



**Non-contact microwave technology**

**+/- 3 mm accuracy**

**Antennas tailored for specific applications**

## The L&J Engineering Model MCG 1700 Radar Gauge (Analog Output)

### Application Specific Dual Microprocessors

At the heart of the MCG 1700 is a high integration core microprocessor which can be customized to specific applications. A separate DSP microprocessor provides high speed measurement and algorithm processing for high accuracy, obstruction avoidance, self-calibration, and echo cancellation. All programmed and processed information can be displayed on the gauge's 80-character LCD as well as an optional ground level display.

### Antennas

Years of experience have enabled L&J Engineering to provide the optimal antenna configuration for a given application. Three antenna designs, parabolic, cone and stillwell, accommodate various process parameters which include surface conditions, height to measure, dielectric constant of product and internal obstructions.

### Ground Level Display

The optional Ground Level Display (MCG 1350 GLD) is a remote LCD display which is identical in form and function to the display on the main unit. It enables complete programming and calibration functions via the hand-held infrared calibrator, MCG 2150.

### Simplified Output

The MCG 1700 is an analog output version of our high accuracy MCG 1600 Radar Gauge. It is used in situations where process control via an analog output is the most logical approach to satisfy gauging requirements.

## Applications

**Liquid level gauging of virtually any corrosive, contaminated or viscous product including;**

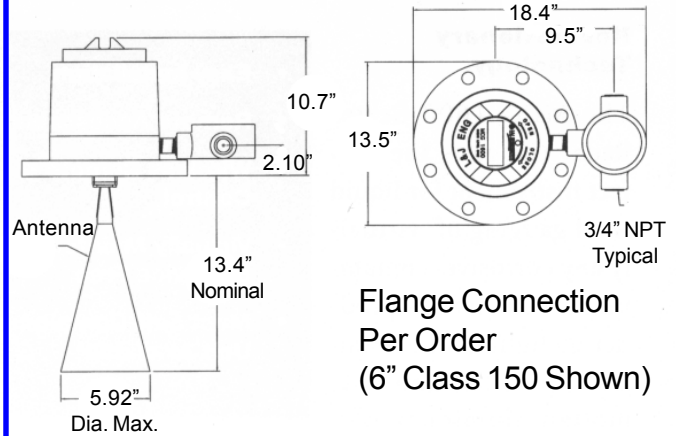
oil	chemicals	gasoline	paraffin
tar	molten sulfur	phosgene	pharmaceutical base products
latex	polyethylene	titanium dioxide	cryogenic or liquified gases
limestone rock	chocolate	molten aluminum	

#### SPECIFICATIONS

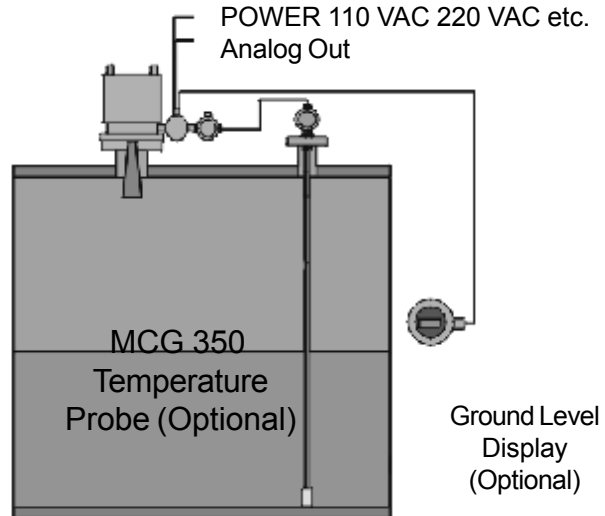
Measuring Principle:	FMCW Radar
Range:	0-75 (23m) feet standard. Up to 180 feet (55m) optional
Accuracy:	+/-1/16" (3mm), depending on the installation and height
Resolution:	.03% of Span
Radar Power:	Less than 1mw (0dBm)
Electronics Temperature:	-40° F to 150° F (-40°C to +65° C)
Product Temperature:	-148° F to 482° F (-100° C to 250° C)
Local Display:	4 line x 20 Character LCD
Optional Remote Display:	Ground Level Display (4 line x 20 LCD)
I/O Option:	2 4-20mA Out 2 4-20 mA In
Temp Option:	Single RTD or Temp Avg. Probe (CU/PT)
Control Options:	2 points, 4 contacts
Power:	110VAC, 240VAC, 24VDC @ 10W Other voltages available
Lightning Protection:	Comprehensive Surge Protection Standard
Max. Pressure:	150PSIG (or 300PSIG optional)
Construction:	Cast Aluminum Std. Stainless Steel Opt.
Mounting:	6" ANSI Class 150 Flange Standard, Others Optional including DIN and JIS
Weight:	23 lbs. - AL
Safety Approvals:	Explosion Proof/ *Intrinsically Safe Class I, Div. 1, Group B, C & D UL, CUL Approved FCC APPROVED KEMA approved EExd IIC T6
Antennas:	Parabolic, Cone, Stillwell

\*requires MCG 2350 accessory

#### DIMENSIONS



Flange Connection  
Per Order  
(6" Class 150 Shown)



