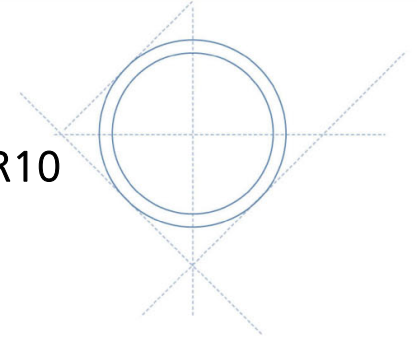


EMCO Reflex Liquid Level Gauges Series ER10 Pressure Rating: PN 40/300 lbs



Principle

EMCO liquid level glass gauges are designed for direct observation of liquid levels in vessels, drums and other tanks where direct dependable observation is required for design pressure ratings up to PN 40, 300 lbs

Application

EMCO reflex liquid level gauges are used for observation of the liquid level the liquid, interface between two have a single glass with a prism on the wet side.

The day light is refracted in the prism when liquid is present and the liquid level is presented as a dark or black column.

Fluids corrosive or erosive to the glass must be avoided.

Above the liquid level the light will be returned and a clear bright view will appear.

Material is sourced from approved manufacturers to meet specific customer Requirements and general material standards like Norsok M-630, Quality Track Record (QTR) in accordance with M-650 can be provided.

Construction

The EMCO reflex liquid level gauge type ER10 consists of 3 main parts: The process chamber, the glass and the cover. the size of the chamber is 40 x 40 mm, the cover is 80 x 30 mm.

The liquid chamber and cover are made from solid bar stock.

The cover may be selected in a less exotic material than the process chamber.

The gauge glass is toughened borosilicate glass with high resistance to thermal shock.

The glasses have narrow manufacturing tolerances with high degree of flatness

The glasses are delivered in 9 lengths.

The EMCO reflex liquid level gauges consist of one solid process chamber and one or more sections.

When more than one section is required there is a blind distance between the sections.

The length of this blind distance is 40 mm.

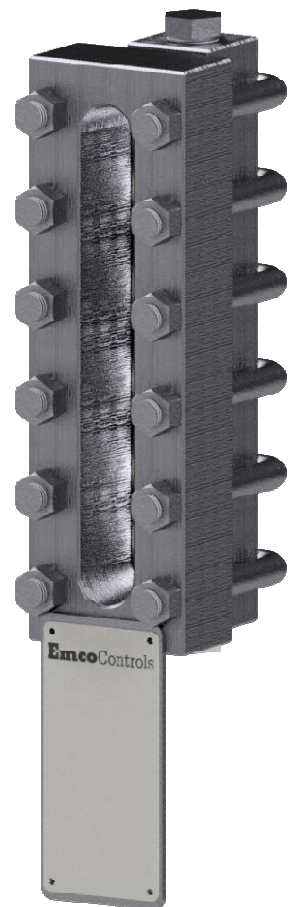
If full visual liquid level is required sections are mounted off set. See type ER11

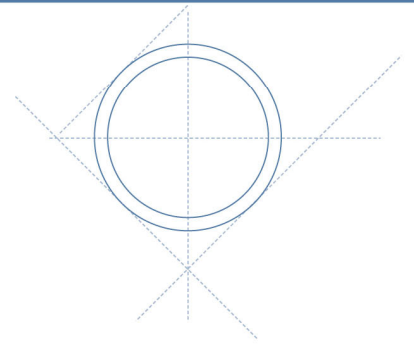
If welding is part of the delivery this is performed in house using certified WPQR and WPS.

