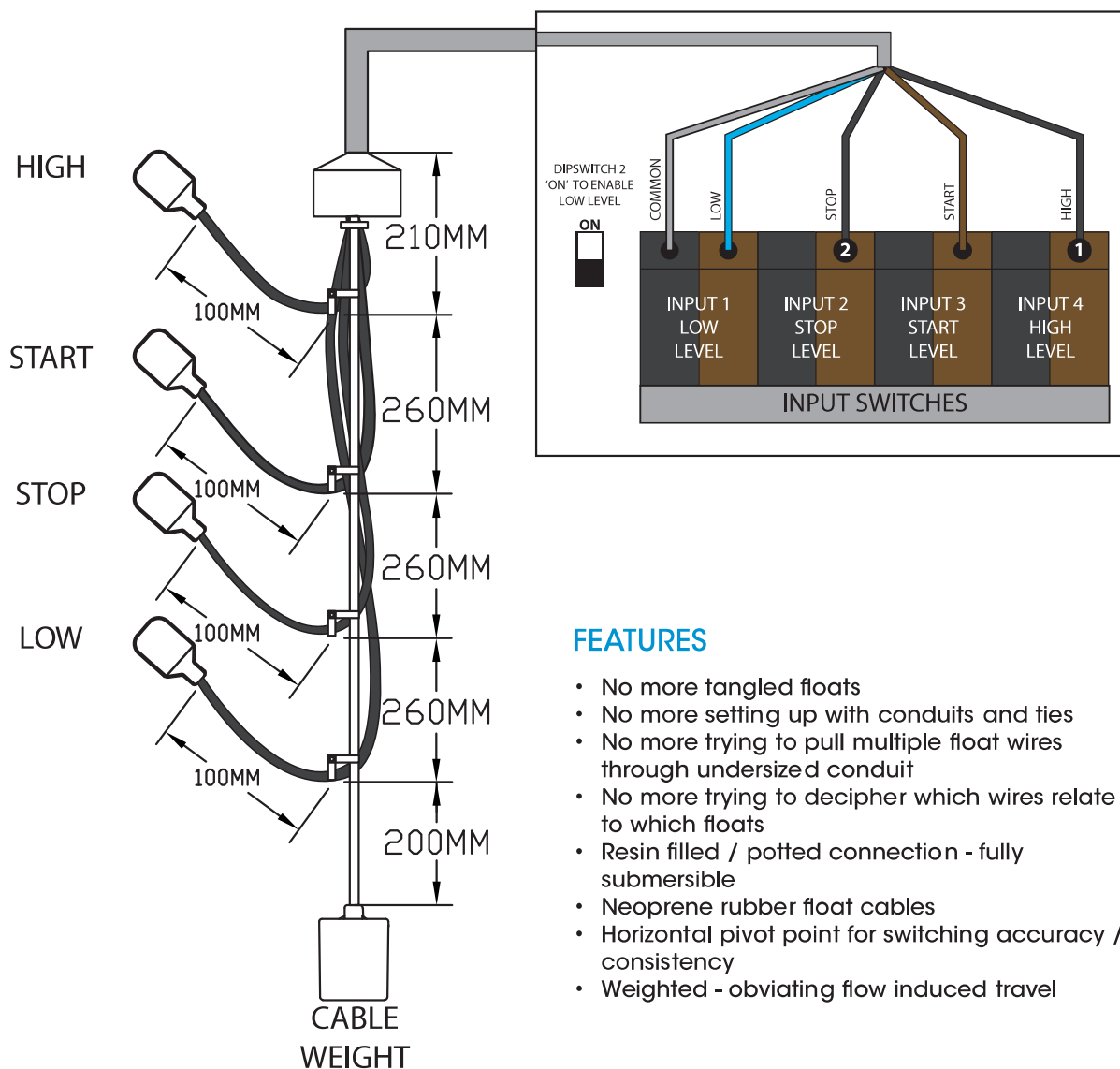
# Water Level Sensors

## Multi Level Float Switch



The Multi Float Tree is a unique combination of floats, configured in a way that minimises installation/setup time and overcomes the many issues associated with float switch installations.

