

The background image shows an industrial facility with various pipes, valves, and level gauges. A blue Questtec sensor is mounted on a pipe in the upper right. Two vertical level gauges with yellow and green scales are visible. A blue semi-transparent banner is overlaid across the middle of the image.

# Questtec

SOLUTIONS

MAGNE-TRAC  
PRODUCT CATALOG



# *The New Standard of Level*

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# 1

A LEADER IN  
**LIQUID LEVEL  
MEASUREMENT**

# ABOUT QUESTTEC

**Questtec Solutions** has a long history of quality, experience, and care in the development and engineering of the liquid level gage and valve product lines.

Over the past fifty years, under the direction of Daniel Measurement and Control, **Questtec Solutions'** products have been consistently refined to remain one of the industry leaders in liquid level measurement. Today, **Questtec Solutions** carries on this legacy with renewed dedication in order to bring you real solutions.

**Questtec Solutions**, employs over 125 years of collective experience with all aspects of the liquid level gage and valve product lines. With a new state-of-the-art manufacturing facility, and custom weld shop fabrication services, **Questtec Solutions** is able to provide flexibility to tailor to its customer's specific needs.



## 125+ YEARS

of collective experience in liquid level gage and valve product lines



## NEW STATE-OF-THE-ART MANUFACTURING FACILITY



## CUSTOM WELD SHOP FABRICATION SERVICES

provide flexibility to tailor to its customer's specific needs

*When choosing your liquid level measurement solutions provider, why not choose the best?*

The symmetry of a field-tested, reputable product, coupled with the energy of new management, has positioned Questtec Solutions to be best suited to assist you in solving your liquid level measurement challenges.

**Questtec Solutions delivers engineered solutions to meet the most complex level bridge requirements.**

In addition to the existing Daniel Liquid Level Gage and Valve line, this new facility, allows **Questtec Solutions** to offer new products, which include:



**WHY  
 CHOOSE  
 US**

**At Questtec Solutions, we strive to exceed our customer's expectations by using a hands-on approach.**

For every project, we take our customers through a step-by-step process to identify both cost efficient options, as well as, effective solutions for even the most challenging applications. Our approach, high quality products, and experienced team members are testimony to customer confidence in **Questtec Solutions** as a leader in the liquid level instrumentation industry.

- ENGINEERED SOLUTIONS**
- WORLD CLASS MANUFACTURING FACILITY**
- FULL-RANGE CAPABILITIES**
- TOP NOTCH WELDING FACILITY**



**READY TO SPEC? TURN TO "06: SPECIFICATION MODEL GUIDE"**



### ENGINEERED SOLUTIONS

With collaborative efforts of our dynamic outside sales team and network of domestic and international product representatives, we provide quick insight and responsiveness that customers warrant. In addition, our knowledgeable inside sales team will work alongside production staff to deliver flexible lead times, a variety of options for customized bids, and explore all possible solutions for each individual project.



### FULL-RANGE CAPABILITIES

Engineering operations are an essential aspect of developing, adapting, and refining any product line. We offer complete engineering services to all of our customers. From the early development stages of projects, our accomplished engineers will review applications to find efficient solutions. Our approval drawings provide real options for customers' application in regards to applicable code and standards. We recognize that focusing on the engineering of each unit benefits in the assimilation of our products for seamless operations.



### WORLD CLASS MANUFACTURING FACILITY

Our manufacturing is split into three distinct skill centers: machining, fabrication, and assembly. All shop work is carefully documented and inspected throughout the manufacturing process. Our production planners follow assigned orders, and communicate job specific requirements to the shop floor. We maintain focus on quality, speed, exceeding customer expectations.

**CNC machining and laser engraving capabilities**



### TOP NOTCH WELDING FACILITY QUALIFICATIONS

Section IX Weld Procedures (WPS)	Procedure Qualifications (PQR)
Welder Certification (Level II Weld Inspector on Staff)	Conforms with PED (Pressure Equipment Directive)
Standard Welds GTAW	MTR (Material Test Reports)
PMI (Positive Material Identification)	Pressure Piping Stamp (PP)
NB-415 Accreditation of R Repair Organizations (R Stamp)	CNC Precision Manufacturing
ASME "S" & "R" and "U, Div. 1" Stamp / ASME B 31.1, B31.3	Over 35 Weld Procedures for numerous material grades

### TESTING PROCEDURES

PWHT (Post Weld Heat Treat)	Dye-Penetration (performed in-house)
Radiography	Ultrasonic
Magnetic Particle Testing	Destructive Testing

### APPROVALS

ATEX 	FM 	CSA 	NACE 	CRN 	IEC 
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# APPLICATION OPPORTUNITIES

YOUR SOLUTION FOR LIQUID LEVEL MEASUREMENT

	CHEMICAL & PETROCHEMICAL
	METALS & MINERALS
	REFINING
	OIL & GAS
	POWER GENERATION
	AEROSPACE
	FOOD PROCESSING
	PULP & PAPER

# 2

## MAGNETIC LEVEL INDICATOR COMPONENTS

# MAGNETIC LEVEL INDICATOR COMPONENTS

## What is a Magnetic Level Indicator, or MLI?

An MLI is a safe and effective way to provide local level indication. With options for non-invasive/externally mounted instrumentation, such as magnetic level switches and transmitters, make the technology a go-to solution for many difficult and demanding applications that require reduced leak points with clear, visible, and reliable level indication. At **Questtec Solutions**, we have built our business on a readiness to adapt to specific customer requirements in terms of customer materials, fabrication, and delivery requirements. Our standard configuration is by no means the limits to our capacity of supply.

### A Magnetic Level Indicator (MLI) consists of 5 major components

Constructed of non-magnetic materials including standard 316 SST. Exotic materials such as Alloy 20 & Hastelloy C are available. Traditional inlet & outlet mounted design displaying liquid level to match the vessel level. Complete with flange end closure for accessibility to the float. Magne-Trac chambers are available to ASME 31.1 and 31.3.

#### FEATURES

Innovative Flag Design Maximizes Magnetic Field

Wide Flags for Enhanced Indicator View

Impact Resistant Polycarbonate Indicator Window

Corrosion Resistant Moving Parts

Wide Variety of Materials

Available to ASME 31.1 / 31.3 Standards



1

#### INDICATOR

Indicators provide a high-contrast visual representation of the liquid level.

[LEARN MORE, PAGE 9](#)



2

#### CHAMBER

A chamber is custom-engineered and constructed per the highest manufacturing standards. A wide range of non-magnetic materials such as stainless steel, exotic alloys, and hard plastics are available for construction.

[LEARN MORE, PAGE 12](#)

SCHEDULE 40 CHAMBER CONSTRUCTION AS A STANDARD



3



### TRANSMITTER

Loop-powered level transmitters expand the functionality of a magnetic level indicator by providing process data back to the control room. (Magnetostrictive or Guided Wave Radar, as shown.)

**LEARN MORE, PAGE 18 - 24**

4



### SWITCH

Externally mounted magnetic level switches expand control capabilities of MLIs. These can be used as latching level alarms or level controls by sensing the position of the float in the chamber.

**LEARN MORE, PAGE 22**

5



### FLOAT

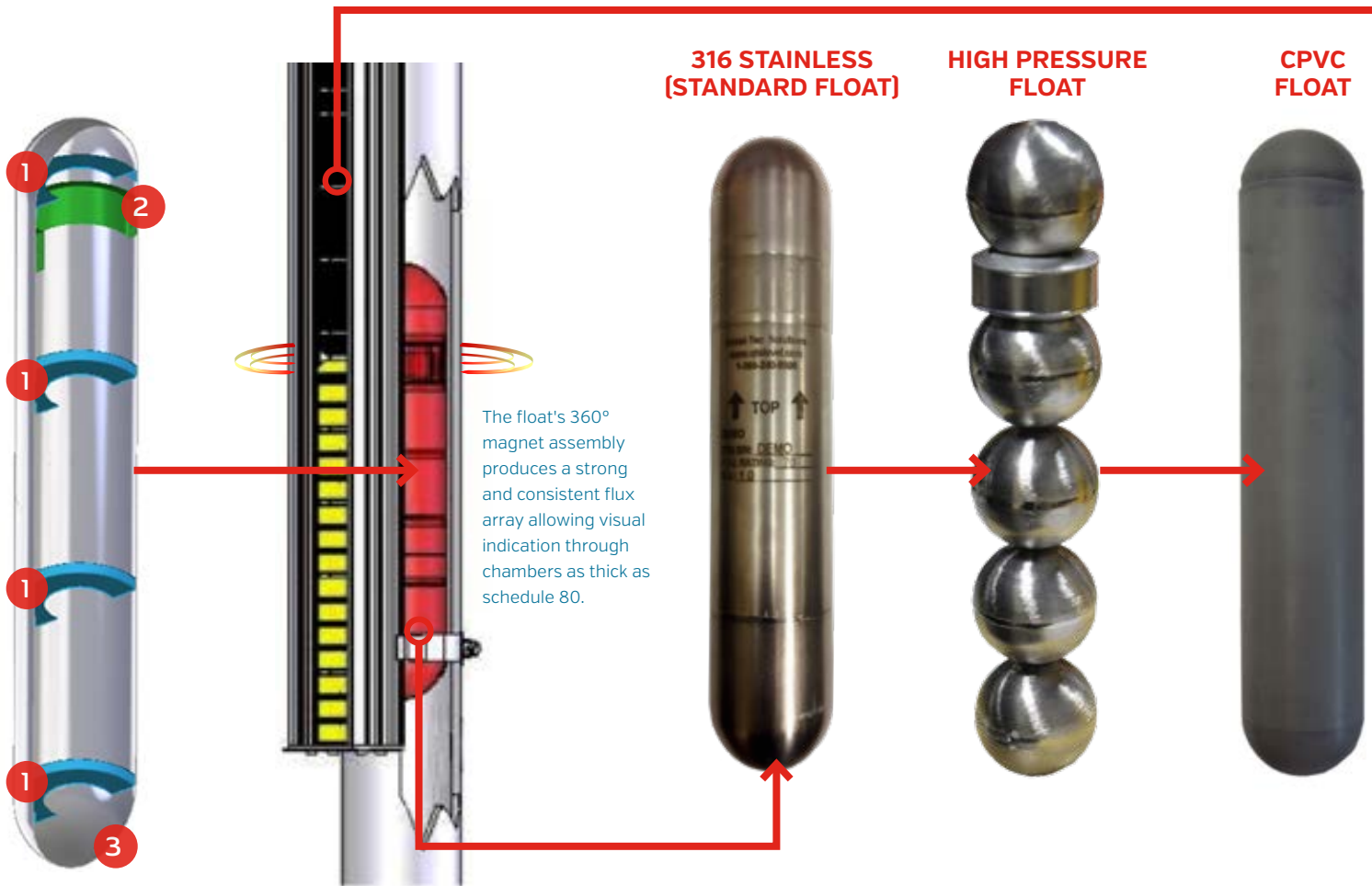
Engineered and designed to solve each level application, the float is the science behind accurate magnetic level measurement. Size, volume, weight, buoyant force, and construction technique are variables carefully considered before each float is manufactured. Smooth Autogenous welds on all floats producing an ultra-smooth weld, without bead which could interfere with the float's motion.

**LEARN MORE, PAGE 8**

THE HEART OF THE QUESTTEC FLOAT  
 TECHNOLOGY

**Precision Manufactured Float: The magnetic float is the most crucial component within Questtec Solutions' magnetic level indicators.**

Constantly pushing the limits of design structure, buoyancy, density, weight and pressure Questtec stays on the cutting edge of innovation. Our engineers aim to provide customers with the most effective solutions no matter how difficult the applications or extreme the environments. Questtec boast solutions for a variety of unique high pressure/high temperature, flashing, interface and corrosive processes.



