



# The DSS HANDHELD FIELD COMMUNICATOR is a complete sensor management tool for all sensors with Direct Smart Sensor Technology

## DSS Handheld Field Communicator

### Features

- Interfaces with Turtle Tough pH/ORP, Dissolved Oxygen, Conductivity sensors with DSS technology
- Calibrate and configure sensors at any location
- Access real-time data directly from sensor
- Offset calibrations available
- Quick disconnect cables
- Lightweight and portable
- Input data ranges and max resolution
- 3 Calibration points for optimal accuracy at any pH
- Automatic Temperature Compensation for pH measurement





## DSS Handheld Field Communicator



DSS Handheld Field Communicator

### Calibrate and configure at any location retaining all values

Portable 9V battery powered communicator to calibrate and configure DSS smart digital sensors with MODBUS RTU output at any location desired while still retaining all values stored including last calibration performed. Can perform in-situ offset calibrations and spot measurement in the field.

### Intelligent Software

The intelligent software on DSS communicator auto-detects sensor type connected and loads the appropriate options such that one communicator can interface all possible types of DSS smart digital MODBUS sensors.

### Access to real-time data in no time

- Real-time data acquisition of measured process parameter
- Temperature
- All calibrations and diagnostic details about the installed DSS smart digital sensor for intelligent remote management and troubleshooting capabilities

### Quick connect cables to 1,000 meters

- NEMA 6P & IP67 rated waterproof
- DSS4M & DSS4F quick connectors for rugged field use

### Input data ranges and maximum resolution measurements

- pH range of -2 to +16 with 0.001pH resolution
- ORP range of  $\pm 1000$  or  $\pm 2000$ mV; 0.1mV resolution

### Dissolved Oxygen range

- 0.00-150.00 ppm (0.0-1,500.0%); 0.01mV resolution

### Raw conductivity input ranges for K=0.01/cm to =20.0/cm cells:

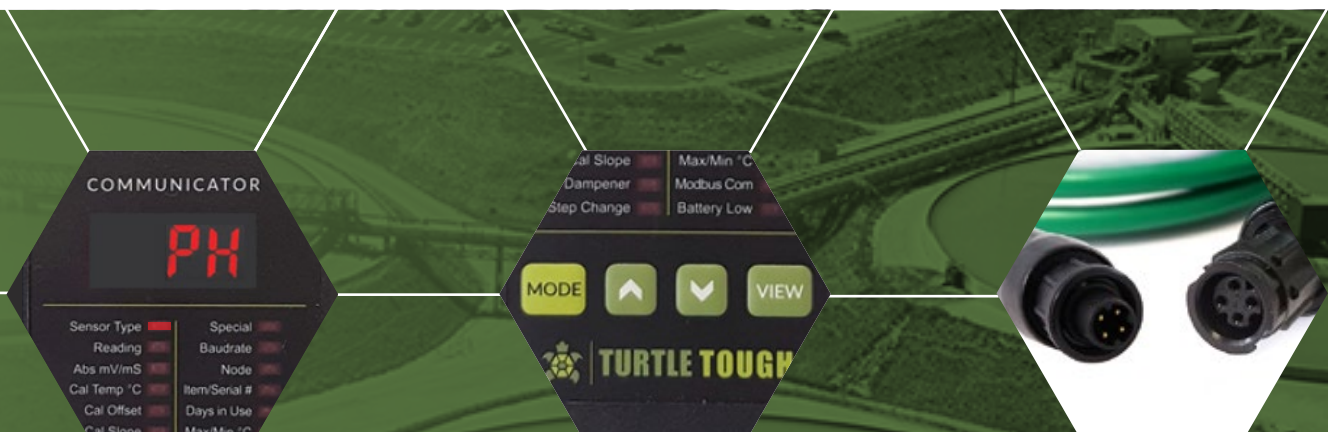
- Standard Range 0-400,000  $\mu$ S/cm
- High Range 0-4,000,000  $\mu$ S/cm
- Ultralow Range 0-4,000  $\mu$ S/cm
- Salinity 0-50.000 PSU, TDS 0-100,000 ppm, Resistivity 0-20.000 M $\Omega$

### Temperature range

- Temperature range of -40 to +210°C with 0.1°C resolution

### Optimal accuracy calibration

- Perform 1-point offset anywhere in the range. Slope calibrations are automatically assigned for acidic or alkaline pH ranges yielding a 3-point point overall calibration scheme with a dual slope for optimal accuracy at any pH
- Dissolved Oxygen sensor calibration is fully automated dry in air (no solutions needed)
- Perform slope offset calibration dry in air for true zero point
- Perform slope calibration anywhere in range using either a known standard or else in-situ reference against offline grab sample analysis
- Automatic Temperature Compensation is user adjustable from 0.00 to 9.99 % per °C as most suitable for the specific process chemistry