### CONNECTION



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- No more tangled floats
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- Neoprene rubber float cables
- Horizontal pivot point for switching accuracy / consistency
- Weighted - obviating flow induced travel

Code	Description
FSW-12546F	loat Tree - 4 Float 10m Cable
FSW-12548F	loat Tree - 4 Float 20m Cable

### The Range

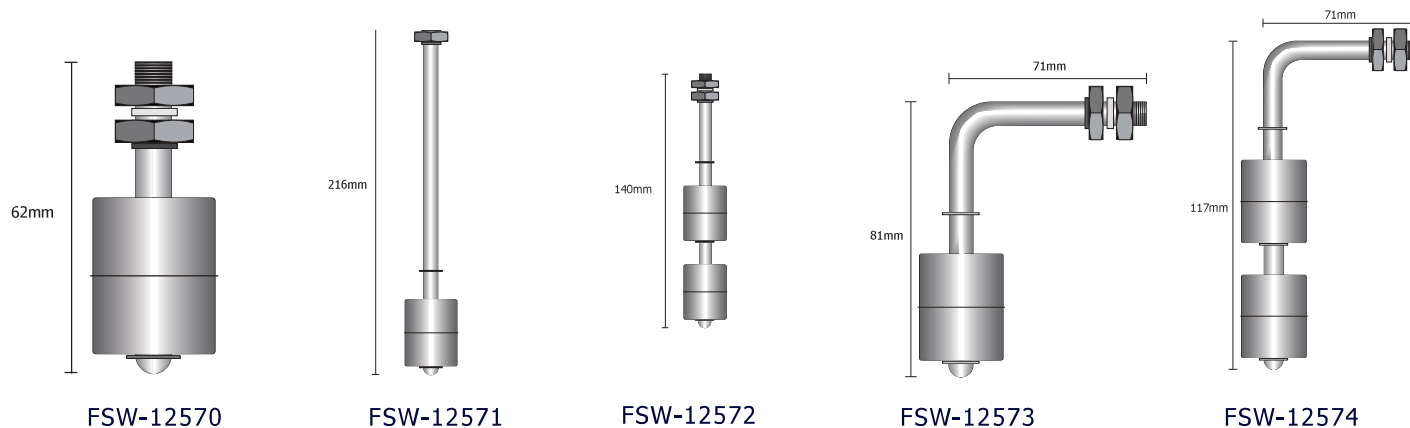
CODE	DESCRIPTION
FSW-12570	Short Stem Single Vertical Magnetic Float Switch
FSW-12571	Long Stem Single Vertical Magnetic Float Switch
FSW-12572	Long Stem Dual Vertical Magnetic Float Switch
FSW-12573	Side Mounted Single Magnetic Float Switch
FSW-12574	Side Mounted Dual Magnetic Float Switch

### Features

- Single & Dual Point Options
- Magnetic Reed Switch Technology
- High Reliability / Repeatability Standards
- Direct Interface to Controllers
- High Temperature Rating (to 125°C)
- High Pressure Rating (to 200 PSIG)
- Suitable for Corrosive Conditions

### Specifications

Max Contact Rating .....	50W
Max Switching Voltage .....	24V DC
Max Switching Current .....	1.5A
Max Breakdown Voltage .....	30V DC
Max Carry Current .....	3.0A
Max Contact Resistance .....	100mΩ
Temperature Rating .....	-30~+80°C
Float Material .....	304SS
Float Stem/Body Material .....	304SS
Float SG .....	0.70
Float Dimensions .....	28mm(W)x26mm(H)
Dual Float Differential .....	36mm



Commonly used in food processing, medical, heating, and cooling equipment



# Water Level Sensors

## Conductivity Probes



The MATElec Conductivity Probe is designed and manufactured with four preset, Stainless Steel Sensing Points. These would commonly be used as Common, Stop, Start and High Level.