- 1. STIFFENING RINGS;
- 2. MAGNET;
- 3. FLOAT BODY

**CAPABILITIES**

Process pressures up to 4,500+ psig [310 bar]<sup>1</sup>

Process temperatures up to 800°F [427°C]<sup>1</sup>

High temperature magnets to 1000°F [538°C]

Total level specific gravities as low as 0.33<sup>1</sup>

Interface float designs available for liquid specific gravity differentials as little as 0.1

Adequate buoyancy to operate effectively and freely in many viscous liquids, including crude oil

<sup>1</sup>maximum capabilities can vary depending on combination of pressure, temperature, and media specific gravity

# WIDE FLAG INDICATOR DESIGN

Standard indicators consist of anodized aluminum housing; black & yellow rotating flags; and a clear UV scratch resistant polycarbonate window.

Each flag is 1.4" wide to heighten overall viewing capabilities from up to 200ft. The non-corrosive flag materials also eliminate problems with deterioration often encountered with market standard aluminum flag/stainless steel pins. Magne-Trac™ indicators are constructed with a UV scratch resistant polycarbonate window as standard, eliminating the fragility often encountered with glass while still forming a high integrity fit. The tightly sealed housing contains a single column wide flag assembly all aligned within an extruded aluminum case.

### SCALE OPTIONS

In addition to the standard stainless steel scale (graduated in feet and inches), other custom scale options are available

Inches only

Offset zero (plus & minus scale divisions)

Negative/Positive (boiler service)

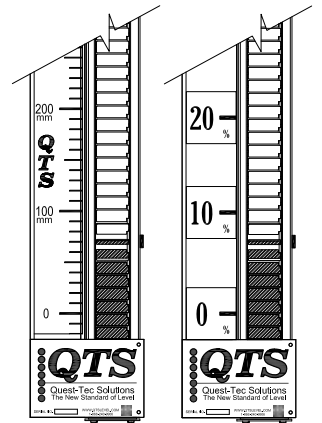
Percent (0 to 100) -10% increment std.

Metric (mm/M)

Volumetric (gallons, liters)

Decimal feet (0.1ft or 0.01ft.divisions)

Given the characteristics of every vessel are different, drawings or strapping tables must be supplied.



**EACH FLAG CONTAINS  
 TWO HIGH STRENGTH  
 MAGNETS**



# 200 FEET LEVEL VIEWING



# 3

**SAFE &  
ECONOMICAL  
MEASUREMENT**  
WITH MAGNE-TRAC PRODUCTS

**QTS**  
Quest-Tec Solutions  
The New Standard of Level  
MT-002583 WWW.QTLEVEL.COM  
1-866-240-9906

MADE IN U.S.A.  
MT-002583  
PO# 109900

# MAGNETIC LEVEL INDICATOR SPECIFICATION



## The Questtec Magne-Trac Engineered to your Specifications!

In applications for extreme pressure, temperature, vibration, and highly corrosive or hazardous material, the Magne-Trac gage will perform where others fail. Features include lower installation costs, easy to read liquid level indication, and low maintenance. The Magne-Trac gage is constructed of non-magnetic materials including standard 316 SST. Exotic materials such as Alloy 20 & Hastelloy C are also available. Traditional inlet & outlet-mounted design display liquid level to match the vessel level. Comes complete with flange end closure for accessibility to float. Magne-Trac chambers are available to ASME 31.1 and 31.3.

### FEATURES

Innovative Flag Design Maximizes Magnetic Field	Wide Flags for Enhanced Indicator View
Low Specific Gravities	Corrosion Resistant Moving Parts
Wide Variety of Materials	High Pressure Applications

Available to ASME B31.1/31.3 Standards

### SPECIFICATIONS

Measuring Range	Standard single section	12 to 216in
	Multi section (custom)	>216in
Temperature Range	-320°F to 800°F	
Pressure Range	Full Vacuum to 4500 PSIG	
Minimum Specific Gravity	As low as 0.33	

\*Consult factory for additional limits/options

### MATERIALS OF CONSTRUCTION

Chamber Materials  *NACE Material available on request	Standard Alloys	304/304L 316/316L Other 300 series stainless
	Plastics/ Composites	CPVC PVDF (KYNAR)
	Exotic Allys	Titanium, Hastelloy-C276, Alloy20
Chamber Diameters*	2" Sch 40, 2 1/2 Sch 40/80, 3" Sch 40, 3" Sch10, 4" Sch 40, other sizes available *Float Chamber size finalized after engineering review.	
Oversized Chamber (Flashing, Boiling & Dirty Service)	3" Sch 40 with smaller OD floats	
Process Connections	Pressure Class Ratings	ANSI 150#; 300#; 600#; 900#; 1500#; 2500#
	Process Connection	1/2" to 10+ DN20 to DN150
	Process Connection Types	MNPT, FNPT, Weldolet®, Sockolet®, Sockweld Flange, Weldneck Flange, Lap Joint Flange; RTJ Flanged, Plain Pipe Stub

### VISUAL INDICATION

Indicator Flags	1.4" Wide Flag Assembly in Yellow/Black (Additional Colors Available on Request)
Indicator Housing	Anodized Aluminum Stainless Steel casing available upon request
Scale Options	Ft./Inches [Std.], Metric, Percentage, Volume, etc. Custom Scales Available

### FLOAT SPECIFICATIONS

Float Materials	316/316L, Titanium, Hastelloy-C276, CPVC
Specific Gravity Range	As low as 0.33
Pressure	Up to 4500 PSIG @ 100°F
High Temp Magnets	Up to 1000°F *Selected by Questtec application

### TEMPERATURE OPTIONS

High	Insulation Blankets, Electric or Steam Tracing High Temperature Indicators, etc.
Low	Insulation Blankets, Cryogenic Insulation with Non-Frost Extensions, etc.

### LEVEL TRANSMITTER & DISCRETE ALARM OPTIONS

Transmitter Options	MTLT-5000 Magnetostrictive; MTLT-6000 Guided Wave Radar (Use Page 22 for GWR Options)
Switch Options	MTLS-1A; MTLS-5A; MTLS-10A; MTLS-PNEU

**MAGNE-TRAC  
 PLUS  
 (MTP)**



**The Questtec Magne-Trac Plus combines the rugged versatility of the Magne-Trac with the flexibility, accuracy and reliability of a Guided Wave Radar Transmitter inserted into a Bridle-Trac Bypass Chamber.**

The two independent level technologies work together to provide reliable level indication and monitoring. The unique design couples the versatility of an MLI and reliability of GWR with minimum vessel penetration and maximum ease of installation with virtually maintenance-free operation.

Change in the process tank level corresponds to change in the Magne-Trac Plus chambers. The float within the chamber actuates flags for visual indication. The instrument mounted within the second chamber also reacts according to the level change.

SPECIFICATIONS		
Measuring Range	Standard single section	12 to 216in
	Multi section (custom)	>216in
Temperature Range	-320°F to 800°F	
Pressure Range	Full Vacuum to 4500 PSIG	
Minimum Specific Gravity	As low as 0.33	
Chamber Design	Dual Chamber, 1 Set of Process Connections	

\*Consult factory for additional limits/options

**DISCO-TRAC  
 (DT)**



**Direct Insertion Single Chamber Oversize =  
 The best approach for indicating level!**

The Disco Trac combines the operating system of a conventional float-based magnetic level indicator (MLI) with a guided wave radar transmitter. This means you can enjoy reliable and accurate level-measurement in a simple and elegant design. Using a 3", 4"+ chamber to house both the GWR probe and the MLI float, these devices operate seamlessly to provide continuous electronic guided wave radar measurement and visual indication. Disco-Trac provides two independent level technologies off a single set of process taps for true redundant measurement. A single chamber is achieved by adding a slotted baffle plate inside the chamber to separate float and GWR Probe. The Guided Wave Radar transmitter obtains the independent reading of the liquid level, providing an accurate output even in the case of float failure. The GWR will read the true level of fluid even if density of product varies.

SPECIFICATIONS		
Measuring Range	Standard single section	12 to 216in
	Multi section (custom)	>216in
Temperature Range	-320°F to 800°F	
Pressure Range	Full Vacuum to 4500 PSIG	
Minimum Specific Gravity	As low as 0.33	
Chamber Design	Single Chamber, 1 Set of Process Connections	

\*Consult factory for additional limits/options

Measuring Range\*\* \*\*Limited by maximum length of GWR Probes

**BRIDLE-TRAC  
 (BT)**  
**BRIDLE-TRAC PLUS  
 (BTP)**



BTP Shown

**The Questtec Bridle-Trac is an ideal means of utilizing the power of many technologies without mounting directly into process vessel.**

The Questtec Bridle-Trac external chamber is a self-contained cage designed for use with our top mounting level transmitters or switches. Quality construction and a wide selection of configurations make this cage an ideal means of utilizing the power of our many technologies without mounting directly into the process vessel. The chamber is suitable for use with Guided Wave Radar, RF Capacitance Transmitters, Electronic point sensors and top mounted displacer switches. In addition, mount Level Gages and Valves to your Instrument Bridle for ease of maintenance. In addition, the Bridle-Trac Plus allows the utilization of all our other technology offerings such as Magne-Trac, Glass-Trac, Steam-Trac, Armor-Trac and other 3rd party instrumentation with ancillary connections as needed.

**SPECIFICATIONS**

Sealed or flanged-top chamber options

2", 3" and 4" nominal chamber diameters to accommodate all sensing elements, Schedule 40 pipe as a minimum

Carbon steel or 316 stainless steel materials of construction

Rugged Questtec commercial construction available as well as ASME B31.3, ASME B31.1, NACE or combined NACE and ASME B31.3 construction options

Rated for pressures up to 5000 psi (345 bar)

For applications to 842°F (450°C)

Lengths for measuring ranges to twenty feet (6.1 m)

Broad selection of process connections sizes and types

Head flange bolting included with flange-top models

Suitable for use with RF capacitance transmitters, all electronic point sensors and top mounted displacer switches

Optimal design for use with Guided Wave Radar transmitter:

- Smallest possible chamber diameters
- Temperature rating to match HTHP probe
- Pressure rating to match High Temperature, High Pressure (HTHP) and High Pressure (HP) probes
- Space above and below measuring range to accommodate measurement transition zones

**READY  
 TO SPEC?**

The following is an overview of **Questtec Solution's** standard steam products. For more in depth information, contact your Questtec Sales Representative. You can also contact Questtec directly by email at [sales@qtslevel.com](mailto:sales@qtslevel.com), or online at: [questtecsolutions.com](http://questtecsolutions.com)



**ECO-TRAC**  
 (ET)  
 ECONOMICAL & SIMPLE



The Questtec Solution Eco-trac series offers the same functionality, robustness, and reliability of our Magne Trac series at more cost efficient design for light industrial services.

This product is safe and very economical alternative to sight glass sight glass technology to reduce leak points and broken glass concerns. The fixed design and specification allow for a quick, cost effective solution to many applications. The EcoTrac series meets and exceeds ASME class 150 ratings in most cases and is ideal for low pressure and temperature applications. Well suited for but not limited to applications such as skid systems, boiler feed water tanks, refrigeration units, wastewater treatment facilities and other light industrial applications. The Eco-Trac series can be combined with our magnetic level transmitters provide continuous level monitoring and magnetic level switches for discrete high and low alarms.

**MATERIALS OF CONSTRUCTION**

304SS or 316SS Chamber and Flanges

304SS or 316SS Chamber and Carbon Steel Flanges

Chamber/Pipe: 2" sch40

**VESSEL CONNECTIONS**

M.NPT: ½" to 1", sch80

Flange: ½" to 2" RFSW, sch40

**PIPE ENCLOSURE**

2" M. NPT x ¾" FNPT Bushing

**OPERATING CONDITIONS**

**Min SG** 0.65

**Max Pressure Rating** 500 PSIG

**Max Temperature Rating:** 300° F

**Maximum Length** [Centers/Visible] 72"

**Minimum Length** [Centers/Visible] 8"

**VISUAL INDICATOR**

Aluminum Housing with Polycarbonate Shield

Flags: Black/Yellow

No Scale [std.]

Weatherproof

**FLOAT**

12" long oblong, 316SS [std.]

