



Turtle Tough SMART Sensor Connectivity






Interfacing Hardware, Plugs and Lead Connectors

Turtle Tough's quick connector plug is a feature on all our SMART Sensors. This NEMA6P connector is fully submersible, is non-conductive plastic, low noise and small enough that it can easily fit through common conduit sizes. The connector system provides several advantages over bare tinned leads including:

- **Reduces the chances of sensors being wired incorrectly**
Factory supplied components such as transmitters, junction boxes, field communicators, windows PC interface etc are all pre-wired and configured. This guarantees that you can't connect them incorrectly which can result in sensor damage.
- **Allows Plug n Play Connectivity for instant hot-swapping of sensors**
Smart Sensors allow the sensor to be calibrated in the lab or workshop as the calibration data is stored locally on the sensor rather than in the transmitter. Accordingly in service sensors can simply be swapped over for a freshly calibrated one. This provides a vastly superior maintenance program compared to traditional in-situ servicing, reducing both maintenance time and improving sensor life ([See Hot Swapping](#)).
- **Provides seamless connectivity with all DSS products**
Instant connectivity with communicators and calibration devices that allows powerful and convenient maintenance, configuration and troubleshooting functions.

Connecting and Interface Components

All Turtle Tough DSS transmitters and controllers are fitted with female panel mount plugs that directly accept the male sensor plug. There will be times however when you want to extend cable runs or integrate sensors directly with your hardware. Turtle Tough makes a variety of hardware to accommodate a wide range of installation options:

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|  | <p>Female Panel Mount Connectors</p> <p>These pre-soldered and wired plugs provide a tinned lead connection. Ideal for making your junction box or panel mount interface.</p> |
|  | <p>Interface Cables</p> <p>This industrial-grade cable has a female plug at one end and tinned leads on the other. This is designed for connecting directly to your hardware via the tinned leads and provides a flexible coupling from your input device. Interface cables are available in 1.5m, 3m, 6m and 12 meter lengths.</p> |
|  | <p>Extension Leads</p> <p>This industrial-grade cable has a female plug at one end and a male at the other. This is designed for extending the sensor cable length directly to a DSS transmitter or controller. Extension leads are available in 3m, 6m, 12m and 24m lengths.</p> |
|  | <p>Junction Boxes</p> <p>This IP65 enclosure is fitted with a female panel mount plug, connected to an internal terminal strip. On the outgoing side is a cable gland allowing you to connect a signal cable of your chosen length back to your input hardware. DSS sensors support a total cable run of up to 1000m, so junction boxes are ideal when you have long cable runs.</p> |
|  | <p>Powered Junction Boxes</p> <p>This IP65 enclosure is fitted with a female panel mount plug, internal terminal strip and cable gland. Additionally, it is fitted with a power converting for providing galvanically isolated power for sensors. Both AC/DC and DC/DC power supplies are available and outlined in our field implementation guide.</p> |

Notes

- It is important to note that all the above cables and connectors are made to a very high industrial grade and have been professionally fabricated for high reliability for their intended application. Failure to have quality connections and interfaces can lead to a variety of problems including sensor dropouts and errors on the input side.
- The connector type is a MICRO-CON-X and readily available from commercial suppliers. If you wish to fabricate your connectors and interface cables you are welcome to do so. However please keep in mind that dropouts or connectivity issues cannot be supported if you are using your cables and you should always have at least one genuine Turtle Tough interface on hand for troubleshooting or testing. Please contact Turtle Tough for specifications.



Please note that integral sensor cables, connectors and plugs must **NOT** be cut, removed or modified in any way. Sensors contain sensitive internal electronics and our cables and connectors are designed to protect the integrity of these components. Any modification or alteration to cables and connectors can compromise their integrity and will void the warranty. Always use factory-approved/manufactured cables and connectors. Additionally, the cable contains a unique identifier laminated to the cable end and this must not be removed or it will also void the warranty.