The Probe would normally be set up in conjunction with a Conductivity Relay, which would interface with a Pump Control Circuit

The Probe can be used in a wide range of applications including: Potable, Grey, Black, Storm and Rain water.

Whilst the Probe has no serviceable parts, a periodic wipe down is recommended to maintain optimum performance.

### Features

316 Single Stainless Steel Sensing Points

### Specifications

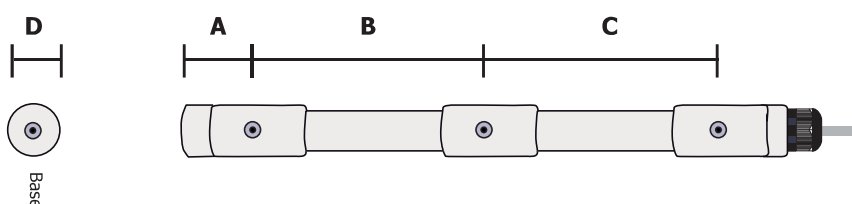
Mounting	Operating Temperature	Housing Material	Cable Type	Sensing Points
Directly into liquid (submersible)	0°C - 50°C	PVC	PVC	316 Stainless Steel

### The Range

CODE	SENSING POINTS	A (mm)	B (mm)	C (mm)	D (mm)	CABLE (m)
FPC-12530	4	55	50	50	30	10
FPC-12531	4	55	100	100	30	10
FPC-12532	4	55	150	150	30	10
FPC-12533	4	55	300	300	30	10



### Dimensions



# Water Level Sensors

## Conductivity Probes



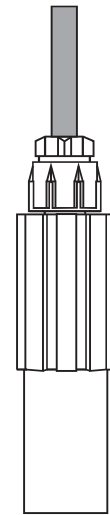
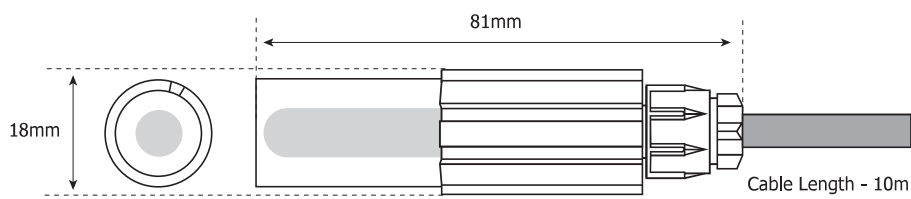
### FPC-12521 Specifications

Product Code	Weight	Mounting	Operating Temperature	Housing Material	Cable Type	Sensing Points
FPC-12521	45grams	Directly into liquid (submersible)	0°C - 75°C	ABS	Neoprene Rubber	304 Stainless Steel

### Features

Single Stainless Steel Sensing Points

### Dimensions



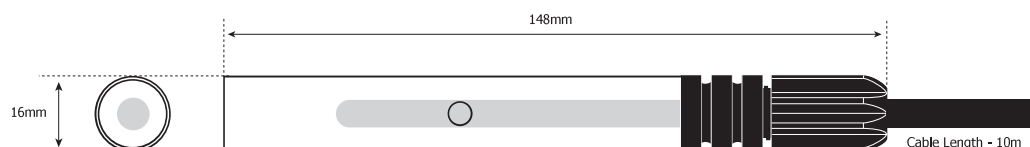
### FPC-12520 Specifications

Product Code	Weight	Mounting	Operating Temperature	Housing Material	Cable Type	Sensing Points
FPC-12520	100grams	Directly into liquid (submersible)	0°C - 75°C	304 Stainless Steel	Neoprene Rubber	304 Stainless Steel