Titanium

**ACCESSORIES**  
 TRANSMITTERS  
 & SWITCHES



**MTLS-1A** **MTLS-5A**  
 1 AMP 5 AMP



**MTLS-10A**  
 10 AMP



**MTLT-5000**



**MTLT-6000**

**ECO-TRAC PLUS  
 (ETP)**



The Eco-Trac Plus series offers the same functionality, robustness and reliability of our Magne-Trac Plus series with a fixed cost-efficient design for light industrial services.

Just like the Eco-Trac series this product is an economical alternative to sight glass technology. The ETP series is combined with the highly reliable guided wave radar harnessing the benefit of two independent technologies in one cost effective solution for visual indication and level monitoring needs. The ETP series also meets and exceeds ASME class 150# ratings and is ideal for low pressure and temperature solution making it well suited for applications such as skid systems, boiler feed water tanks, refrigeration units, wastewater treatment facilities and many other light industrial applications. The ETP series can still be combined with our magnetic level transmitters and switches to provide an even higher level of redundancy.

**MATERIALS OF CONSTRUCTION**

304SS or 316SS Chamber and Flanges

304SS or 316SS Chamber and Carbon Steel Flanges

Chamber/Pipe: 2" sch40

**VESSEL CONNECTIONS**

M.NPT: 1/2" to 1", sch80

Flange: 1/2" to 2" RFSW, sch40

**PIPE ENCLOSURE**

2" M. NPT x 3/4" FNPT Bushing

**OPERATING CONDITIONS**

**Min SG** 0.65

**Max Pressure Rating** 500 PSIG

**Max Temperature Rating:** 300° F

**Maximum Length** [Gliders/Visible] 72"

**Minimum Length** [Centers/Visible] 8"

**VISUAL INDICATOR**

Aluminum Housing with Polycarbonate Shield

Flags: Black/Yellow

Weatherproof

No Scale

**FLOAT**

12" long oblong, 316SS

Titanium

**ACCESSORIES  
 TRANSMITTERS  
 & SWITCHES**



**MTLS-1A**  
1 AMP



**MTLS-5A**  
5 AMP



**MTLS-10A**  
10 AMP



**MTLT-5000**



**MTLT-6000**

**Guided  
Wave Radar**

# 4

## OPTIONAL EQUIPMENT



1-323-24-108  
1" 150# RF SWG  
SA 182 316SS FLANGE

1-327-01-011

PN:1-323-18-108  
SIZE: 1" - 150#  
RFSW - SCH 40  
MAT:316SS

1-323-15-332P

1-323-15-620

PN:1-323-15-351P  
SIZE: 2" X 3/4" 150# RFSW  
SCH: 40H  
MAT: 316SS

PN:1-323-15-325P  
SIZE: 2" X 1/2" 150#  
RFSW  
MAT: 316SS

1-323-18-622

1-323-18-680

1-323-15-620

1-327-01-0235

PN:1-323-18-164  
SIZE: 3/4" 300# RFSW  
SCH: 40  
MAT:316SS

PN:1-323-15-388P  
SIZE: 1 1/2" X 3/4" 300# RF  
MAT:316SS

PN:1-323-15-385P  
SIZE: 1" 300# RFSW  
SCH: 160  
MAT:316SS

PN:1-323-15-385P  
SIZE: 1" 300# RFSW  
SCH: 40  
MAT:316SS

PN:1-323-18-229

PN:1-323-18-140

1-323-18-704

PN:1-323-18-200  
SIZE: 2" X 1" 300# RFSW  
MAT: SA 182 304SS FLANGE

## OPTIONAL EQUIPMENT

OPTIONAL  
EQUIPMENT

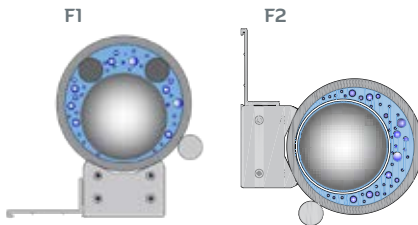
These items are listed on the Specification Guide for items to add to our MLI.

### HIGH-TEMPERATURE INSULATION BLANKET (HB)



**Questtec Solutions** specializes in custom fiberglass insulation blankets for MLIs of all shapes and sizes. They are constructed with high-quality materials capable of constant contact with temperatures up to 1,000° F (538° C). This insulation is available as personal protection or with heat tracing options for freeze protection or process temperature maintenance.

### FLASHING DESIGNS (F1 OR F2)



The Flashing design encompasses an oversized chamber with either guide rods (F1) or perforated tube (F2) to allow the out-gassing to bypass the smaller sized float that is situated towards one side of the chamber ideal for liquids that boil, flash and/or out-gas.

The F1-guide rode solution is ideal for shorter indication lengths (<8 ft), aggressive applications and dirty services (small, suspended particles). The F2-perforated tube design is ideal for long indication lengths (> 8ft) and clean liquids.

Applications:

- Anhydrous Ammonia,
- Carbon Dioxide,
- Liquid Nitrogen,
- Light Hydrocarbons and Pressure-liquefied gases (propane, butane, methane...)

### HEAT TRACING: ELECTRIC (EH) & STEAM (ST)



For applications where process freeze protection or temperature maintenance is required, heat tracing will allow the MLI to operate uninterrupted throughout harsh, cold conditions.

Electric Heat Tracing is available in self-regulating, constant wattage, and mineral insulated varieties. Contact the factory for more information.

### COLD INSULATION & FROST EXTENSION (CI)



To facilitate operation where the product is kept cold via chillers, refrigerants, and condensers, cryogenic insulation is provided. By insulating the MLI with a specialized cryogenic jacket, process temperatures can be maintained in the liquid state down to -320° F [-195° C].

A frost extension option is available to prevent ice from collecting on the visual indicator, thereby decreasing the visibility. The extension is constructed of durable acrylic plastic and is provided standard with all cryogenic insulation

### MAGNETIC PARTICLE TRAP (MP)



Magnetic Particle Traps provide protection for MLIs. The particles are composed mostly of ferrite, often from carbon steel piping. The trap keeps magnetic particles out of float chamber. The Trap fits in line with the process connection. The trap collects the particles which can be cleaned periodically to ensure continued operation of the magnetic level indicator.

# 5

—  
**ACCESSORIES  
TRANSMITTERS  
& SWITCHES**

# MAGNETOSTRICTIVE LIQUID LEVEL TRANSMITTER MTLT-5000



## PRINCIPLES OF OPERATION

The MTLT5000-Magnetostriuctive M or L Series is based upon the magnetostrictive principle. The sensing tube contains a wire which is pulsed at fixed time intervals. The interaction of the current pulse with the magnetic field created by the magnetic float causes a torsion stress wave to be induced in the wire. This torsion propagates along the wire at a known velocity from the position of the magnetic float and toward both ends of the wire. The microprocessor-based electronics measure the elapsed time between the start and return pulses and convert it into a 4-20 mA DC output which is proportional to the level being measured.

### FEATURES

High Accuracy	4/20mA Analog with HART
AMS Aware	Two Channel Output
Explosion Proof and/or Intrinsically Safe	No scheduled Maintenance or Recalibration (due to non-contact design of sensing element)
Designed and Tested with Questtec Magne-Trac Series	

### SPECIFICATIONS

#### LEVEL OUTPUT

<b>Full Range</b>	.5 ft. to 25 ft.
<b>Non-Linearity</b>	.035% of Full Scale
<b>Repeatability</b>	.01% of Full Scale or 0.015in [0.381]*
<b>Operating Temperature</b>	Electronics: -40°F [-40C] to 160°F [71C] Sensing Element: -40°F [-40°C] to 257°F [125°C] Process Temperature: -40°F 9-40°C] to 400°F [204°C]
<b>Output: Signal/Protocol</b>	Standard 4-20mA DC, 2 Wire HART
<b>Inherent Accuracy</b>	+,-[.] 0.039in [1mm] 20" [508mm] to 300" [7620mm]

#### TRANSMITTER LOOP

<b>Input Voltage</b>	10.5-28 VDC
<b>Fail Safe</b>	High (>21.4mA), or Low (<3.8mA)

#### CALIBRATION

<b>Zero Adjust Range</b>	Anywhere within active length
<b>Span Adjust Range</b>	FS > 6" from zero

#### FIELD INSTALLATION

<b>Mounting</b>	External mounted with QTS Z-bracket
<b>Wiring</b>	2-wire twisted shielded cable 3/4" FNPT Conduit Opening

#### ENVIRONMENTAL

<b>Housing Type</b>	NEMA Type 4X Epoxy Coated Cast Aluminum, 316L Stainless Steel
<b>Humidity</b>	0 to 100% humidity, non-condensing

#### HOUSING OPTIONS/ DIMENSIONS

<b>Single and Dual Cavity</b>	3/4" FNPT Conduit M20 for ATEX/IECEx Version
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<b>Safety Approval</b>	FM/CSA: Explosion-Proof Class I, Groups B, C, D Class II, Groups E, F, G Division I, NEMA 4X	FM/CSA: Intrinsically Safe Class I, Groups A, B, C, D Class II, Groups E, F, G Division I, NEMA 4X
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# MAGNETOSTRICTIVE LEVEL TRANSMITTER MTLT-6000



MTLT-6000 series liquid level transmitter is the latest development in magnetostrictive liquid level sensing technology that is designed exclusively for magnetic level indicators. The MTLT-6000 contains a low profile waveguide that is mounted external to the level gauge chamber. This design isolates the waveguide from excessive vibration and temperature. Due to enhanced sensor technology, the output signal is very sensitive, fast, stable, and accurate. The MTLT-6000 can be mounted and retrofitted to most magnetic liquid level indicators.

## FEATURES

24 VDC nominal, two wire, loop powered	Very durable with a strong, stable, and noise free output
LCD display in 4-20 mA, in, cm, and/or percent	State of the art sensor and transmitter electronics
HART protocol field communication	Unique electronics module design for ease of maintenance
Local programmability allows for easy parameter changes	Maximum transmitter length of 35 feet
Quick-Cal function for simple recalibration to any span	Will retrofit to most magnetic level indicators
Non wetted 316 SS low profile waveguide	Capable of extreme process operating temperatures
Isolated from excessive process temperature and vibration	Explosion proof enclosure, NEMA Type 4X
Top, bottom or remote transmitter enclosure mounting locations	FM Approval (U.S. & Canada)
Short offset mounting dimension of 8.00 inches	ATEX and IEC (Approvals pending)

## SPECIFICATIONS

### PERFORMANCE

<b>Accuracy</b>	+/- 0.015 inches
<b>Repeatability</b>	0.001% of full span
<b>Linearity</b>	0.020% of full span
<b>Refresh Rate</b>	10x per second
<b>Initiation</b>	0.00 seconds
<b>Damping</b>	0.00 to 1.00 @ 0.01 seconds 1.00 to 25.0 @ 1.00 seconds

### ELECTRICAL

<b>Input Voltage</b>	14-30 VDC [24 VDC nominal]
<b>Output</b>	4-20 mA, HART
<b>Resistance</b>	600 Ohms [max] @ 24 VDC
<b>Power</b>	0.66 watts [30 VDC x 0.022 amps]
<b>Error Signal</b>	3.60 mA [low] or 22.0 mA [high]
<b>Interface</b>	3 button keypad
<b>Software</b>	HART
<b>Display</b>	2 line, 8 character LCD
<b>Connection</b>	0.75 inch FNPT [Conduit]

### RATINGS

<b>MAWP</b>	Not applicable [non-invasive]
<b>Ambient temp.</b>	-40° to +158°F [-40° to +70° C]
<b>Process temp.</b>	-150° to +250°F [-100° to +121° C]; [Standard] Options to 850°F [454°C]
<b>Safety Approval</b>	FM Factory Mutual Research Corporation XP / I / 1 / ABCD / T6 Ta = -40°C to +70°C; Type 4X DIP / II / III / EFG / T6 Ta = -40°C to +70°C; Type 4X IS / I / II / III / 1 / ABCDEFG / T4 Ta = -40°C to +70°C NI / I,II,III / 2 / ABCDEFG / T4 Ta = -40°C to +70°C; Type 4X

## GUIDED WAVE RADAR FOR REDUNDANT LEVEL TECHNOLOGY



Endress+Hauser **EH**  
VAR PARTNER

The E&H Guided Wave Radar works with high-frequency radar pulses which are guided along a probe.

