

MICROCOR[®] WIRELESS TRANSMITTER

M-310 / M-320

The Microcor ER Wireless Transmitter (M-310 / M-320) is based on Cosasco's Microcor[®] high resolution corrosion measurement technology, the industry's most widely used and only technology capable of operating in any process environment. The M-310 / M-320 uses high resolution metal loss measurement providing 18 bit resolution, Measures Corrosion and Erosion rate, and is rated for operation in hazardous locations (Class I, Zone 1). The allowable operating range of from -40°C to 70°C is proven every day by existing systems reliably working in the harsh environments of the frigid arctic and deserts of the Middle East.

The M-310 / M-320 power module has a typical life of 3 years and is hazardous location certified to allow change out in the hazardous area. Typical wireless range is 1000 ft. (300 m) or 1500 ft (450 m) in optimal conditions with a clear line of sight from transmitter to transmitter or transmitter to gateway/management station, with multiple "hops" permissible from any transmitter back to its gateway/management station.

Other wireless communication options may be permissible. For details, contact Cosasco.

The M-310 / M-320 is available with the option of WirelessHART™ 7 or ISA100 Wireless communications protocol for seamless integration with Emerson, Yokogawa, and numerous other wireless process systems. For outline of a Cosasco Wireless System, and details of each product, see Cosasco Wireless System ISA100 and Cosasco Wireless System WirelessHART7 data sheets.



Specification	Communication Option	
	WirelessHART 7	ISA100 Wireless
Wireless Range (clear line of sight)	1000 ft (300 m)	1500 ft (450 m)
Transmitter Battery Life	3 Years	3 Years
Wireless Devices Supported	Up to 100	Up to 500
Network Type	Inherently Mesh	Mesh or Star Topology
System Integration	Emerson, Endress & Hauser, Siemens, and ABB Wireless Networks	Yokogawa, and other ISA100 Wireless Networks
Certifications	Hazardous Area Locations (Class I, Zone 1)	Hazardous Area Locations (Class I, Zone 1)

Operating Specifications

Resolution

18 bit (1 part in 262,144)
0.000019mils (0.5nm) for T10/F10 element probes
0.000038mils (1nm) for T20/F20 element probes

Probe element resistance range

1 to 50 milliohms

Stability of Reading

Typically $\pm 0.01\%$ of span on reference probe

Accuracy

Less than 0.001 mil (dependent on probe)

Real World Speed of Response

1 mpy = 8 hrs 20 mins
2 mpy = 4 hrs 10 mins
5 mpy = 1 hr 40 mins
7 mpy = 1 hr 12 mins
10 mpy = 50 mins

Data Transmit Rate

10 to 60 minutes
(15 minutes for 3 year battery life)

Communication

2.4 GHz IEEE 802.15.4.

- WirelessHART 7 Protocol (MWT-3905-0-0)
- ISA100 Wireless Protocol (MWT-3905-0-2)

Ambient Temperature Range

-40C to +70C (-40F to +158F)

Antenna

Integrated Omni-directional Antenna
Impedance: 50 Ω
Gain: 2dBi
Maximum SWR: 2:1
Maximum radio power output: 10 mW

Physical Specifications

Enclosure

Rating: IP66
Materials: Housing: 6061-T6 ALUM
316 Stainless Steel
Paint: Polyester Enamel over Epoxy
Primer

Power supply

7.2 V Lithium Power Module
Power Module life: 3 years (Typical)
Hazardous Area Location Certified.
(Replacement okay in hazardous
locations).

Weight

Aluminum Housing: 7.5 lbs. (3.4 kg) with Lithium
Power Module Installed
Stainless Steel
Housing: 15.3 lbs. (6.9 kg) with Lithium
Power Module Installed

Dimensions: See below

Optional Remote Mounting Kit for Pole or Wall Mounting

Metal Bracket (supplied) for direct wall mount and adjustable
U-Bolt mounting for 2" pipe size vertical or horizontal pole
mounting

Probe Mounting

Directly to probe via Probe Adapter (PN 745092, 745093,
745114). For remote locations probe can be directly connected
to M-310 / M-320 via a cable, P/N 748497. See chart below for
options

Product Certifications

Telecommunication Compliance

All wireless devices require certification to ensure that they adhere to regulations regarding the use of the RF spectrum. Nearly every country requires this type of product certification. Cosasco is working with governmental agencies around the world to supply fully compliant products and remove the risk of violating country directives or laws governing wireless device usage. The M-310 / M-320 is currently certified with the governmental agencies of Australia, Canada, European Union, and United States. Additional country approvals are in currently in progress and will be posted as soon as certification is verified. Please contact Cosasco or visit our website for the latest country certifications.