### Features

Dual Stainless Steel Sensing Points

### Dimensions



### Functional Overview

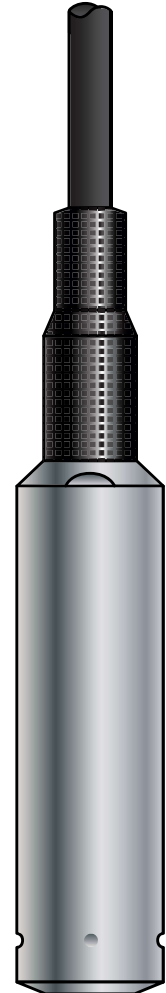
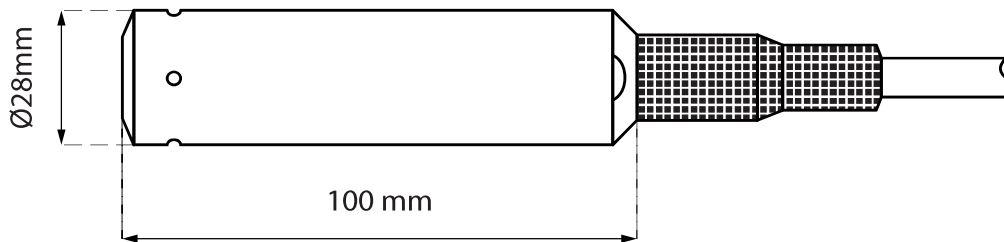
Thank you for purchasing the MATElec Hydrostatic Pressure Transducer. This unit is designed to be used for potable/raw/rain water applications.

(Not recommended for waste water. See model FPC-12575-E) The unit is suited to 4-20mA applications where precise level readings are required.

### Features

- Pressure Range: 0-0.4bar (0-4m)
- Small body diameter - 28mm
- Excellent repeatability and long term stability
- Excellent anti-interference ability
- Application: depth or level measurement in raw, rain, potable and ground water applications

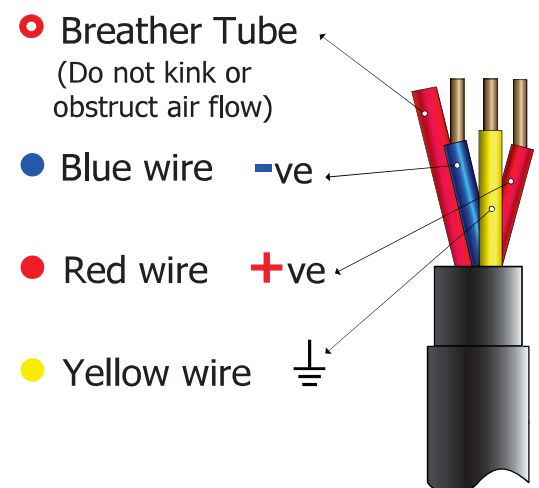
### Dimensions



### Specifications

<b>Pressure Range:</b>	0-0.4bar (0-4m)(0-40kPa)
<b>Overload Pressure:</b>	1.5 times full scale
<b>Accuracy:</b>	$\pm 1.0\%$ F.S
<b>Supply Voltage:</b>	12-30Vdc Loop powered
<b>Output Signals:</b>	4-20mA Analog
<b>Response Time:</b>	10ms
<b>Temperature Ranges:</b>	Compensated: $0^{\circ}\text{C}$ - $50^{\circ}\text{C}$ Media: $-10^{\circ}\text{C}$ - $70^{\circ}\text{C}$ Environment: $-30^{\circ}\text{C}$ - $85^{\circ}\text{C}$ Storage: $-40^{\circ}\text{C}$ - $125^{\circ}\text{C}$
<b>Temperature Compensation:</b>	$0.02\%$ F.S./ $^{\circ}\text{C}$
<b>Electrical Connection:</b>	3 wires, Breather Tube
<b>Protection Rating :</b>	IP68
<b>Housing Material:</b>	316 Stainless Steel
<b>Operating Life:</b>	$> 1 \times 10^8$ Pressure Cycles
<b>Cable Details:</b>	Length: 24m Diameter: $\varnothing 7.5\text{mm}$ OD Material: PUR Polyurethane

