

<http://www.EmbeddedDataSystems.com>

FEATURES

- Submersible, Rugged, Wide Temperature Range Probe suitable for use in harsh environments.
- All exposed surfaces are either stainless steel or Teflon based.
- Available with Maxim Integrated DS18B20 sensor.
- Uses 1-Wire communication protocol.
- Compatible with all EDS and Dallas Semiconductor 1-Wire bus masters.
- Chemical resistant and waterproof steel probe and cable.
- Custom Length 304 Stainless Steel Probe from 1.5 to 12 inches.
- Custom cable available (1 to 100 feet).
- No external power required, or can be optionally powered for fast (non-parasite) operation.
- Automatically configures the V_{DD} pin to the correct state
- Automatic unique device addressing.
- Applications include thermostatic controls, industrial systems, consumer products, thermometers, or any thermally sensitive system.



DESCRIPTION

The OW-TEMP-B3-12RA temperature probe is designed for wide temperature range applications requiring excellent chemical resistant properties and sensor submersion.

All exposed parts of the rugged temperature probe are manufactured of either stainless steel, or TPE based products, resulting in excellent chemical resistance properties to acids, alkalis, ketones, esters, aliphatics, aromatics, and outdoor exposure. The probe is constructed of 304 Stainless Steel making it both durable and water resistant to 60 PSI. The cable used on this sensor uses TPE based materials for both the outer jacket and inner conductor insulation. This cable is particularly suited for harsh environments, and offers excellent resistance to high and low temperatures, oil, gasoline, and sunlight exposure. This results in a robust sensor that can be submerged beyond the top of the steel probe.

The rugged temperature probe is comes with a DS18B20 1-Wire temperature sensor embedded into the probe. In manufacturing the temperature probe a special process is used that insures the internal sensor is thermally coupled to the steel tube wall; this helps insure rapid thermal response to changing conditions.

Our rugged temperature probe is supplied standard with a RJ12 plug (commonly called RJ11) which makes the installation process much easier. The RJ12 pin outs are as follows:

- Pin 3: 1-Wire Signal, *Blue*
- Pin 4: Common (GND), *White*
- Pin 6: Ext. Power (V_{DD}), *Orange*, (connection not required)

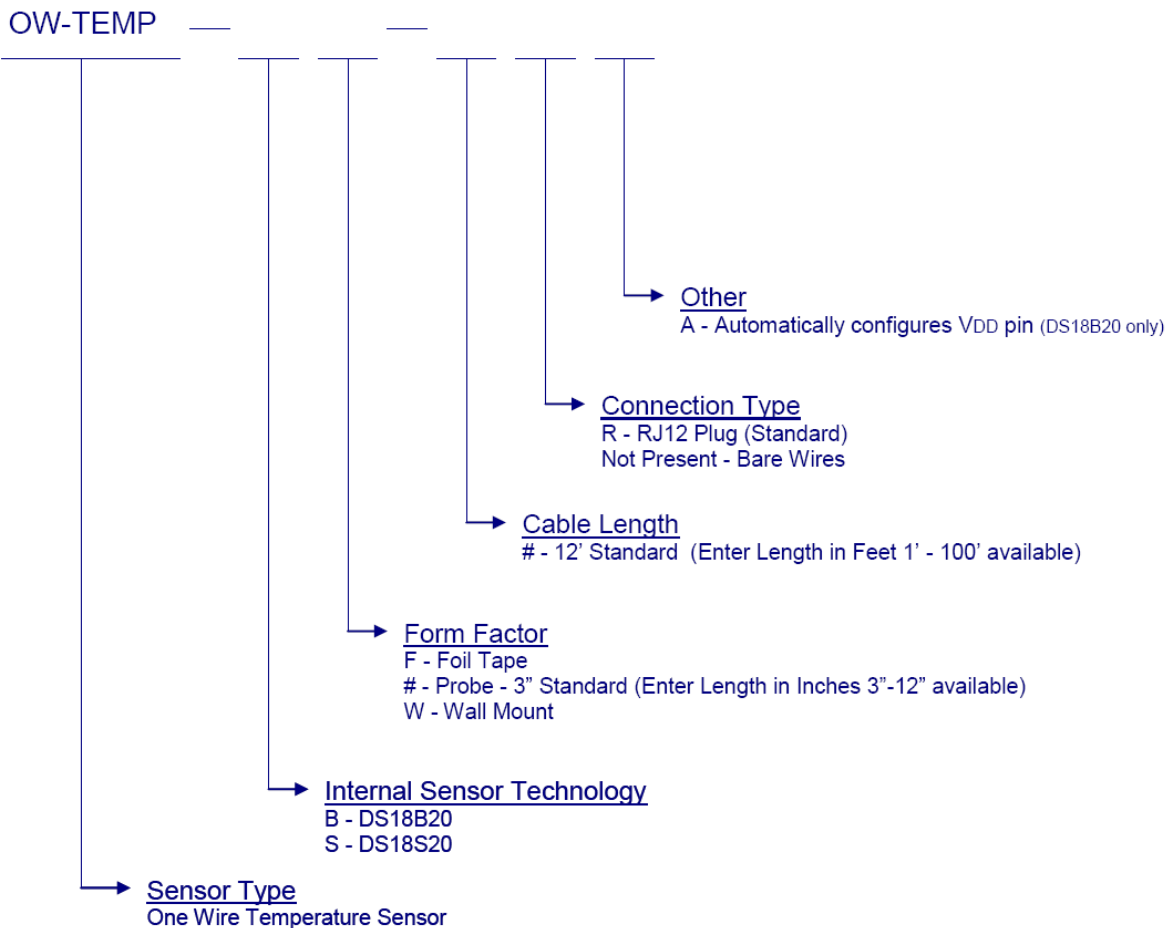
The rugged temperature probes are directly compatible with all Embedded Data Systems and Dallas 1-Wire bus masters, our OneSix server software, and the freely available TMEX drivers. For complete documentation on the embedded DS18B20 sensor, please refer to manufacturer's spec sheets available at <http://datasheets.maxim-ic.com/en/ds/DS18B20.pdf>.

CUSTOM CONFIGURATIONS

Our standard (stocked) RTP sensor has a 3 inch long steel probe and 12 foot long CAT 5 cable. With minimum orders we can manufacture the temperature probe to a variety of specifications, including length of the steel probe, length of cable, with / without RJ12 plugs, etc. Please contact us for a custom quote.

PART NUMBERS

Please use the following chart to determine the appropriate part number for ordering:



Part # Examples:

- OW-TEMP-B3-12RA Rugged probe sensor: DS18B20, 3" probe, 12' cable, RJ12 plug, auto V_{DD} configuration
- OW-TEMP-B12-12RA Rugged probe sensor: DS18B20, 12" probe, 12' cable, RJ12 plug, auto V_{DD} configuration
- OW-TEMP-B3-12A Rugged probe sensor: DS18B20, 3" probe, 12' cable, auto V_{DD} configuration

SPECIFICATIONS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS
Temperature Range	TR	-55	-	125	Degrees C
Accuracy (-10 to +85 Deg. C)	ACM	-0.5	-	+0.5	Degrees C
Accuracy (-55 to +125 Deg. C)	ACT	-2	-	+2	Degrees C
Resolution (DS18B20)		9		12	Bits
Supply Voltage	V _{DD}	3.0	5.0	5.5	Volts
Active Current	I _{dd}		1000	1500	MicroAmp
Standby Current	I _q		100	150	NanoAmp
Dimensions (body diameter)	BDia	.165	.170	.175	In.
Dimensions (tip diameter)	TDia	.217	.219	.221	In.