FCC and Industry Canada (IC)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions. This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation. This device must be installed to ensure a minimum antenna separation distance of 20 cm from all persons.

M-310 / M-320

ATEX Certification

Ex d [ib] Class I, Zone 1, IIC, T4, Ta = -40C to +70C

North American Certifications

FM AEx d [ib] Class I, Zone 1, IIC, T4, Ta = -40C to +70C

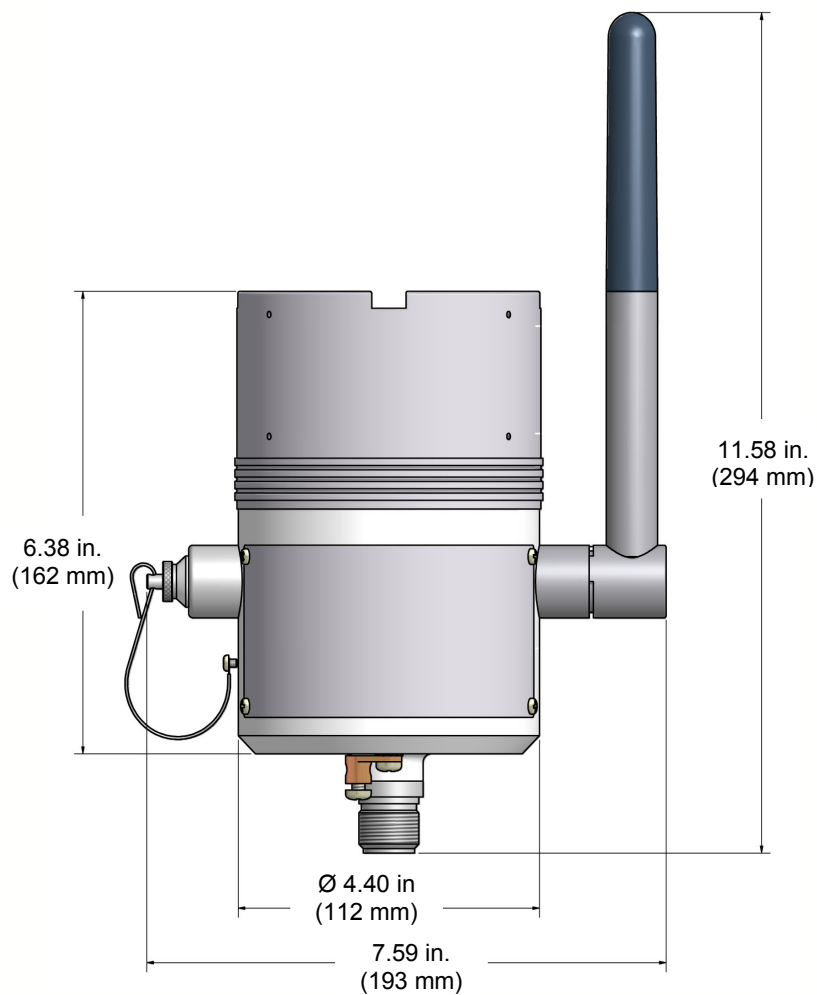
FMc Ex d [ib] Class I, Zone 1, IIC, T4, Ta = -40C to +70C

IEC Ex Certification

IEC Ex d [ib], Class I, Zone 1, IIC, T4, Ta = -40C to +70C

All certifications based on IP66 Enclosure and for use only with Power Module P/N 748400

Dimensions



Ordering Information for ISA100 Wireless



Microcor ER Wireless Transmitter-ISA100 Wireless

Model	Description	
MWT-3905	Microcor ER Wireless Transmitter with ISA100 Radio	
	Code	Housing
	0	Aluminum
	1	Stainless Steel 316 SS
		Code Radio
		2 2.4 GHz ISA100 Wireless - Integral Antenna
MWT-3905	— 0 —	2 ← Typical Order Number

System Requirements

Field Wireless Management Station

See R-Y410 Field Wireless Management Station Data Sheet.