These top mounted, direct insertion radars measure and direct level of liquids and solids, both of high and low pressures and temperatures. GWR technology provides dependable level indication through pulsating high-frequency, microwave energy down the probe within a bypass chamber. A GWR will read the true level of the process, even in the density diverges over time.

### PRINCIPLES OF OPERATION

Levelflex works with high-frequency radar pulses which are guided along a probe. As the pulse impacts the medium surface, the characteristic impedance changes and part of the emitted pulse is reflected. The time between pulse launching and receiving is measured and analyzed by the instrument and constitutes a direct measure for the distance between the process connection and the product surface.

### ADVANTAGES

Mounts in bridle chamber to the Magne-Trac and provides Redundant Level	No wet calibration required, simple setup without adjustment
Simultaneous acquisition of interface layer and total level of clear and emulsions interface	Not affected by density of the medium
High Measuring accuracy	Models available to meet applications up to 752° at 5800 psi

### FMP50

Levelflex FMP50 is the instrument for basic applications in liquids which do not place high demands on temperature and pressure ranges or chemical resistance. Particularly in basic supply or storage applications as well as utility processes FMP50 is the best choice.

FEATURES	
<b>Accuracy</b>	Rod probe: +/- 2 mm [0.08 in] Rope probe: +/- 2 mm [0.08 in]
<b>Process temperature</b>	-20...+80 °C [-4...+176 °F]
<b>Process pressure absolute / max. Overpressure limit</b>	Vacuum...6 bar, [Vacuum...87 psi]
<b>Max. Measurement distance</b>	Rod: 4 m [13 ft] Min DK>1.6 Rope: 12 m [40 ft] Min DK>1.6
<b>Main wetted parts</b>	Rod probe: 316L, PPS, Viton Rope probe: 316, PPS, Viton

### FMP51

Continuous level measurement of liquids, pastes and slurries but also for interface measurement. The measurement is not affected by changing media, temperature changes, gas blankets or vapors.

FEATURES	
<b>Process connections</b>	Thread or flange
<b>Temperature</b>	-40 to +200°C [-40 to +392°F]
<b>Pressure</b>	-1 to +40bar [-14.5 to +580psi]
<b>Maximum measuring range</b>	Rod 10m [33ft], rope 45m [148ft], coax 6m [20ft]
<b>Accuracy</b>	±2mm [0.08"]
<b>Dielectric Constant</b>	1.6 [Rod probe, Rope probe], 1.4 [Coax probe]
International explosion protection certificates, overfill prevention WHG SIL, marine approval, 5-point linearity protocol	

### FMP54

Continuous measurement in liquids under extreme conditions. Excellent for steam boilers, toxic media using gas tight feed-through guarantee. Reliable results in case of gas and steam phases. Reliable in moving surface, foam and changing medias.

FEATURES	
<b>Process connections</b>	Thread or flange
<b>Temperature</b>	-196 to +450°C [-320 to +842°F]
<b>Pressure</b>	Vacuum -1 to +400bar [Vacuum -14.5 to +5,800psi]
<b>Maximum measuring range</b>	Rod 10m [33ft], Rope 45m [148ft], coax 6m [20ft]
<b>Accuracy</b>	Rod ±2mm [0.08"]
<b>Dielectric Constant</b>	1.6 [Rod probe, Rope probe], 1.4 [Coax probe]
International explosion protection certificates, overfill prevention WHG, SIL, marine approval, steam boiler approval, 5-point linearity protocol	

### FMP55

Combination of capacitance and guided wave radar measuring principle in one device. The instrument guarantees safe measured value acquisition even in emulsion layers and issues level and interface layer signals simultaneously.

FEATURES	
<b>Process connections</b>	Thread or flange
<b>Temperature</b>	-50 to +200°C [-58 to +392°F]
<b>Pressure</b>	-1 to +40bar [-14.5 to +580psi]
<b>Maximum measuring range</b>	Rod 4m [13t], rope 10m [33ft], coax 6m [20ft]
<b>Accuracy</b>	Rod ±2mm [0.08"]
<b>Dielectric Constant</b>	1.6 [Rod probe, Rope probe], 1.4 [Coax probe]
International explosion protection certificates, overfill prevention WHG, SIL, marine approval	

# SWITCHES

Questtec level switches are hermetically sealed, non-mercury, bi-stable latching switches, which are designed for use with Magne-Trac level gages.

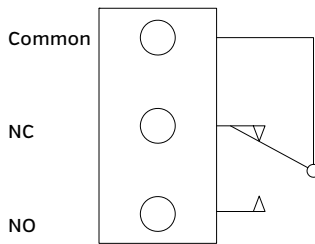
## LEVEL SWITCHES

The bias magnet design latches the switch maintaining the contact after the level continues to rise or fall. The switch will change state when the float magnet passes by. The switches are fully adjustable and non-invasive. Level switches are mounted to the Magne-Trac chamber with all 316 Stainless Steel worm gear pipe clamps. Switch points can be changed easily at any time without any interruption to the visual indication or process.

Standard Enclosure is Cast Aluminum Junction box. Optional, Stainless Steel Junction box. Enclosure Rating is FM/CSA. Level Switches are C Clamp mounted on MLI [standard], clamp mounted on MLI with insulation pad and or attached to a switch mount rod.

## SWITCH WIRING

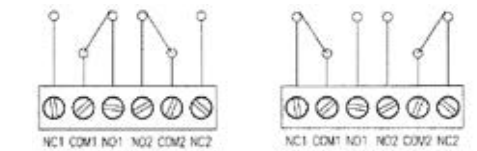
MTLS-1A & 5A



Green = Common  
 Red = NC  
 Blue = NO

Red [NC] = Closed when float below switch  
 Blue [NO] = Closed when float above switch

MTLS-10A



Contacts position when Float is higher than switch  
 Contacts position when Float is lower than switch

A switch mount rod is an available alternative method for mounting the MTLs to an MLI when insulation is present. The rod assembly, which is welded to the MLI chamber, allows the switch to slide along the full length. When the desired position is selected, simply tighten it in place. Consult Factory.



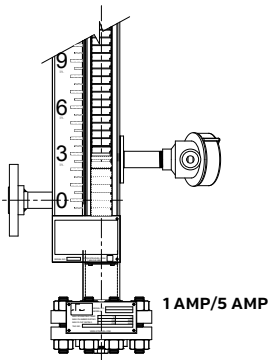
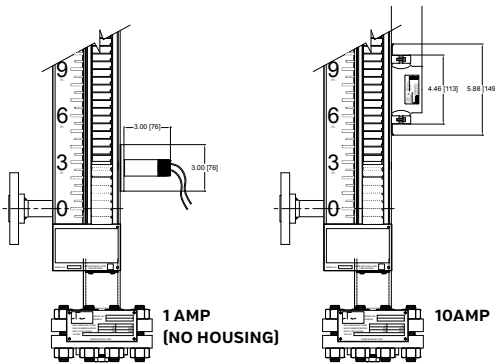
**MTLS-1A**  
**MTLS-5A**



**MTLS-10A**



**MTLS-PNEU**



All switches field adjustable. Loosen the mounting clamps and position at desired location. Ensure that the switch always remains in close proximity to the internal float.

MODEL	Max Volts	Max Current	Max Power	Dead Band	Max Temp	Min Temp	Contacts	Enclosure Classification
<b>MTLS-1A</b>	120 VAC/ 150 VDC	1.0 AMPS	25W	0.50 Inch	302°F [150°C]	-40°F [-40°C]	SPDT	Class 1 Div 1 Groups B, C, D
<b>MTLS-5A</b>	125 /250 VAC	5.0 AMPS	1200W					
<b>MTLS-10A</b>	110/250VA C [Resistive]	10.1 AMPS	2500W	0.50 inch	248°F [120°C]	-40°F [-40°C]	2 SPDT	Class 1 & 2 Div 1 & 2 Groups B, C, D
	110/220 VDC	0.5/0.25 Amps	55W					
<b>MTLS-PNEU</b>	Not Applicable	N/A	N/A	0.50 Inch	200°F [93°C]	0°F [-17°C]		

REFINEME®  
(IN-TANK)  
TRANSMITTER  
MEASURE MORE WITH LESS



The Level Plus® RefineME® liquid level transmitter satisfies the demand for an accurate and robust liquid-level sensor with unsurpassed flexibility to meet most process application conditions.

The RefineME® transmitter provides 3-in-1 measurement using one process opening for product level, interface level, and temperature measurements. Once the transmitter is installed and calibrated there is no requirement for scheduled maintenance or recalibration. Set it and forget it!



**ELECTRONICS**

Input Voltage	10.5 to 28 Vdc
Fail Safe	High, Full scale (Modbus, DDA) Low, 3.5 mA default or High, 22.8 mA (Analog, HART®)
Rev. Polarity Protection	Series diode

**MOUNTING**

Flexible Hose	1 in. Adjustable MNPT or BSPP fitting, Flange mount
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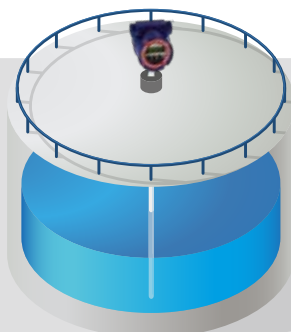
**WIRING**

Connections	4-wire shielded cable or twisted pair, Daniel Woodhead 6-pin male connector, 4570 mm [180 in.] Integral cable with pigtail
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**ELECTRICAL CONNECTIONS**

Single & Dual Cavity	¾ in. FNPT conduit opening, M20 for ATEX/IECEx version
NEMA Type 4X	½ in. FNPT conduit opening Low, 3.5 mA default or High, 22.8 mA (Analog, HART®)

\* Whichever is greater | Δ Contact factory for longer lengths. |  
◇ Contact factory for specific temperature ranges.



Product Level  
Interface Level  
Temperature

3-IN-1 MEASUREMENT

**FEATURES**

3-in-1 Measurement: Product, Interface, Temperature	No Scheduled Maintenance or Recalibration
Inherent Accuracy ±1mm	Integral Display
Intrinsically Safe	API Temperature Corrected Volumes

**APPLICATIONS**

Inventory Control	Bulk Storage	Custody Transfer
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**MARKETS**

Petroleum and Petrochemical	LPG terminals	Mining
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**LEVEL OUTPUT**

Measured Variable	Product level and interface level
Output signal /Protocol	Modbus RTU, DDA, Analog [4-20 mA], HART®
Order length	Rigid Pipe: 305mm [12in] to 7620mm [300in]
Inherent Accuracy	±1 mm [0.039 in.]
Repeatability	0.001% F.S. or 0.381 mm [0.015 in.] * [any direction]

**TEMPERATURE OUTPUT**

Measured Variable	Average and multi-point temperatures (Modbus, DDA) Single point temperature (Analog, HART®)
Temperature Accuracy (Modbus, DDA)	±0.2 °C [0.4 °F] range -40 °C [-40 °F] to -20 °C [-4 °F], ±0.1 °C [0.2 °F] range -20 °C [-4 °F] to 70 °C [158 °F], ±0.15 °C [0.3 °F] range 70 °C [158 °F] to 100 °C [212 °F], ±0.5 °C [0.9 °F] range 100 °C [212 °F] to 105 °C [221 °F]
Temperature Accuracy (Analog, HART®)	±0.28 °C [0.5 °F] range -40 °C [-40 °F] to 105 °C [221 °F]

**ENVIRONMENTAL**

Enclosure Rating	NEMA Type 4X, IP65
Humidity	0 to 100% relative humidity, non-condensing
Operating Temperatures	Electronics: -40 °C [-40 °F] to 71 °C [160 °F] Sensing element: -40 °C [-40 °F] to 125 °C [257 °F] ◇ Temperature element: -40 °C [-40 °F] to 105 °C [221 °F]
Vessel Pressure	Rigid Pipe: 2000psi [138 bar]
Materials	Wetted parts: 316L stainless steel † Non-wetted parts: 316L stainless steel, Epoxy coated aluminum

**DISPLAY**

Measured Variables	Product level, interface level and temperature
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**TANK SLAYER®  
 (IN-TANK)  
 TRANSMITTER**  
 MEASURE MORE  
 WITH LESS



**ELECTRONICS**

Input Voltage	10.5 to 28 Vdc
Fail Safe	High, Full scale [Modbus, DDA] Low, 3.5 mA default or High, 22.8 mA [Analog, HART®]
Rev. Polarity Protection	Series diode

**MOUNTING**

Flexible Hose	1 in. Adjustable MNPT or BSPP fitting, Flange mount
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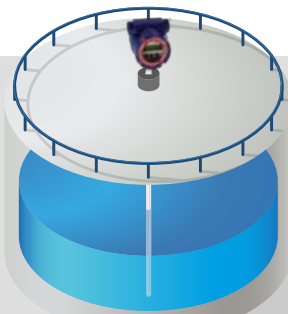
**WIRING**

Connections	4-wire shielded cable or twisted pair, Daniel Woodhead 6-pin male connector, 4570 mm [180 in.] Integral cable with pigtail
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**ELECTRICAL CONNECTIONS**

Single & Dual Cavity	¾ in. FNPT conduit opening, M20 for ATEX/IECEx version
NEMA Type 4X	½ in. FNPT conduit opening Low, 3.5 mA default or High, 22.8 mA [Analog, HART®]

\* Whichever is greater | Δ Contact factory for longer lengths. |  
 ◇ Contact factory for specific temperature ranges.



