

MCG 2000MAX Transmitter

Revolutionary / Reliable

L&J Engineering has once again revolutionized the Transmitter market with its latest edition of the MCG 2000 Transmitter, the MCG 2000MAX. The MCG 2000MAX uses L&J's patented absolute magnetic encoding to provide the greatest accuracy ever offered in the history of transmitters with 1/32 of an inch standard and with 1/64 of an inch accuracy as an available option. The reliability of the new MCG 2000MAX is also greatly increased over the previous generation of transmitters due to the huge reduction in the number of parts used.

Ultra Low Power / Cost Effective

The Industry has spoken, and demanded an ultra-low power 2-wire, 4-20mA, 24VDC Loop-Powered version of the MCG 2000 and L&J has delivered with the MCG 2000MAX. The MCG 2000MAX uses a newly redesigned CPU board which greatly reduces the number of components on the board, which greatly reduces power consumption as well as cost. All of the existing and future communication protocols are still supported with this new version as well.

Patented Technology

The MCG 2000MAX utilizes absolute magnetic encoding which is the next step in L&J's patented absolute encoding technology which has been used on the MCG 2000S, MCG 2000SS, MCG 2000SSI, and MCG 2000SFI. L&J has replaced the foot and inch optical discs with foot and inch magnetics which provide much greater accuracy and reliability and also allows for the option of using a much smaller housing than previous offerings. The MCG 2000MAX now has an expanded range of 0-128 feet. By using absolute magnetic encoding the number of parts required is greatly lowered in turn providing unmatched reliability. Just as with the previous generations of MCG 2000's the MCG 2000MAX is completely unaffected by power failures in your tank farm without the use of batteries. When power is restored the transmitter will accurately reflect the current level, even if it has changed, without the need for additional calibration.

Graphical LCD Display w/ Infrared Calibration

The MCG 2000MAX utilizes a brand new local graphical LCD display which has the ability to display up to 10X more information than the previous 2x16 character LCD display used on previous generations of the MCG 2000. As with all the L&J's state of the art level gauging solutions, the MCG 2000MAX can be configured via infrared technology by using the MCG 2150 Remote Calibrator without violating explosion proof environments.

Smart Flash Technology

As with all of L&J Engineering's level gauging products, the MCG 2000MAX uses Smart Flash Technology to allow the end user to "Flash" updates to the transmitter if necessary.



L&J TECHNOLOGIES	
* MCG 2000M Transmitter	
LEVEL	05-07-17
FT-IN-32	
ANALOG	10% 5.62 mA
+75	www.ljtechnologies.com

Features

- Magnetic Absolute Xmitter
- Ultra Low Power
- Absolute Magnetic Encoding for Level Detection
- Level, Temperature and Optional Discrete/ Analog I/O
- Infrared Calibration via Integral Display
- Advanced Flash Memory Technology
- No Batteries or Eproms
- 2-Wire Loop Powered Option
- Multiple Protocols (L&J Tankway, Hart, etc.)
- ATEX/IECEX Approved

Applications

- Couples to mechanical gauges, S&J 92021, and others
- Converts mechanical level measurements into electronic data
- Transmits process data such as temperature (spot or average), pressure and alarms
- Installed in bulk liquid storage vessels for the Petroleum, Petrochemical, Chemical, Pharmaceutical, Food & Beverage, and Water Treatment Industries

Specifications

Accuracy (Over Full Range):

1/32" (0.8mm) Standard, 1/64" Opt.

Range:

0-128 feet (0-39M)

Shaft Rotation:

Selectable - Clockwise or Counterclockwise

Digital Conversion:

Absolute Magnetic Encoding

Calibration:

Feet and 1/16th", Feet and 1/32", Feet and 1/64",
Millimeter

Power Consumption:

0.07W - Backlight off

Power Options:

12 - 70 VDC, 24 VDC Loop Power, 65 VAC

Temperature:

Sensing:

Spot 3-Wire RTD, Average Temp.

Accuracy:

0.5° F (-0.3° C)

Resolution:

0.1° F (-0.06° C)

Baud Rate:

300-38400 Selectable

Lightning Protection:

Comprehensive Surge Protection

Control Option:

Up to 4 Points (Valves and/or Pumps)

I/O Option:

4-20 mA Output

4-20 mA Input

Programmable Dry Contacts

CAM Switches

Field Wires:

2 Wires, 4-20 Loop

4-Field Wires, L&J Tankway

20AWG Minimum

Digital Protocol:

Plug in modules to emulate all protocols including L&J Tankway, Modbus, Profibus DP, Hart, Enraf, Varec and more.

