

MCG 1090

Level Alarm Probe

Tank farm operators, refinery engineers, chemical plant supervisors, terminal automation teams, and EPC specifiers need reliable overfill prevention and dependable alarm functionality in hazardous areas. For them, the MCG 1090 delivers proven, field-tested performance. Unlike other alarm probes, its unique true self-test design physically moves the displacer during each test, confirming both mechanical and electrical integrity rather than merely simulating signals. This ensures alarms will operate during real high-level conditions.

The MCG 1090 also supports optional remote verification from tank-side panels or the control room, minimizing site visits and improving safety. Flexible wiring, either standalone discrete outputs or multiplexing to up to 128 probes on an L&J Tankway loop, reduces installation costs while supporting new or retrofit projects. Rugged stainless-steel construction, hazardous-area approvals, and compatibility with the MCG 7030 Touch Panel Alarm Monitor make the 1090 ideal for facilities that require long-term reliability, regulatory compliance, and dependable overfill protection in demanding environments.



Key Features

True Self-Test Movement

Physically lifts the displacer to validate full mechanical and electrical operation, preventing silent failures and ensuring alarms work under real process conditions.

Explosion-Proof Safety

UL and ATEX flameproof housings meet stringent hazardous-area standards, enabling compliant operation in high-risk hydrocarbon and chemical environments.

Remote Test Capability

Optional remote self-testing allows validation from the control room or MCG 7030 monitor, reducing field labor and improving testing frequency.

Multiplexed Wiring Option

Supports up to 128 probes per tankway, lowering wiring cost and simplifying installation compared to individually wired alarm probes.

Proven Mechanical Reliability

Simplified stainless-steel construction and durable displacer design minimize wear, ensuring stable long-term performance across harsh or idle conditions.

Flexible Alarm Configurations

Supports Hi, Hi-Hi, or Lo alarm setups and multiple I/O options, adapting easily to diverse process requirements and safety architectures.

Typical Applications



OVERFILL PROTECTION

Triggers independent high or high-high alarms to prevent spills, satisfy state fire codes, and support API-2350 compliant safety layers in storage tanks.



PUMP & VALVE CONTROL

Provides reliable switching for pump shutdown or valve actuation, reducing response time and preventing equipment damage during abnormal conditions.



HAZARDOUS FLUID STORAGE

Suitable for petroleum, chemical, and solvent tanks requiring certified explosion-proof instrumentation to maintain safe, compliant operations.



REMOTE-TEST FACILITIES

Ideal for tanks in difficult-access or hazardous areas where remote self-testing ensures readiness even when probes remain idle for long periods.



EMERGENCY SHUTDOWN SYSTEMS

Integrates into shutdown logic to provide independent alarm verification, supporting facility risk-reduction and high-integrity protection layers.



IDLE OR SEASONAL TANKS

Ensures reliable operation in tanks that see infrequent use, where mechanical verification prevents unnoticed failures during long dormant periods.

Benefits



Guaranteed Functionality

True mechanical self-testing confirms complete alarm operation, eliminating silent probe failures and preventing costly or hazardous overfill incidents.



Reduced Testing Labor

Remote self-test capability minimizes manual field checks, improving safety while enabling more frequent and consistent alarm verification cycles.



Lower Installation Cost

Multiplexing through the L&J Tankway reduces total wiring volume, making large tank farms less expensive to install and maintain.



Simplified Compliance

UL and ATEX certifications ease regulatory approvals and ensure reliable deployment across global hazardous-location requirements.



Long Service Life

Rugged stainless-steel housing and robust displacer design withstand harsh environments, reducing maintenance needs and extending operational longevity.