Field Wireless Access Point

See R-Y510 Field Wireless Access Point Data Sheet.

Microcor® ER Probes

See Microcor® ER Probes Data Sheet, Bulletin No. 150 for ordering information.

Probe Adapters

Model M2000 & M3000 series probes

P/N 745092

Model M4000 & S4000 series probes

P/N 745093 (For permanent connection at 2500 PSI max)

P/N 745093H (For permanent connection at 2500 PSI max)

P/N 745114 (For permanent connection at 10,000 PSI max when used with pressure retaining covers P/N 740095)

P/N 745114H (For permanent connection at 10,000 PSI max when used with pressure retaining covers P/N 740095)

Cables (Transmitter to Probe Cable with Transmitter Mounting Bracket)

Part No.	Description	
748497	M-320 Remote Mounting Kit	
	Code	Cable Type
	0 ²	Cable Assembly Only (Requires Probes Adapter)
	1	Retractable (unarmored)
	2	Retractable (armored)
	3	Retrievable (armored) 2500 PSI
	4	Retrievable (unarmored) 2500 PSI
	5	Retrievable (armored) 10,000 PSI
	6	Retrievable (unarmored) 10,000 PSI
		Code Cable Length
	L	Length in Feet (15 ft max)
748497	— 1 —	5 ← Typical Order Number

Accessories

Cosasco Wireless Extender

Model	Description	
MWT-3905-WE	Cosasco Wireless Extender (includes mounting bracket)	
	Code	Radio
	0	Aluminum
	1	Stainless Steel 316 SS
		Code Housing
		2 2.4 GHz ISA100 Wireless - Integral Antenna
MWT-3905-WE	— 0 —	0 ← Typical Order Number

7.2 V Lithium Power Module P/N 748400

M-320 Installation Kit -
ISA100 Wireless

P/N 702406-MWT-ISA (includes Wireless Field Tool for transmitter configuration)

Ordering Information for WirelessHART 7

Microcor ER Wireless Transmitter-WirelessHART7

Model	Description	
MWT-3905	Code	Housing
	0	Aluminum
	1	Stainless Steel 316 SS
		Code Radio
		0 2.4 GHz Wireless HART7 - Integral Antenna
MWT-3905	— 0 —	0 ← Typical Order Number

System Requirements

Wireless Gateways

See R-1420 or R-1410 Data Sheets.

Checkmate DL-W Wireless Configurator

P/N Checkmate DL-W

Microcor® ER Probes

See Microcor® ER Probes Data Sheet, Bulletin No. 150 for ordering information.

Microcor® Erosion Probes

See Microcor Erosion Probes Data Sheet, Bulletin No. 700 for ordering information.

Probe Adapters

Model M2000 & M3000 series probes

P/N 745092

Model M4000 & S4000 series probes

P/N 745093 (For permanent connection at 2500 PSI max)

P/N 745093H (For permanent connection at 2500 PSI max)

P/N 745114 (For permanent connection at 10,000 PSI max
when used with pressure retaining covers P/N 740095)

P/N 74114H (For permanent connection at 10,000 PSI max
when used with pressure retaining covers P/N 740095)

Cables (Transmitter to Probe Cable with Transmitter Mounting Bracket)

Part No.	Description	
748497	M-310 Remote Mounting Kit	
	Code	Cable Type
	1	Retractable (unarmored)
	2	Retractable (armored)
	3	Retrievable (armored) 2500 PSI
	4	Retrievable (unarmored) 2500 PSI
	5	Retrievable (armored) 10,000 PSI
	6	Retrievable (unarmored) 10,000 PSI
		Code Cable Length
	L	Length in Feet (15 ft. max)
748497	— 1 —	5 ← Typical Order Number

Accessories

Cosasco Wireless Extender

Model	Description	
MWT-3905-WE	Cosasco Wireless Extender (includes mounting bracket)	
	Code	Radio
	0	Aluminum
	1	Stainless Steel 316 SS
		Code Housing
	0	2.4 GHz Wireless HART7 - Integral Antenna
MWT-3905-WE	— 0 —	0 ← Typical Order Number

7.2 V Lithium Power Module P/N 748400

M-310 Installation Kit -
WirelessHART7 P/N 702406-MWT

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