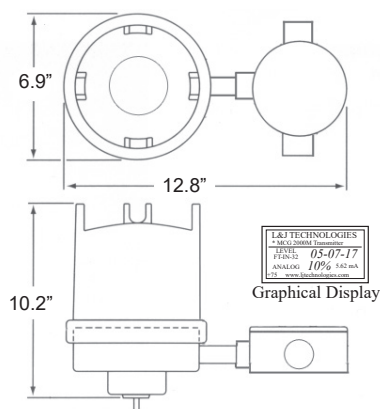
Safety Approvals:

UL/C-UL, Explosion Proof, Class I, Div. 1, Groups C & D

ABS Approved

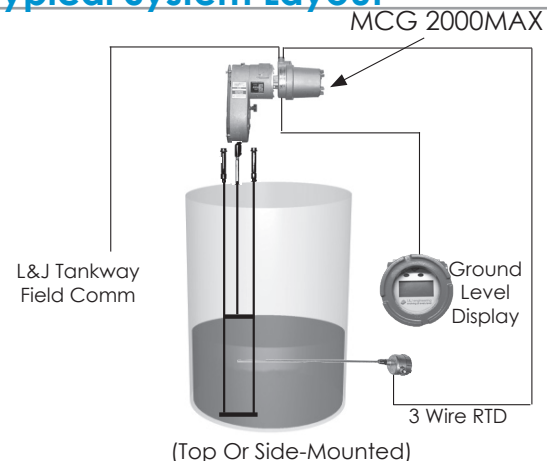
ATEX/IECEx Approved

Dimensions



All designs subject to change. Certified dimensions and specifications available upon request.

Typical System Layout



MCG 2000MAX Ordering Guide

MCG 2000MAX Transmitter

MCG 2150 Remote Calibrator

(One Required)

Model Number Selection:

The model number will consist of a base number **MCG 2000MAX** followed by 10 digit letters. These digits will represent 7 option tables:

MCG 2000MAX - AB - CD - EF - GH - IJ

A - Encoder Type	
0	Standard encoder with UL
1	Standard encoder with ATEX/IECEX
4	Standard encoder with C-UL

B - Coupling	
1	Varec
2	S&J (92020, 92021, 92030)
3	S&J (92006, 92153, 92154)
4	S&J (8000, 2935)
5	Protectoseal
6	Varec (9504) No Housing
7	Varec (1600, 1800, 1900) No Housing
9	GPE No Housing
A	GSI 2500
B	Whessoe 2026
C	S&J (92500)
D	S&J 92021 - Spirally Guided Cover
E	S&J 92500 - Spirally Guided Cover

CD - Inputs and Temperature	
00	None
02	Average Temperature*
05	4-20mA Input (Temperature)
11	Spot Temperature
17	4-20mA Input (Temperature), Spot Temperature
36	4-20mA Input (Temperature), Average Temperature*

Calibration Type (Pl or Cu) is software-selectable in this model.

The default is Platinum.

*Requires MCG 2350 Average Temperature and a MCG 350/351 Average Temperature bulb (Ordered Separately).

EF - Switches / Relays	
00	None
01	Two CAM Switches, 5A @ 120 VAC
02	Three CAM Switches, 5A @ 120 VAC
03	Four CAM Switches, 5A @ 120 VAC
20	2 Relays, .4 Amp @ 120 VAC (alarm relay) (Hi & HiHi only)
21	4 Relays, .4 Amp @ 120 VAC (alarm relay) (Lo, LoLo, Hi, HiHi)

GH - Output	
00	L&J Tankway
01	4-20mA Output (Must Select Opt 1, 7 or 8)
03	L&J Tankway, Ground Level Display*
06	Dual 4-20mA Output (Level & Temp)
08	Varec 1800, 1900 (4-Wire, 1/2 Duplex)
09	Varec 1600 (20 Wire Matrix)
10	GPE 31422, 31423 Protocols
11	Modbus on L&J Tankway
12	RGL/NMC
13	4-20mA Output, Ground Level Display*
14	Modbus on RS-485 (2-Wire)
15	Enraf
16	HART
18	HART (HIU Compatibility)
24	No Output, Ground Level Display*
29	Ti-Way Protocol
34	Modbus on RS-485 (4-Wire)
40	GSI Protocol (RS-485)
42	Profibus DP
44	Wireless, Ground Level Display*
46	Saab TRL/2
49	Foundation Fieldbus (Use Table V Option 7 for Power)
51	GPE 31420 (0-2.5 VDC Output)
53	GPE 31422 / GPE 31423, Ground Level Display*
56	WirelessHART
XX	Special Protocols and Emulations Available

* Must quote MCG 1350 Ground Level Display Separately

I - Power	
0	48 VDC - Standard (12-70 VDC)
5	65 VAC
7	2-Wire, 24 VDC Loop Powered (4-20mA, HART, Foundation Fieldbus)

J - Control Points	
0	None (2 Discrete Ins, Standard)

NOTE: For ease of installation customer may desire the following.
 MCG 2100 (Field Calibrator)
 MCG 2150 Remote Calibrator