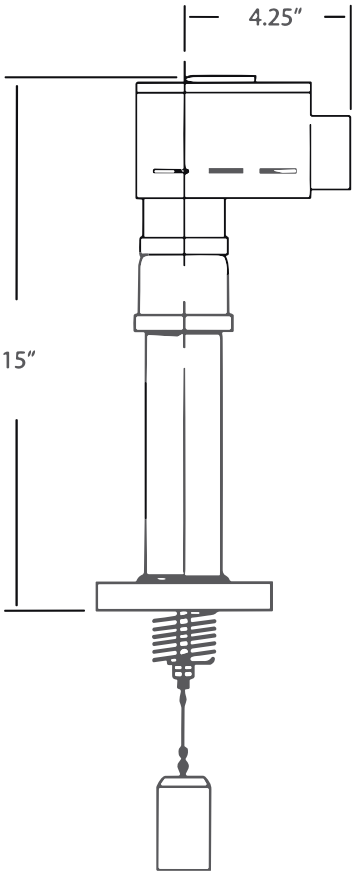
Seamless System Integration

Works directly with the MCG 7030 Touch Panel Alarm Monitor for automated testing, alarm logging, and streamlined supervisory control.

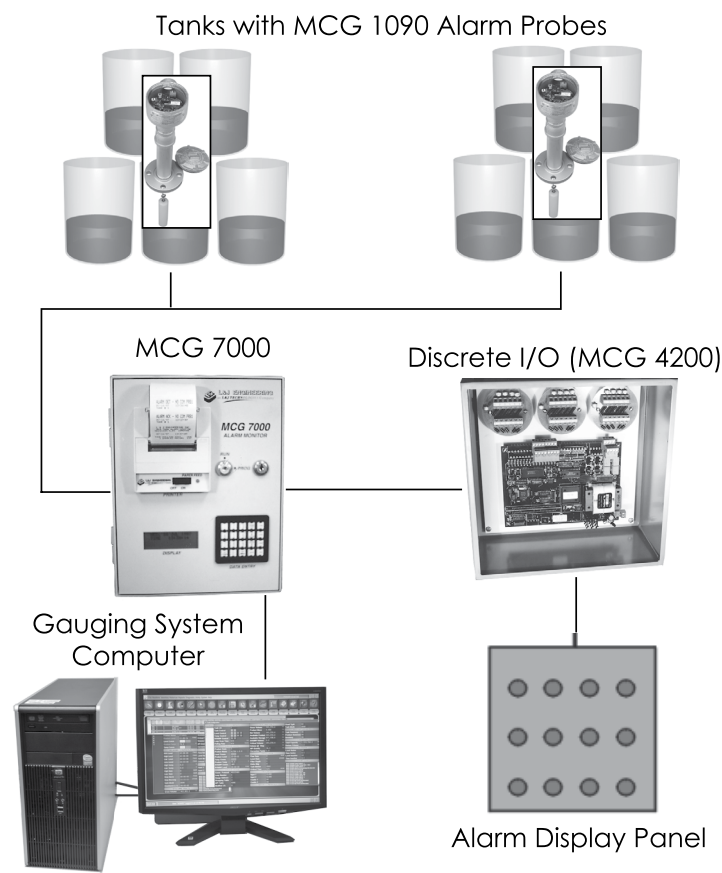
Technical Specifications & Key Features

Mounting Connection:	1.5" or 2" NPT; 2", 4", 6" flange options
Alarms:	Hi, Hi-Hi, Lo
I/O:	NC/NO, NC/NC, or L&J Tankway
Self-Testing:	Automatic (via Tankway), Manual (24VDC), or None
Construction:	304 stainless steel housing (standard), nylon displacer (other materials available)
Approvals:	UL Explosion Proof, Class I Div. 1 Groups C & D; ATEX II 1/2 G EEx d IIB T6
Dimensions:	15" length, compact footprint
Compatibility:	MCG 7030 Touch Panel Alarm Monitor for multiplexed systems (up to 128 probes)
Ordering Options:	Available in multiple body sizes, cable lengths (10 ft to 30 ft), stainless steel options, and displacer configurations for specific gravity ranges from 0.50 to 1.0

Dimensions



Typical System Layout



MCG 1090 Level Alarm Probe

Includes: Probe, Displacer, 10 Ft. (3 m) of 302 S.S. Cable. Special longer cables available at an additional cost per foot and/or meter. Please specify actual cable length. Standalone outputs provided by Dry Contacts.