## Benefits of Turtle Tough Sensors with DSS technology

- **Integral RS-485 MODBUS RTU interfaces all-modern PLC controllers and data acquisition systems.**
- **The communicator provides easy management of field installations** without the cost of a mating transmitter. This is ideal for locations where a local display is not necessary or possible due to installation limitations.
- **Intelligent management of sensor calibrations and service life-cycle** for efficient commissioning and maintenance. All aspects of installation are completely portable from the shop to the field site location.
- **Days in use value is stamped for calibrations that are performed.** This allows for predictive scheduling of maintenance in the PLC to ensure the accurate measurement in the field based upon user defined criteria.
- **All digital sensors ensure reliable operation** even in noisy process environments unlike analog sensors.
- **No degradation in digital output** even with very long cable runs up to max of 1,000 meters
- **Bridging connections and modifying installations easily** without loss of signal quality with **NEMA 6P and IP67 rated quick disconnect waterproof and corrosion-resistant dual snap connector.** Simple plug and play operation for intelligent maintenance planning and smart management of sensor installations and stocking.
- **Low-cost snap digital extension cables** facilitate consolidation of very many DSS sensors outputs into one panel enclosure where very many remote field installations can all be conveniently all viewed at once.
- **The DSS handheld communicator software identifies type of sensor connected** and autoloads correct features. There exists no possibility of accidentally using the wrong set of options or settings.
- **All extension cables for DSS sensors are inter-compatible.** Uniform extension cables minimize stocking. Separate field installation guide details available options to commission and exchange sensors.





### 3-DIGIT DISPLAY

### 16 LEDs

to show readings and analytic data as well as to calibrate & configure sensors.

### UP' OR 'DOWN' KEY

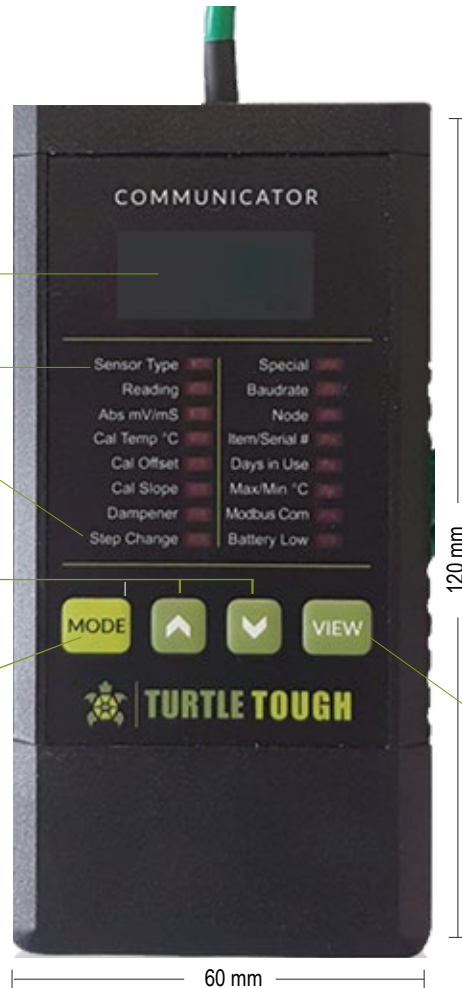
To scroll available options and adjust values.

### 'MODE' KEY

Used to toggle and navigate to each LED.  
Make selections and save entries

### 'VIEW' KEY

Provides additional information for the given LED mode.



### DSS CONNECTIVITY

The sensor can be powered down or moved without loss of calibration resulting in a true plug and play low maintenance installation.



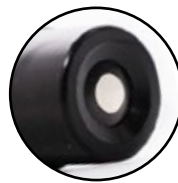
### Compatible sensors:

- **TT-pH-DSS sensor**  
pH/ORP, Sensors with DSS Technology (-DSS)
- **TT-DO-DSS sensor**  
Dissolved Oxygen sensors with DSS Technology (-DSS)
- **TT-CON-DSS sensor**  
Conductivity sensors with DSS Technology (-DSS)

The DSS Handheld Field communicator is specifically designed for field calibration and configuration of DSS Turtle Tough sensors



pH/ORP  
DSS Sensor



Dissolved Oxygen  
DSS Sensor



Conductivity  
DSS Sensor





# Specifications

## DSS Handheld Field Communicator

### General Specifications

Description	DSS Handheld Field Communicator
Part Number	DSS-HFC
Interface	All Turtle Tough DSS pH/ORP, Dissolved Oxygen, Conductivity sensors
Sensor technology compatibility	DSS technology (-DSS)
Housing	ABS (Acrylonitrile Butadiene Styrene)
Mounting	Handheld
IP Class	Housing IP40
Connector	DSS4PF Female Quick Connector Plug (to suit the DSS4M male quick connector plug)
Temperature	Usage -15 to +50°C (Storage -35 to +75°C)
Weight	130 Grams with a battery 100 Grams without a battery
Dimensions	D 26mm x W 60mm x H 120mm (1.0" x 2.4" x 4.7")

### Electrical Specifications

Power Supply	9V Alkaline Battery
Consumption	~45 mA with an Energised DSS Sensor
Battery Life	~6 hrs Alkaline or ~12 hrs Lithium. Auto shutdown after 25 seconds* without communication
Baud Rate	9,600 or 19,200 Kpbs
CE Mark	EN61326A