

Overfill Prevention System for Bottom Loading Vapour Recovery Road Tankers



Installation instructions & Certification

EMICO
WHEATON
by Gardner Denver



MARINE

RAIL

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OVERFILL PREVENTION SYSTEM PROBE F2020251 (15")



PROBE (CANE)

Available in 7" (135 to 180mm), 12" (278.752 to 325.25mm) and 15" (355 to 400mm) lengths. Other lengths available to order.

Fast response optic sensor detection.

Borosilicate glass prism resistant to fuels and solvents.

Two gland ports with M20x1.5 threads (PG16 and NPT threads available as options)

ATEX Certified probe for use in zone zero flammable hazard area with group IIA gas

Probe also available for sale as an aftermarket product

SAFETY & INSTALLATION INSTRUCTIONS 2 WIRE OPTICAL OVERFILL SENSOR SYSTEM

The F2020200 series Probe is designed for use as a high level sensor in petroleum tank trucks and forms part of an overfill system that operates as per EN 13922:2011.

This device is for use in potentially explosive atmospheres as per ATEX 94/9/EC.

It is manufactured in compliance with the requirements of current European standards EN60079-0 EN60079-11 and EN60079-26.

It is certified as a Group II Category 1G for the use in potentially explosive atmosphere Zone 0. The certificated protection level is: Ex ia IIAT5 Ga.

It shall be only powered by intrinsically safe supply from a controller as per requirements of EN13922:2011.

It shall only be installed by authorized and trained personnel.

OVERFILL PROTECTION SYSTEMS

SAFETY & INSTALLATION INSTRUCTIONS 2 WIRE OPTICAL OVERFILL SENSOR SYSTEM

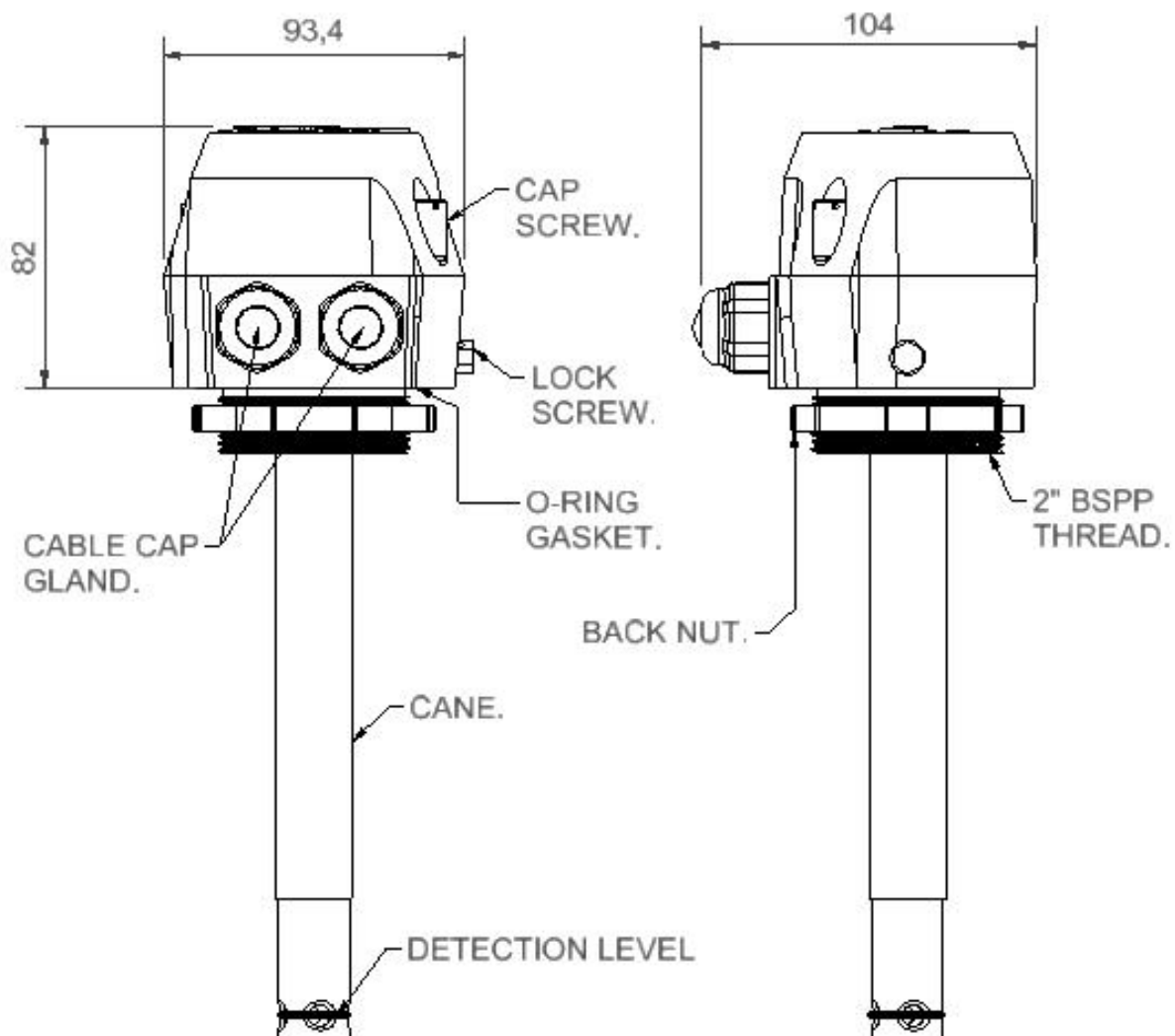
PROBE INSTALLATION (Fig.1)