### Connection Detail



# Water Level Sensors

## Hydrostatic Pressure Transducer



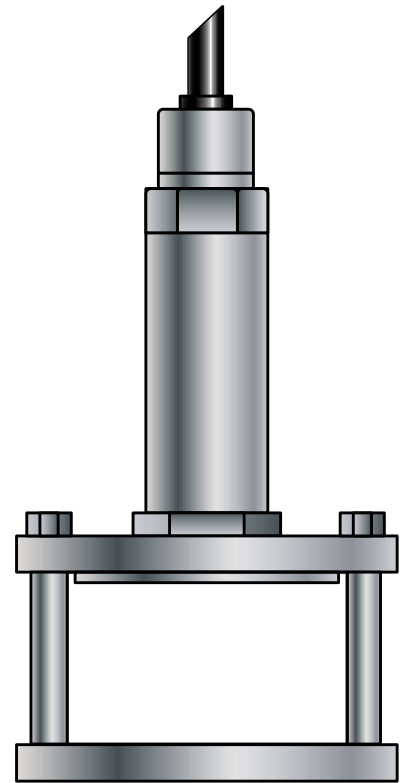
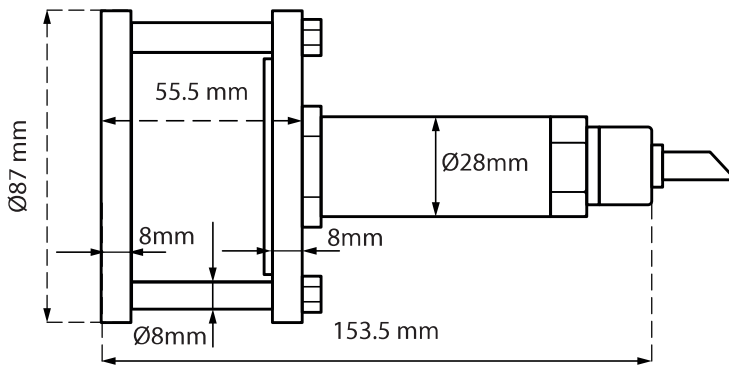
### FPC-12575-E Functional Overview

Thank you for purchasing the MATElec Hydrostatic Pressure Transducer. This unit is designed to be used for potable/raw/rain/sewage and waste water applications. The unit is suited to 4-20mA applications where precise level readings are required.

### Features

- Pressure Range: 0-0.4bar (0-4m)
- Excellent repeatability and long term stability
- Excellent anti-interference ability
- Application: depth or level measurement in raw, rain, potable ground, sewage and waste water applications

### Dimensions



### Specifications

<b>Pressure Range:</b>	0-0.4bar (0-4m)(0-40kPa)
<b>Overload Pressure:</b>	1.5 times full scale
<b>Accuracy:</b>	±1.0% FS
<b>Supply Voltage:</b>	12-30Vdc Loop powered
<b>Output Signals:</b>	4-20mA Analog
<b>Response Time:</b>	10ms
<b>Temperature Ranges:</b>	Compensated: 0°C-50°C
M	edia: -10°C-70°C
	Environment: -30°C-85°C
	Storage: -40°C-125°C
<b>Temperature Compensation:</b>	0.02%FS./°C
<b>Electrical Connection:</b>	3 wires, Breather Tub
<b>Protection Rating :</b>	IP68
<b>Housing Material:</b>	316 Stainless Steel
<b>Operating Life:</b>	>1x10 <sup>8</sup> Pressure Cycles
<b>Cable Details:</b>	Length: 24m
D	iameter: Ø7.5mm OD
	Material: PUR Polyurethane

### Connection Detail