Product Level  
 Interface Level  
 Temperature

**3-IN-1 MEASUREMENT**

The Level Plus® Tank Slayer® liquid level transmitter satisfies the demand for an accurate and robust liquid-level sensor with unsurpassed flexibility to meet most process conditions.

The Tank Slayer® transmitter provides 3-in-1 measurement using one process opening for product level, interface level, and temperature measurements. Once the transmitter is installed and calibrated there is no requirement for scheduled maintenance or recalibration. **Set it and forget it!**

**FEATURES**

3-in-1 Measurement: Product, Interface, Temperature	No Scheduled Maintenance or Recalibration
Inherent Accuracy ±1mm	Integral Display
Intrinsically Safe & Hazardous Area Certified	API Temperature Corrected Volumes

**APPLICATIONS**

Inventory Control	Bulk Storage	Custody Transfer
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**MARKETS**

Petroleum and Petrochemical	LPG terminals	Mining
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**LEVEL OUTPUT**

Measured Variable	Product level and interface level
Output signal /Protocol	Modbus RTU, DDA, Analog [4-20 mA], HART®
Order length	Flexible hose: 1575 mm [62 in.] to 22000 mm [866 in.] Δ5
Inherent Accuracy	±1 mm [0.039 in.]
Repeatability	0.001% F.S. or 0.381 mm [0.015 in.] * [Any direction]

**TEMPERATURE OUTPUT**

Measured Variable	Average and multi-point temperatures [Modbus, DDA] Single point temperature [Analog, HART®]
Temperature Accuracy [Modbus, DDA]	±0.2 °C [0.4 °F] range -40 °C [-40 °F] to -20 °C [-4 °F], ±0.1 °C [0.2 °F] range -20 °C [-4 °F] to 70 °C [158 °F], ±0.15 °C [0.3 °F] range 70 °C [158 °F] to 100 °C [212 °F], ±0.5 °C [0.9 °F] range 100 °C [212 °F] to 105 °C [221 °F]
Temperature Accuracy [Analog, HART®]	±0.28 °C [0.5 °F] range -40 °C [-40 °F] to 105 °C [221 °F]

**ENVIRONMENTAL**

Enclosure Rating	NEMA Type 4X, IP65
Humidity	0 to 100% relative humidity, non-condensing
Operating Temperatures	Electronics: -40 °C [-40 °F] to 71 °C [160 °F] Sensing element: -40 °C [-40 °F] to 125 °C [257 °F] ◇ Temperature element: -40 °C [-40 °F] to 105 °C [221 °F]
Vessel Pressure	Flexible Hose: 260 psi [18 bar]
Materials	Wetted parts: 316L stainless steel † Non-wetted parts: 316L stainless steel, Epoxy coated aluminum

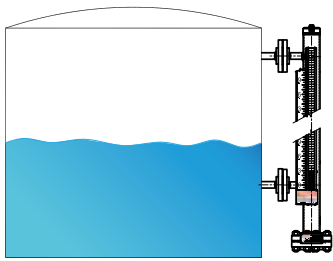
**DISPLAY**

Measured Variables	Product level, interface level and temperature
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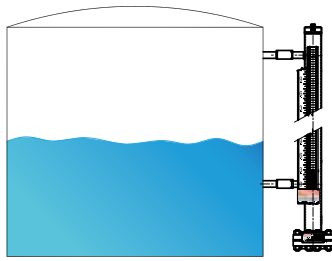
# 6

## OUR SPECIFICATION & MODEL CODE GUIDES

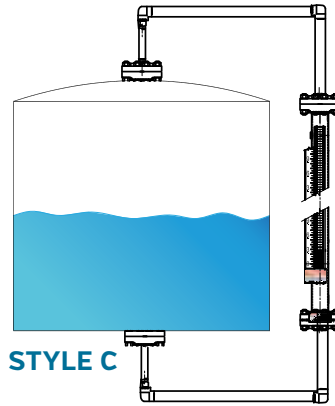
# TYPICAL TANK CONFIGURATIONS QUESTTEC SOLUTIONS



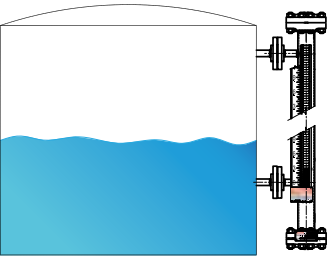
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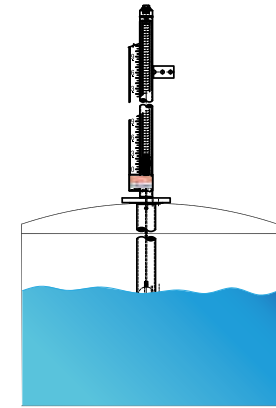
STYLE B



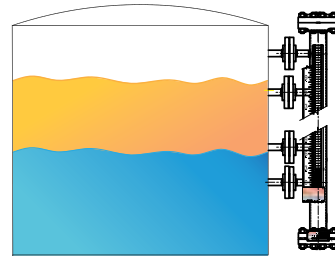
STYLE C



STYLE D



STYLE H



INTERFACE



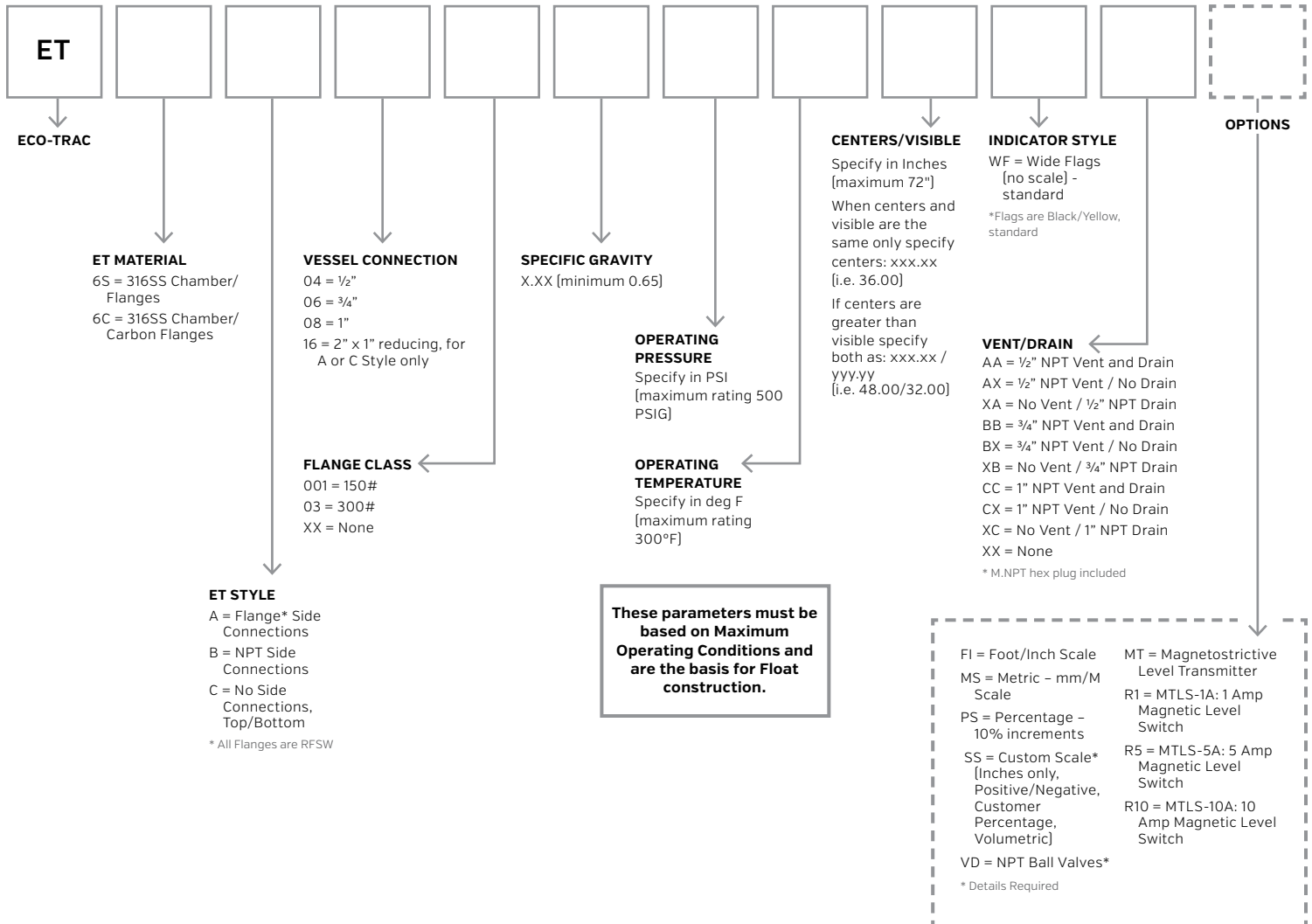
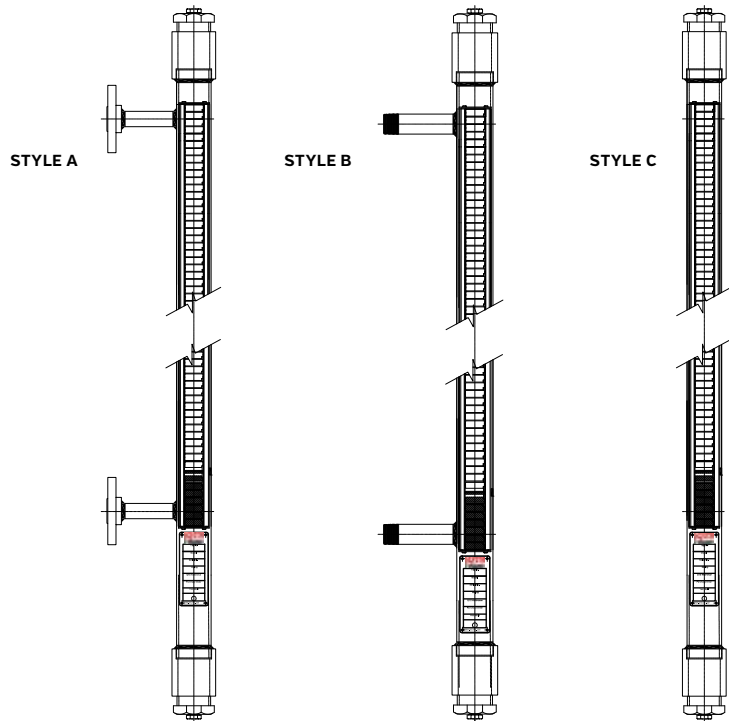






# ECO-TRAC (ET)

This product is safe and very economical alternative to sight glass sight glass technology to reduce leak points and broken glass concerns. The fixed design and specification allow for a quick, cost effective solution to many applications. The EcoTrac series meets and exceeds ASME class 150 ratings in most cases and is ideal for low pressure and temperature applications. Well suited for but not limited to applications such as skid systems, boiler feed water tanks, refrigeration units, wastewater treatment facilities and other light industrial applications. The Eco-Trac series can be combined with our magnetic level transmitters provide continuous level monitoring and magnetic level switches for discrete high and low alarms.