Model Number Selection:

The model number will consist of a base number MCG 1090 followed by 10 digits. These digits will represent 6 option tables:

MCG 1090 - AB - CD - EF - GH - IJ

AB – Body Size / Length	
10	1.5" body; 10 ft. (3 m) of 302 S.S. Cable
12	1.5" body; 30 ft. (9.1 m) of 302 S.S. Cable
21	2.0" body; 10 ft. (3 m) of 302 S.S. Cable
22	2.0" body; 30 ft. (9.1 m) of 302 S.S. Cable
31	1.5" body; 10 ft. (3 m) of 316 S.S. Cable
32	1.5" body; 30 ft. (9.1 m) of 316 S.S. Cable
41	2.0" body; 10 ft. (3 m) of 316 S.S. Cable
42	2.0" body; 30 ft. (9.1 m) of 316 S.S. Cable

C – Body	
(All Stainless Steel Flanges Welded, unless otherwise specified)	
0	Special
2	1.5" 304 Stainless Steel Body
3	2.0" 304 Stainless Steel Body
4	1.5" 304 Stainless Steel Body - No Silicone
5	2.0" 304 Stainless Steel Body - No Silicone

D – Connections	
(All Stainless Steel Flanges Welded, unless otherwise specified)	
1	1.5" NPT (No Flange)
2	2.0" 300 lb. RF Flange (304 Stainless Steel)
3	2.0" NPT (No Flange)
4	1.5" 300 lb. RF Flange (304 Stainless Steel)
5	6.0" 150 lb. RF Flange (304 Stainless Steel)
6	2.0" 150 lb. RF Flange (304 Stainless Steel)
7	4.0" 150 lb. RF Flange (304 Stainless Steel)
8	6.0" 300 lb. RF Flange (304 Stainless Steel)
9	4.0" 300 lb. RF Flange (304 Stainless Steel)

GH – I/O Configuration	
Options 01, and 21, can <u>only</u> be used with Table III options 03, 04, 33, 34. (Standalone) options 02 can <u>only</u> be used with Table III options 01, 02, 31, 32.	
01	NC/NO Switch Configuration (Standalone)
02	L&J Tankway (Standard)
21	NC/NC Switch Configuration (Standalone)

EF – COMM. TYPE/CHECKER/AGENCY APPROVAL	
01	L&J Tankway – No Remote Checker, (UL)
02	L&J Tankway – Remote Checker, (UL)
03	Standalone (24VDC), No Remote Checker, (UL)
04	Standalone (24VDC), Remote Checker, (UL)
31	L&J Tankway – No Remote Checker, (ATEX)
32	L&J Tankway – Remote Checker, (ATEX)
33	Standalone (24VDC), No Remote Checker, (ATEX)
34	Standalone (24VDC), Remote Checker, (ATEX)

I J – DISPLACER SIZE AND CONFIGURATION	
00	1.5" Nylon Single Displacer (S.G.: .65-1.0)
01	1.5" Nylon Dual Displacer (S.G.: .65-1.0)
04	1.5" Nylon Single Displacer (S.G.: .50-.80)
05	1.5" Nylon Dual Displacer (S.G.: .50-.80)
20	1.5" 316 S.S. Single Displacer (S.G.: .65-1.0)
21	1.5" 316 S.S. Dual Displacer (S.G.: .65-1.0)
24	1.5" 316 S.S. Single Displacer (S.G.: .50-.80)
25	1.5" 316 S.S. Dual Displacer (S.G.: .50-.80)

S.G. = Specific Gravity Range of Product)

Summary

With over 100 years of experience in tank safety and gauging, L&J provides the most reliable overfill protection solutions worldwide. The MCG 1090 stands out by delivering true self-testing technology, remote verification, and global safety certifications — ensuring operators gain peace of mind, lower operating costs, and uncompromised compliance.

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This document is for information purposes only. All designs subject to change. Certified dimensions, specifications, and performance data available upon request