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

#### INFORMATION REQUIRED TO ORDER:

**MCG 1700 XX - YY - ZZ - AA**

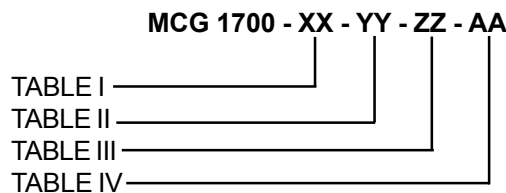
MOUNTING/MATERIAL/APPROVAL \_\_\_\_\_  
 ANALOG OUTPUT \_\_\_\_\_  
 CONTACT OUTPUTS/GROUND LEVEL DISPLAY/HEATER \_\_\_\_\_  
 POWER SUPPLY/ANTENNA/WAVEGUIDE \_\_\_\_\_

**MCG 1700 RADAR LEVEL TRANSMITTER**

**MCG 2150 HAND-HELD FIELD CALIBRATOR (One Required)**

**MODEL NUMBER SELECTION:**

The model number will have a base number, **MCG 1700**, followed by 8 digits. These digits will represent 4 sets of option tables.



**TABLE I - MOUNTING / MATERIAL**

- 04** - 150 #, 4" FF Aluminum Flange - Aluminum Housing
- 05** - 150 #, 6" FF Aluminum Flange - Aluminum Housing
- 06** - 150 #, 8" FF Aluminum Flange - Aluminum Housing
- 07** - 150 #, 10" FF Aluminum Flange - Aluminum Housing
- 12** - 150 #, 8" RF Carbon Steel Flange - Aluminum Housing
- 13** - 150 #, 10" RF Carbon Steel Flange - Aluminum Housing
- 16** - 150 #, 8" FF Carbon Steel Flange - Aluminum Housing
- 17** - 150 # ANSI, 10" FF, Carbon Steel Flange - Aluminum Housing
- 20** - 150 # ANSI, 4" RF, 316 S.S. Flange - 316 S.S. Housing
- 21** - 150 # ANSI, 6" RF, 316 S.S. Flange - 316 S.S. Housing
- 22** - 150 # ANSI, 8" RF, 316 S.S. Flange - 316 S.S. Housing
- 23** - 150 # ANSI, 10" RF, 316 S.S. Flange - 316 S.S. Housing
- 24** - 150 # ANSI, 4" FF, 316 S.S. Flange - 316 S.S. Housing
- 25** - 150 # ANSI, 6" FF, 316 S.S. Flange - 316 S.S. Housing
- 26** - 150 # ANSI, 8" FF, 316 S.S. Flange - 316 S.S. Housing
- 27** - 150 # ANSI, 10" FF, 316 S.S. Flange - 316 S.S. Housing
- 32** - 150 # ANSI, 8" RF, Carbon Steel Flange - 316 S.S. Housing
- 33** - 150 # ANSI, 10" RF, Carbon Steel Flange - 316 S.S. Housing
- 36** - 150 # ANSI, 8" FF, Carbon Steel Flange - 316 S.S. Housing
- 37** - 150 # ANSI, 10" FF, Carbon Steel Flange - 316 S.S. Housing
- 40** - 300 # ANSI, 4" RF, 316 S.S. Flange - 316 S.S. Housing
- 41** - 300 # ANSI, 6" RF, 316 S.S. Flange - 316 S.S. Housing
- 42** - 300 # ANSI, 8" RF, 316 S.S. Flange - 316 S.S. Housing

- 43 - 300 # ANSI, 10" RF, 316 S.S. Flange - 316 S.S. Housing
- 44 - 300 # ANSI, 4" FF, 316 S.S. Flange - 316 S.S. Housing
- 45 - 300 # ANSI, 6" FF, 316 S.S. Flange - 316 S.S. Housing
- 46 - 300 # ANSI, 8" FF, 316 S.S. Flange - 316 S.S. Housing
- 47 - 300 # ANSI, 10" FF, 316 S.S. Flange - 316 S.S. Housing
- 52 - 300 # ANSI, 8" RF, Carbon Steel Flange - 316 S.S. Housing
- 53 - 300 # ANSI, 10" RF, Carbon Steel Flange - 316 S.S. Housing
- 56 - 300 # ANSI, 8" FF, Carbon Steel Flange - 316 S.S. Housing
- 57 - 300 # ANSI, 10" FF, Carbon Steel Flange - 316 S.S. Housing

#### TABLE II - ANALOG OUTPUT

- 00 - None
- 01 - Single 4-20MA Output

#### TABLE III - CONTACT OUTPUTS / GROUND LEVEL DISPLAY / HEATER

- 00 - None
- 01 - 2 Dry Contacts

#### TABLE IV - POWER SUPPLY / ANTENNA / WAVEGUIDE

- 01 - 110 VAC , UL/CSA
- 02 - 24 VDC, UL/CSA
- 03 - 48 VDC, UL/CSA
- 05 - 220 VAC , UL/CSA
- 06 - 48 VAC, UL/CSA
- 07 - 24 VAC, UL/CSA
- 31 - 110 VAC , CENELEC
- 32 - 24 VDC, CENELEC
- 33 - 48 VDC, CENELEC
- 35 - 220 VAC , CENELEC
- 36 - 48 VAC, CENELEC
- 37 - 24 VAC, CENELEC

**NOTE:** Standard Antenna - Teflon-coated Aluminum, Conical Horn, 6" Opening.  
(Others available per application - Consult Factory)