# LEVEL FLEX FMP50

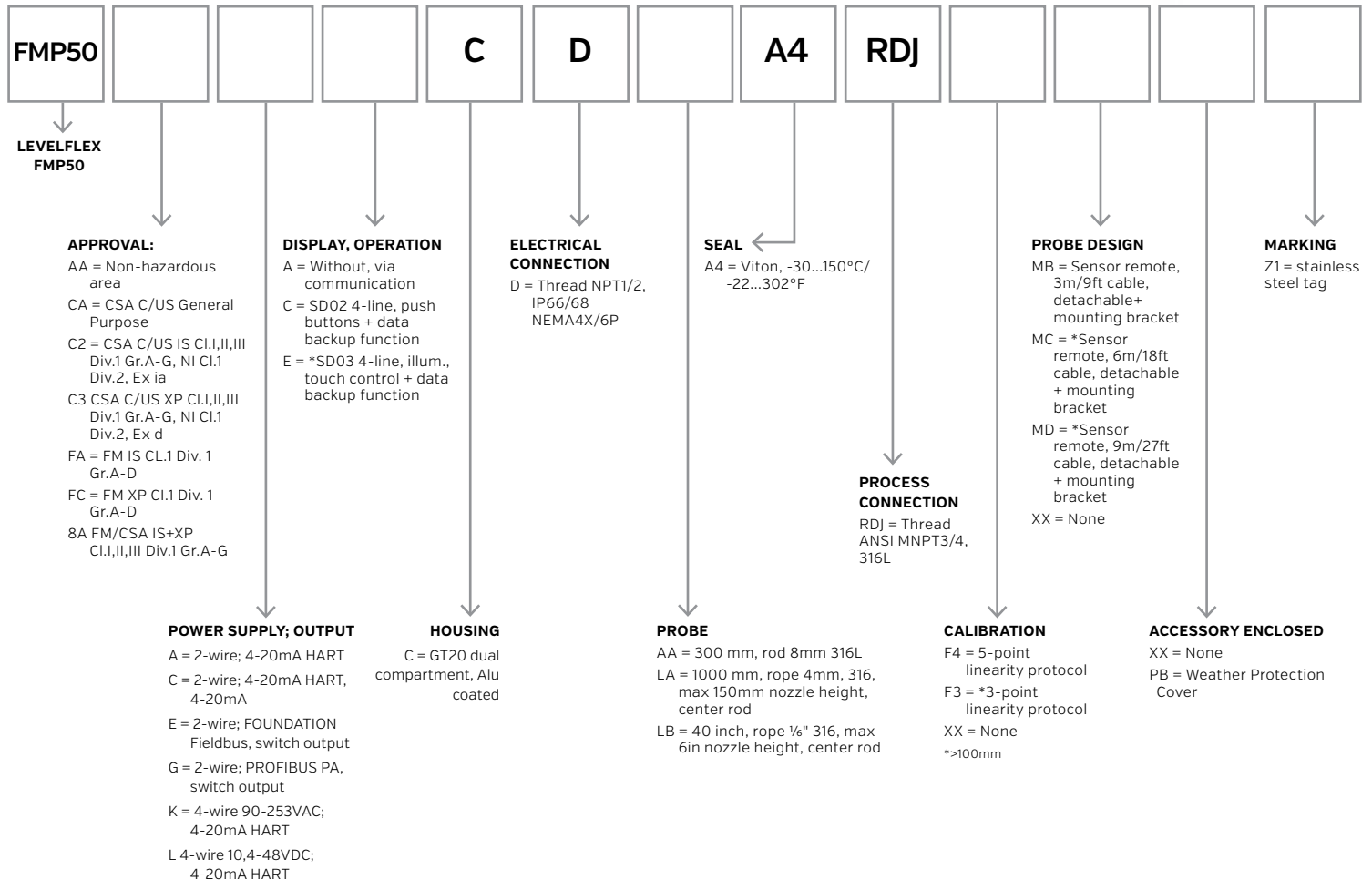
(GO – OPTION IN MTP/ETP/BT/BTP)  
(DT)



Endress+Hauser   
VAR PARTNER

Levelflex FMP50 is the instrument for basic applications in liquids which do not place high demands on temperature and pressure ranges or chemical resistance. Particularly in basic supply or storage applications as well as utility processes FMP50 is the best choice. Levelflex FMP50 guided radar is used for continuous level measurement of liquids, pastes and slurries. The measurement is not affected by changing media, temperature changes, gas blankets or vapors.

FEATURES	
Process temperature	-20...+80 °C [-4...+176 °F]
Process pressure absolute / max. over-pressure limit	Vacuum...6 bar, (Vacuum...87 psi)
Accuracy	Rod probe: +/- 2 mm [0.08 in] Rope probe: +/- 2 mm [0.08 in]
Max. measurement distance	Rod: 4 m [13 ft] Min DK>1.6 Rope: 12 m [40 ft] Min DK>1.6
Main wetted parts	Rod probe: 316L, PPS, Viton Rope probe: 316, PPS, Viton



# LEVELFLEX FMP51

(G1 — OPTION IN MTP/ETP/BT/BTP)  
(DT)

Levelflex FMP51 for level measurement even under extreme process conditions like high temperature and high pressure in the process industry. FMP51 offers maximum reliability even in case of moved surface and foam or when numerous tank baffles interfere with the measurement. Levelflex FMP51 is used for continuous level measurement of liquids, pastes and slurries but also for interface measurement. The measurement is not affected by changing media, temperature changes, gas blankets or vapors.

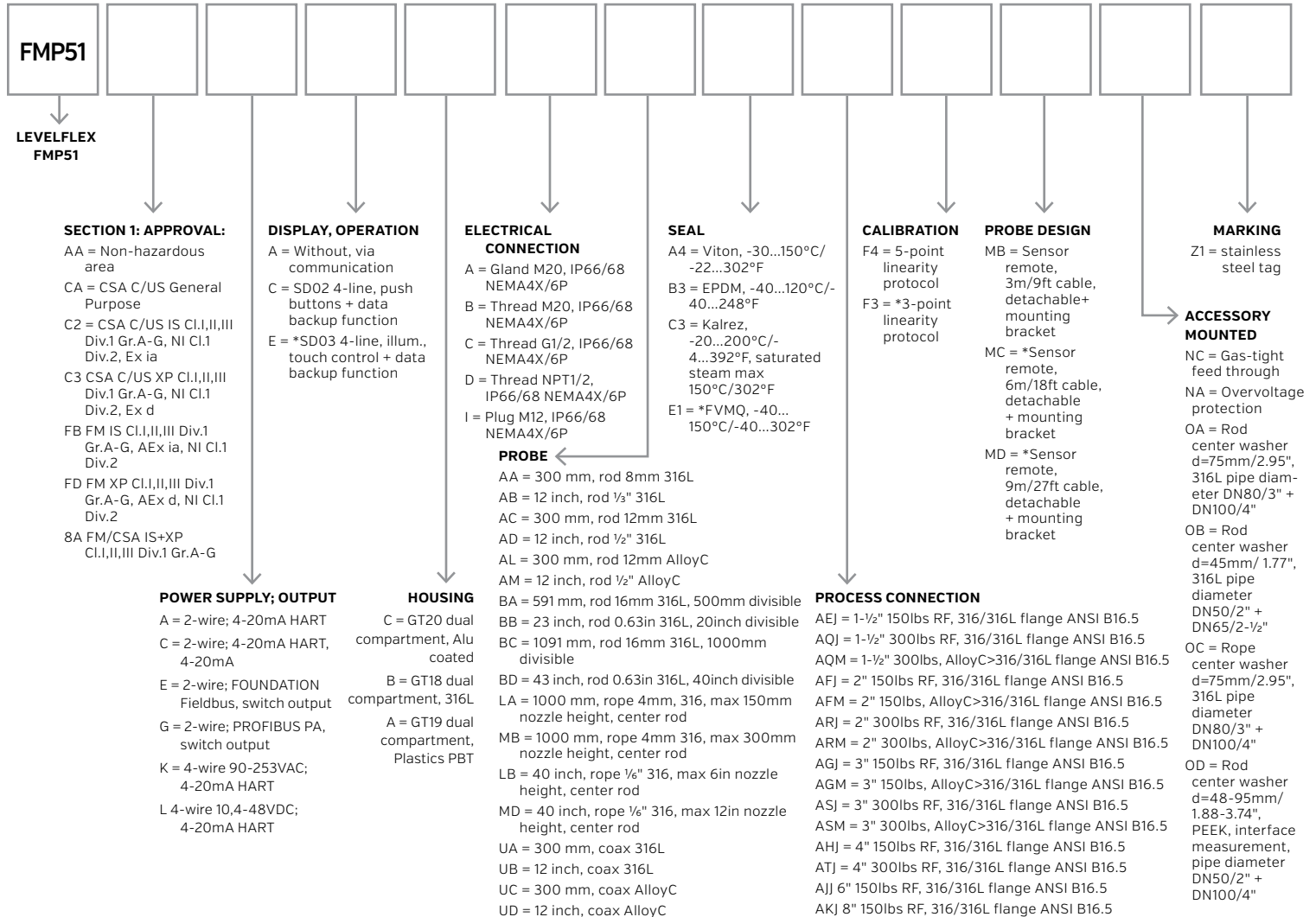
## FEATURES

<b>Process Connections</b>	Thread or flange
<b>Temperature</b>	-40 to +200°C [-40 to +392°F]
<b>Pressure</b>	-1 to +40bar [-14.5 to +580psi]
<b>Maximum measuring range</b>	Rod 10m [33ft], rope 45m [148ft], coax 6m [20ft]
<b>Accuracy</b>	±2mm [0.08"]
<b>Dielectric Constant</b>	1.6 [Rod probe, Rope probe], 1.4 [Coax probe]

International explosion protection certificates, overfill prevention WHG SIL, marine approval, 5-point linearity protocol