The sensor should be installed in a 61mm diameter hole in a plate with maximum thickness 12mm and secured using the O-Ring gasket and locknut supplied. A medium strength thread lock adhesive such as Loctite Nutlock shall be used to secure the locknut. The sensor may be located in the manhole cover, or directly on to a suitable pan on the tank top

SENSOR HEIGHT ADJUSTMENT (Fig.1)

In order to adjust the liquid detection point level setting, unlock the cane by removing the lock screw. Vertical movement of up to 45mm is possible. The detecting point should be determined by allowing for the total response time required to prevent a tank overflow condition and/or as local regulations specify. There is an engraved line on the lens housing that signifies the liquid sense level. After the adjustment is done, the fixing screw must be tightened.

The cane can also be shortened by removing the tube at the wire end. To shorten remove plastic cable bush and use a pipe cutting tool taking extreme care not to damage wires in any way. Remove burrs and sharp edges from the newly cut end and refit plastic cable bush. Wires can be shortened except for the wire with a label as it must be retained.



**BOTTOM SOCKET BOX
OVERFILL PREVENTION SYSTEM
F2035100-SI**

ISOMETRIC VIEWS

SECTION A-A

Orthographic Views:

- Top View:** Dimensions 155 (width) and 140 (depth). Shows mounting holes and internal wiring.
- Front View:** Dimensions 210 (height) and 111 (width). Shows the front panel with mounting holes and a central lock mechanism.
- Side View:** Dimensions 140 (height) and 111 (width). Shows the side profile of the cabinet.

Parts List Table:

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	675014	HLCO SOCKET CAP (GREEN) ASSY
2	4	610239	M6x1mm LG CAP HD. SCREW
3	2	672089	M8 x 19mm LG HEX. HD. SCREW S.S.
4	1	675603	HOLDSING MC-SOCKET CAB
5	1	675605	LID M/C-SOCKET CAB
6	1	675702	16.0 DIA BLANKING PLUG
7	2	675701	5 DIA BLANKING PLUG
8	1	670038	HLCO M20 GLAND NUT & CAP
9	1	671600	HLCO SOCKET BASE SEAL
10	1	675028	HLCO PRESSURE SWITCH
11	1	675773	GROUND PLATE
12	1	F2000300	HLCO DUMMY
13	4	671170	SCREW M5x12 PANHEAD POZI
14	1	616745	SWIVEL ELBOW M5 X 6MM PIP
15	2	419606	M3 x 10 Hex Socket Head Screw
16	2	600112	M3 NYLOCK NUT
17	3	618329	6MM X 6MM PIP Bulkhead Connector
18	1	674687	HLCO INTERLOCK
19	1	674688	HLCO SOCKET FRONT PLATE (M) 10 PIN 4 J SLOT
20	3	H49655-00000102	ELBOW 6mm SPI/GT x 4mm PIP
21	1	H70004006332	TUBE 4 MM NYLON BLUE

Title Block:

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OPS CABINET SOCKET 2W WINTERLOCK

Part Number: F20351000-SI

Revision: 0



SECTION A-A

Technical drawing of the 1000W power supply unit, showing front, top, and side views with numbered callouts 1 through 10.

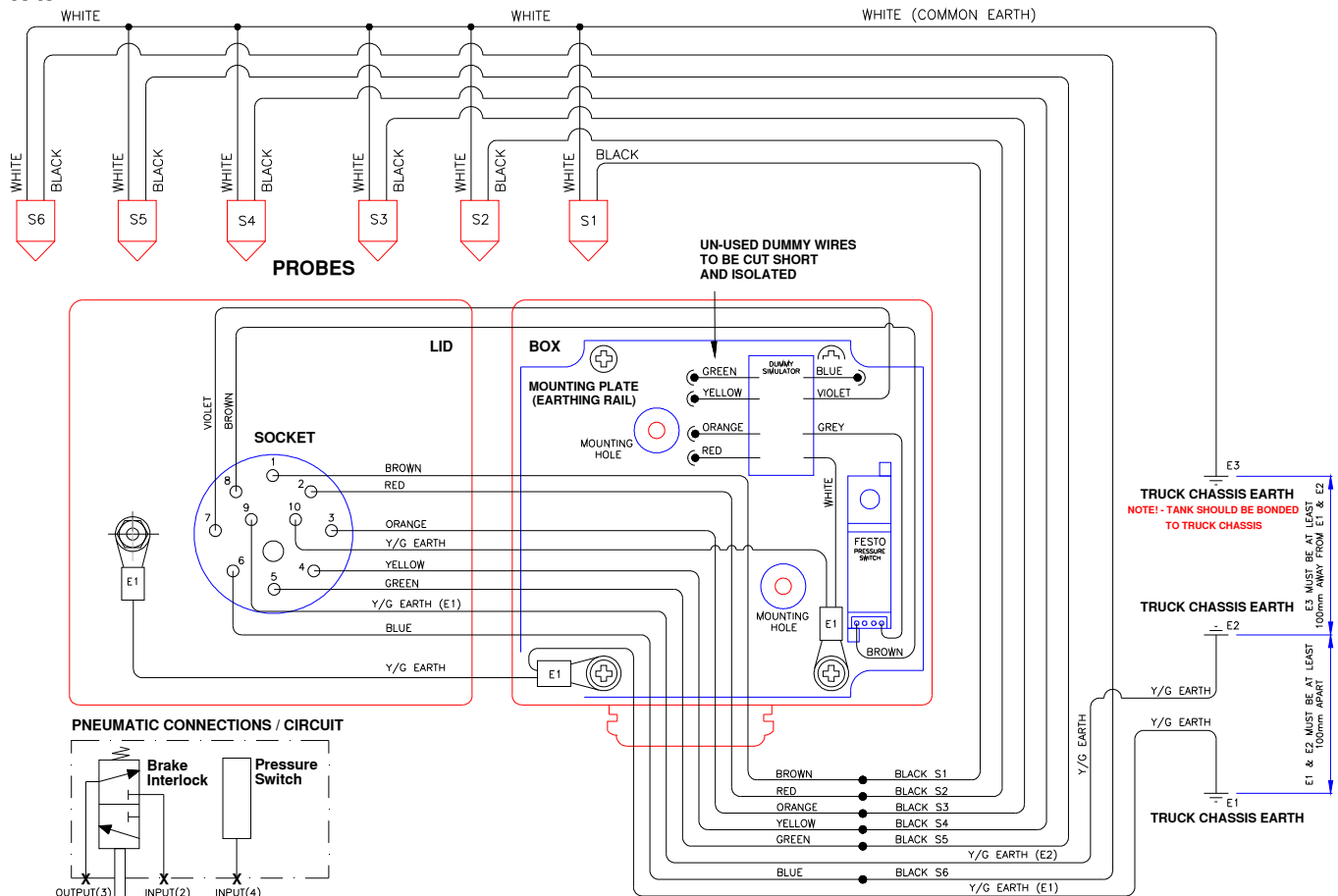
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SAFETY & INSTALLATION INSTRUCTIONS 2 WIRE OPTICAL OVERFILL SENSOR SYSTEM