Endress+Hauser   
VAR PARTNER



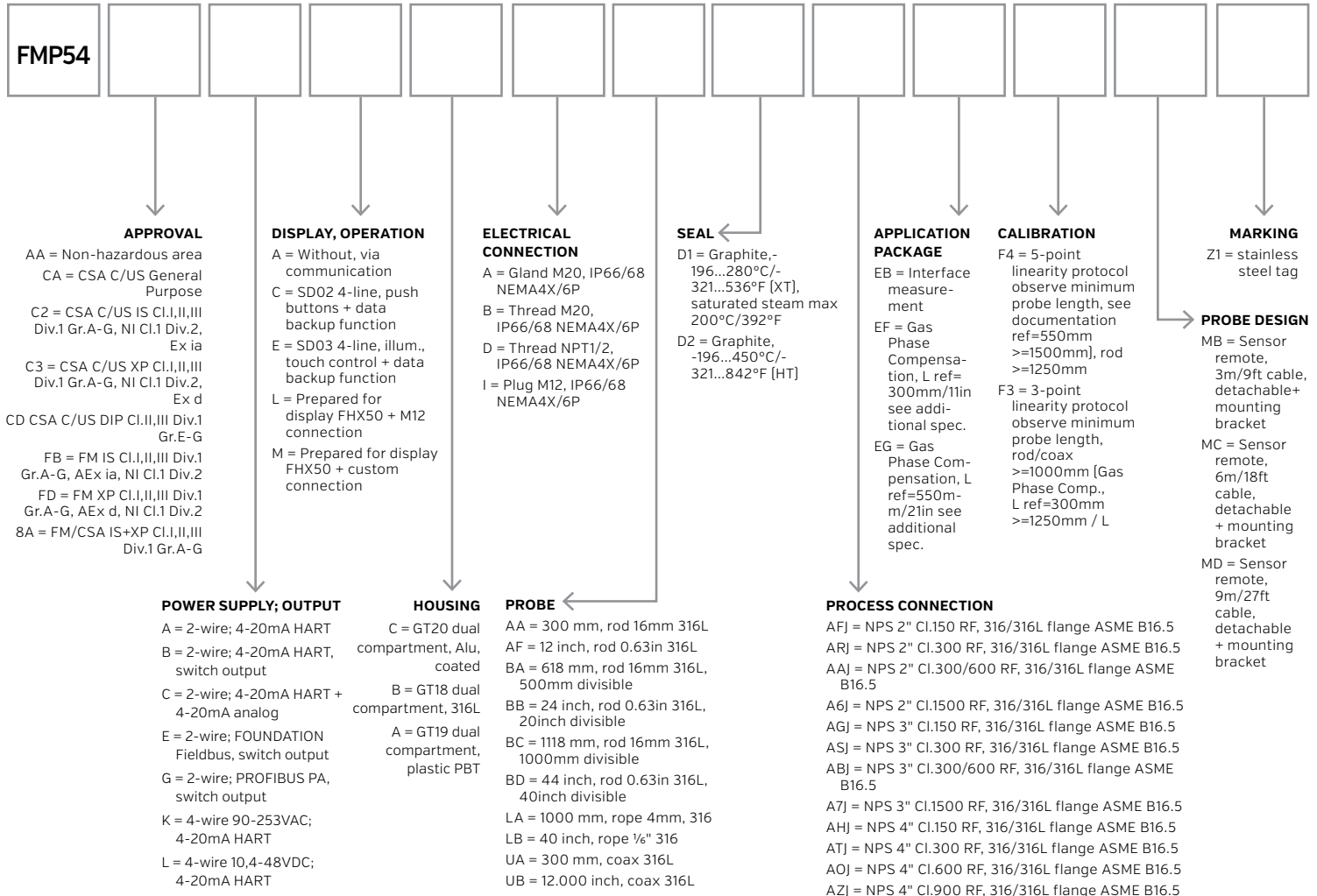
# LEVELFLEX FMP54

(G4 — OPTION IN MTP/ETP/BT/BTP)  
(DT)

Levelflex FMP54 for continuous level measurement in liquids under extreme conditions. The process connection with its ceramic-graphite seal safeguards high temperature and high pressure applications as they occur in steam boilers and toxic media like ammonia. The gas tight feed through guarantees additional safety. Only the gas phase compensation of the FMP54 gives reliable results in case of gas and steam phases. Reliable measurement in case of moving surface and foam or in changing medias.

FEATURES	
Process connections	Thread or flange
Temperature	-196 to +450°C [-320 to +842°F]
Pressure	Vacuum -1 to +400bar [Vacuum -14.5 to +5,800psi]
Maximum measuring range	Rod 10m [33ft], Rope 45m [148ft], coax 6m [20ft]
Accuracy	Rod ±2mm [0.08"]
Dielectric Constant	1.6 [Rod probe, Rope probe], 1.4 [Coax probe]

International explosion protection certificates, overfill prevention WHG, SIL, marine approval, steam boiler approval, 5-point linearity protocol



# LEVELFLEX FMP55


(G5 — OPTION IN MTP/ETP/BT/BTP)  
(DT)

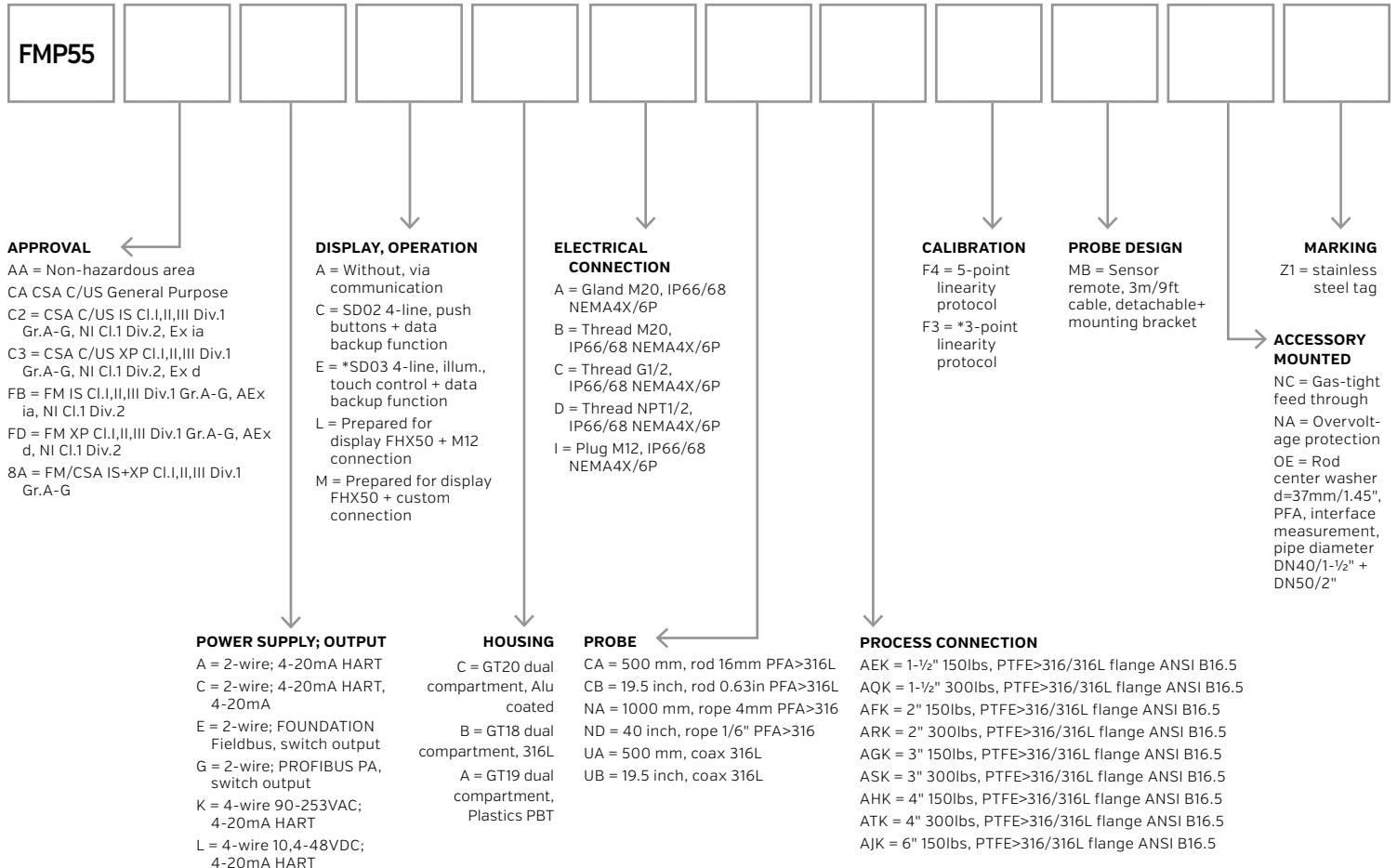
Levelflex FMP55 guided radar with SensorFusion offers the worldwide first combination of the capacitance and guided radar measuring principle in one device. The instrument guarantees safe measured value acquisition even in emulsion layers and issues level and interface layer signals simultaneously. This makes the FMP55 Multiparameter the new standard in interface measurement especially in the oil & gas, chemical and petrochemical industry.

FEATURES	
Process connections	Thread or flange
Temperature	-50 to +200°C [-58 to +392°F]
Pressure	-1 to +40bar [-14.5 to +580psi]
Maximum measuring range	Rod 4m [13ft], rope 10m [33ft], coax 6m [20ft]
Accuracy	Rod ±2mm [0.08"]
Dielectric Constant	1.6 (Rod probe, Rope probe), 1.4 (Coax probe)

International explosion protection certificates, overfill prevention WHG, SIL, marine approval



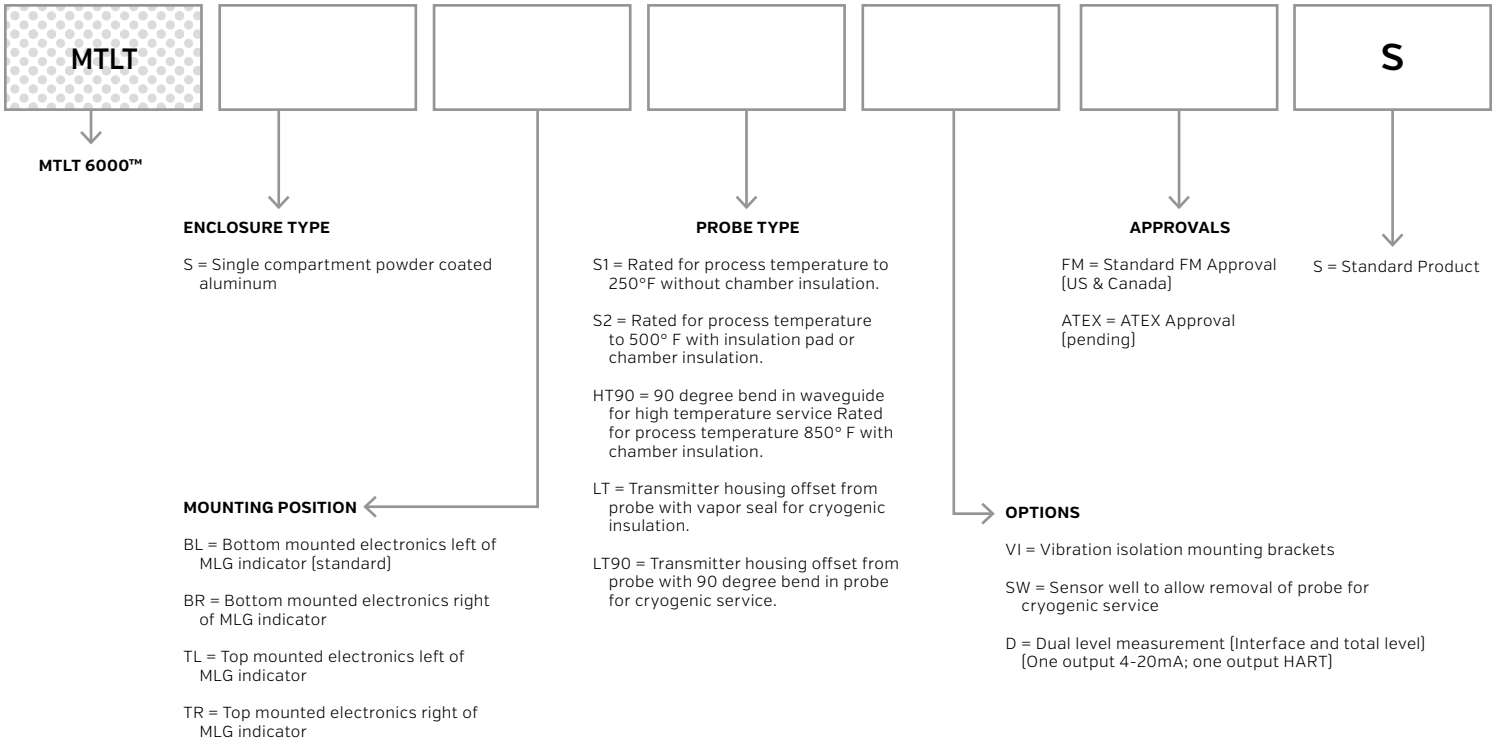
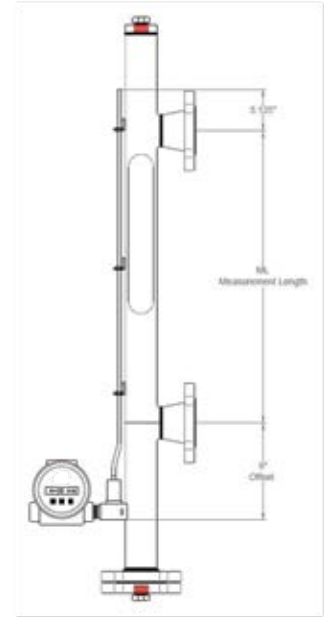
Endress+Hauser   
VAR PARTNER





# MTLT 6000

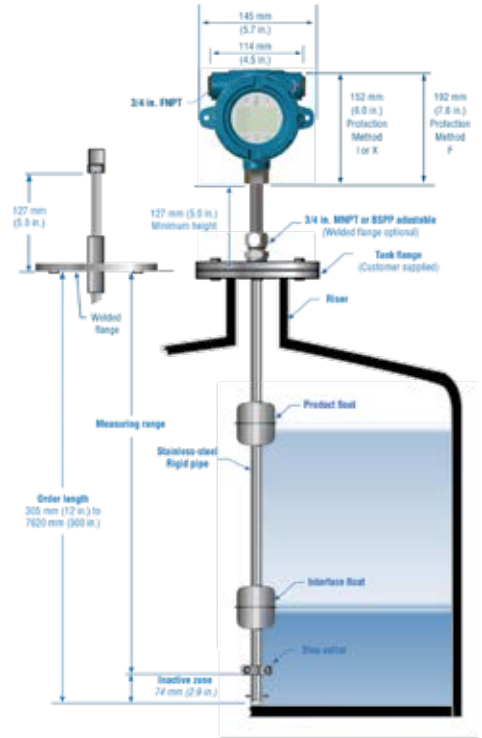
The MTLT-6000 operates based on the magnetostrictive principle. The transmitter sends fixed interval current pulses [start pulse] down the length of the sensing wire, creating an electromagnetic field. When this electromagnetic field is interrupted by the magnetic field of the float, magnetostriction occurs. A constant velocity torsional stress wave propagates along the length of the sensing wire from the position of the magnetic float. The piezoceramic sensing element converts the torsional stress to an electrical pulse [end pulse]. The transmitter electronics measures the time interval between start and end pulses and uses this time to calculate the float position.



# LEVEL PLUS REFINEME® (LPR SERIES)

**Designed for process control in industrial environments:** The Level Plus RefineME® liquid level transmitter satisfies the demand for an accurate and robust liquid-level sensor with unsurpassed flexibility to meet most process application conditions. The RefineME® transmitter provides 4-in-1 measurement using one process opening for product level, interface level, temperature and volume measurements. Once the transmitter is installed and calibrated there is no requirement for scheduled maintenance or recalibration for the expected 10 year life of the sensor.

- 4-IN-1 Measurement (Product, Interface, Temperature, Volume)
- No scheduled maintenance or recalibration
- Stainless steel, Nickel Alloy C-276, or FEP wetted parts
- Hazardous area certified
- Inherent Accuracy ±1 mm
- Set it and forget it!

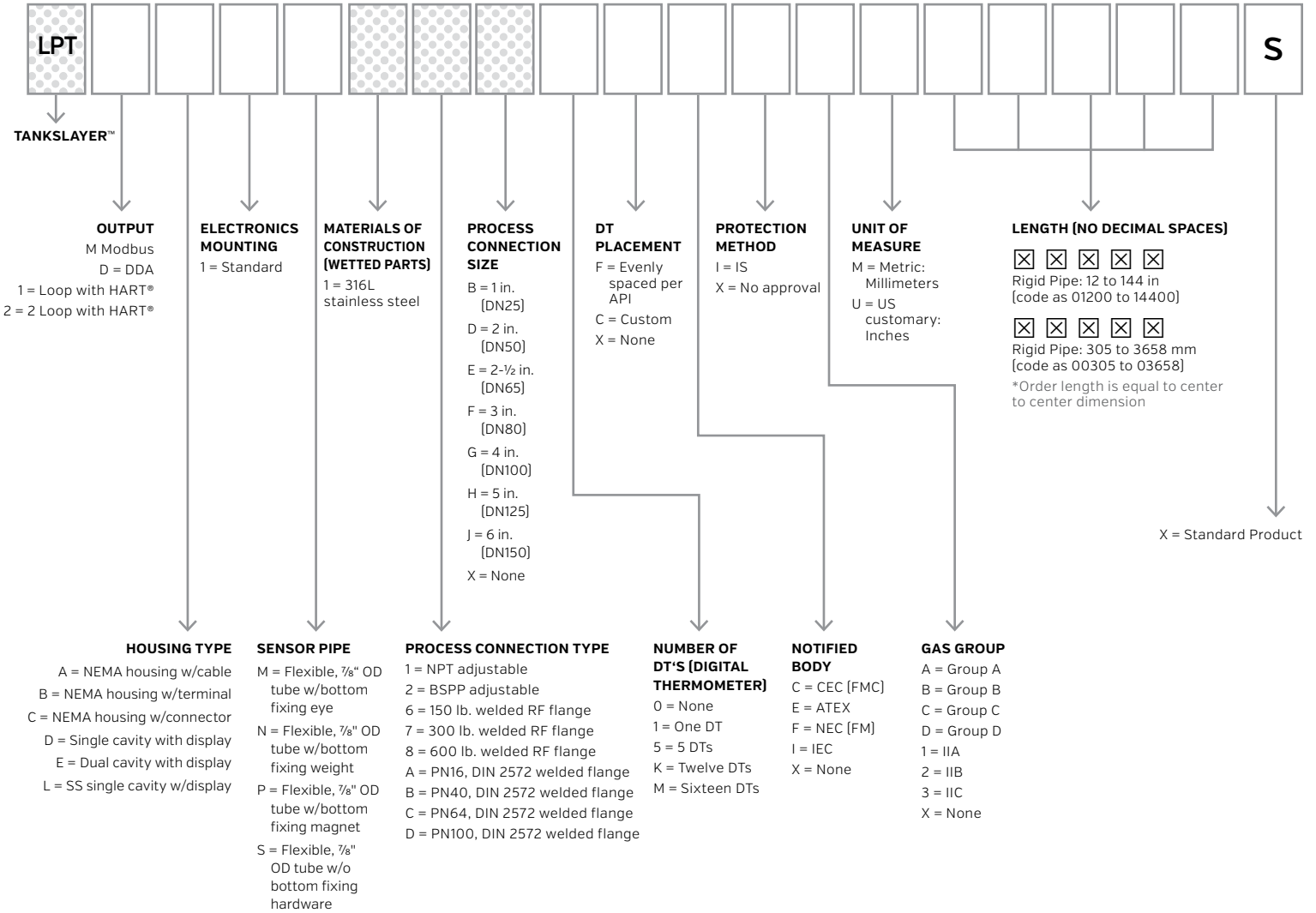
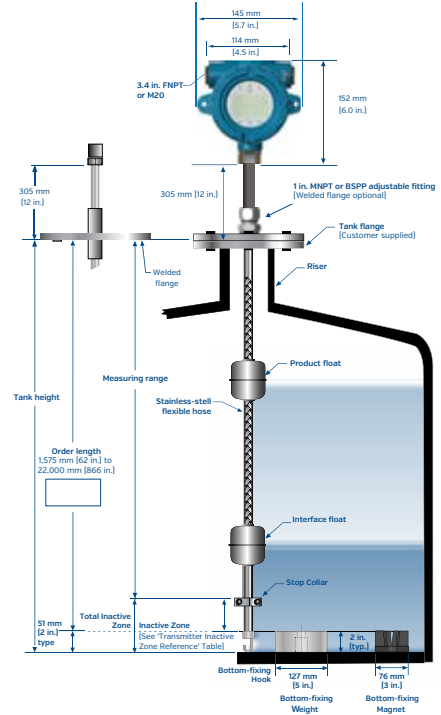


REFINEME®	OUTPUT M Modbus D = DDA  1 = Loop with HART® 2 = 2 Loop with HART® 5 = 1 Loop with HART® and SIL2 7 = 2 Loop with HART® and SIL2 Loop 1 only	ELECTRONICS MOUNTING 1 = Standard	MATERIALS OF CONSTRUCTION (WETTED PARTS) 1 = 316L stainless steel 3 = Hastelloy C A = Teflon C = CRN-Canadian Registration Number [FMC approval only] <small>Note: Contact factory for other materials</small>	PROCESS CONNECTION SIZE A = 3/4 in. [DN20] D = 2 in. [DN50] E = 2-1/2 in. [DN65] F = 3 in. [DN80] G = 4 in. [DN100] H = 5 in. [DN 125] J = 6 in. [DN150] X = None	DT PLACEMENT F = Evenly spaced per API C = Custom X = None	PROTECTION METHOD F = Explosion-proof / Flame Proof* I = Intrinsically Safe X = No approval <small>* Only for Housing Type D, E, or L</small>	UNIT OF MEASURE M = Metric: Millimeters U = US customary: Inches	LENGTH (NO DECIMAL SPACES) <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Rigid pipe: 12 to 300 in. [code as 01200 to 30000] <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Rigid pipe: 305 to 7620 mm [code as 00305 to 07620] <small>*Order length is equal to center to center dimension</small>	HOUSING TYPE A = NEMA housing w/cable B = NEMA housing w/terminal C = NEMA housing w/connector D = Single cavity with display E = Dual cavity with display L = SS single cavity w/display	SENSOR PIPE B = 5/8" OD Rigid Pipe	PROCESS CONNECTION TYPE 1 = NPT adjustable [3/4 in. only] 2 = BSPP adjustable [3/4 in. only] 6 = 150 lb. welded RF flange 7 = 300 lb. welded RF flange 8 = 600 lb. welded RF flange A = PN16, DIN 2572 welded flange B = PN40, DIN 2572 welded flange C = PN64, DIN 2572 welded flange D = PN100, DIN 2572 welded flange	NUMBER OF DT'S (DIGITAL THERMOMETER) 0 = None 1 = One DT 5 = 5 DTs K = Twelve DTs M = Sixteen DTs	NOTIFIED BODY C = CEC [FMC] E = ATEX F = NEC [FM] I = IEC X = None	GAS GROUP A = Group A** B = Group B C = Group C D = Group D 3 = IIC [Intrinsically Safe only] 4 = IIB + H2 [Explosion Proof / Flameproof only] X = None <small>** Group A not available with C=CEC [FMC] notified body and F=Flameproof/Explosion Proof protection method</small>	S  S = Standard Product
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# TANK SLAYER (LPT SERIES)

The Level Plus® Tank Slayer® liquid level transmitter satisfies the demand for an accurate and robust liquid-level sensor with unsurpassed flexibility to meet most process conditions. The Tank Slayer® transmitter provides 3-in-1 measurement using one process opening for product level, interface level, and temperature measurements. Once the transmitter is installed and calibrated there is no requirement for scheduled maintenance or recalibration. Set it and forget it!

FEATURES	
No maintenance required	Multidrop HART Communications
FM Approved Explosion Proof/IS	NEMA 4x/7 enclosures
Modular design	Adjustable output damping
Up to .001" resolution	2-wire loop powered
RFI/EMI protection	Available up to 866 inches
Process temperature range: -30	Offers a 4/20 mA 2-wire loop powered circuit for continuous level measurement



3  
in.

**Questtec** is an International Company with Representatives based throughout the world. Our Partners can assist with Commissioning Start Up and Calibration, 24 Hour Service and Repair Support.

**866.240.9906**

**IMMEDIATE HELP VIA-REMOTE MAINTENANCE**

Using the remote maintenance service TeamViewer, the Questtec service technician can assist you immediately, check the instrument configuration and perform certain analysis.



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