WIRING INSTALLATION

The Bottom Socket assembly is supplied with the Dummy Simulator pre-wired. The White wire from the Dummy is connected to common earth (See circuit below). Coloured wires are connected to unused plug pins to simulate missing compartments to make up to a 7 compartment system in total.



See page 7 for larger copy of circuit drawing above

The Bottom Socket assembly is supplied with the Dummy Simulator pre-wired.

NOTE! – E1, E2 & E3 (Truck Chassis Earths) must be at least 100mm apart as shown above.

E1 - Connect pin 10 to the truck chassis as shown above.

E2 - Connect pin 9 directly to the truck chassis as shown above.

E3 - Connect 'White' common earths from each probe to the truck chassis as shown above.

Connect 'Black' wire from probe S1 to pin 1 as shown above. **Remove Dummy wires as required and replace with 'Black' probe wires S2 – S7. Un-used Dummy wires should be cut short and isolated.**

Operating Conditions: Working Temperature Range: -40°C to +60°C

IS ATEX Marking: CE 0038 Ex II 1 G Ex ia IIA T5 Ga Ta-40°C /+60°C

OVERFILL PROTECTION SYSTEMS

OVERFILL PREVENTION SYSTEM F2020 Overfill Prevention Sensor

EC Declaration of Conformity

The manufacturer:

Emco Wheaton
Channel Road
Westwood Industrial Estate
Margate
Kent CT9 4JR

Declares that the product:

F2020-200 Overfill Prevention Sensor

Based on the EC – Type Examination Certificate: LOM14ATEX2010

Complies with the ATEX Directive 94/9/EC, Annex III

Quality Assurance Notification (Number: 0038/ATEX/20040003/B complying with Annex VII (Module E) of the ATEX Directive 94/9/EC has been issued by:

Lloyds Register
Hiramford
Middlemarch Office Village
Siskin Drive
Coventry CV3 4FJ

Notified Body Number: 0038

Emco Wheaton
Margate Kent UK March 2014



OVERFILL PREVENTION SYSTEM

F2020300 Dummy Simulator

EC Declaration of Conformity

The manufacturer:

Emco Wheaton
Channel Road
Westwood Industrial Estate
Margate
Kent CT9 4JR

Declares that the product:

F2020-300 Dummy

Based on the EC – Type Examination Certificate: LOM14ATEX2009

Complies with the ATEX Directive 94/9/EC, Annex III

Quality Assurance Notification (Number: 0038/ATEX/20040003/B complying with Annex VII (Module E) of the ATEX Directive 94/9/EC has been issued by:

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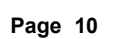


Daniel Lewington
Manager Engineering



CIRCUIT DIAGRAM

OVERFILL PREVENTION SYSTEM



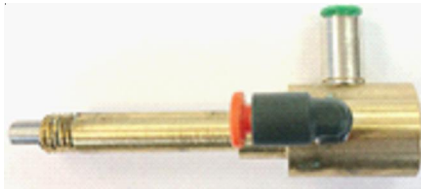
OVERFILL PROTECTION SYSTEMS

Spares for Bottom Socked Box F2035100-SI

OPS - 10 Pin Socket & Front Plate only - Part No. 674968



OPS - Brake Interlock Valve - Part No. 674987



OPS - Socket Cap - Part No. 675014



OPS – Pressure Switch - Part No. 675029



OPS – Dummy - Part No. F2020300