Pressure Equipment Directive 2014/68/EU

The EMCO liquid level gauges are fully in compliance PED 2014/68/EU

The volume and the small sized pipes mean that the EMCO glass level gauge falls under Article 3, Paragraph 3, also known as SEP (Sound Engineering Practice) therefore, the level gauges shall not and must not be CE marked



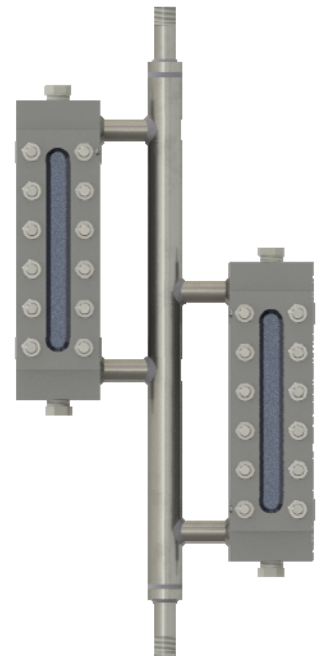


Certification

EMCO Controls is certified to ISO 9001-2008 and EN-3834-2

Technical Data

Sizes	: visual length from 95 to 2480 mm.
Material, chamber	: carbon steel A105 or A350 LF2, A182 F5 or F9, AISI 316, 22Cr duplex, 25Cr duplex, 6Mo, Titanium, Hastelloy B and C, Monel 400.
Material, gasket	: general purpose fibre, Graphoil, pure PTFE, glass fibre reinforced PTFE.
Material, glass	: toughened borosilicate glass to DIN 7080/7081, other standards on request.
Pressure	: max 40 bar, consult pressure/temperature tables for selected material
Temperature	: max 400 °C., consult pressure/temperature tables for selected material
Connection style	: threaded, NPT or BSP, weld ends or flanges to ANSI/ASME, DIN or EN1092-1 standards.
Connection sizes	: ½", ¾".
Connection positions	: top and bottom, left or right hand side.



Type ER11

Accessories

Straight or off set shut off valves with ball check if required, drain and vent valves.

Heating or cooling tubes for maintaining a desired fluid temperature

Non-frosting transparent acrylic resin plate for temperature below 0°C.

Plate height:

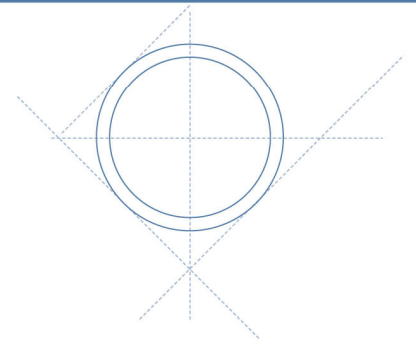
-49 to 0°C: 80 mm, -99 to -50°C: 150 mm, -100°C and below: 200 mm

Gauge scales with graduation in percentage or physical units

For remote indication EMCO liquid level gauges can be supplied with level transmitter integrated in the level gauge or in a separate chamber connected to the level gauge.

The measuring principle is guided wave.

The output signal is 4 – 20 mA and HART, other communication protocols on request.



Documentation

Dimensional drawing, material certificate, QTR, pressure test certificate, Certificate for sour service to NACE MR-01-75/ISO 15156, PMI test, NDT of welding (if any) to EN, ASME or NORSOK M-601 standards.

Dimensions

	Visual length	length of chamber	length of glass
1x1	95 mm	140 mm	115 mm
1x2	120 mm	165 mm	140 mm
1x3	145 mm	190 mm	165 mm
1x4	170 mm	215 mm	190 mm
1x5	200 mm	245 mm	220 mm
1x6	230 mm	275 mm	250 mm
1x7	260 mm	305 mm	280 mm
1x8	300 mm	345 mm	320 mm
1x9	320 mm	365 mm	340 mm
2x3	330 mm	375 mm	
2x4	380 mm	425 mm	
2x5	440 mm	485 mm	
2x6	500 mm	545 mm	
2x7	560mm	605 mm	
2x8	640 mm	685 mm	
2x9	680 mm	725 mm	
3x6	770 mm	815 mm	
3x7	860 mm	905 mm	
3x8	980 mm	1025 mm	
3x9	1040 mm	1085 mm	
4x7	1160 mm	1205 mm	
4x8	1320 mm	1365 mm	
4x9	1400 mm	1445 mm	
5x7	1460 mm	1505 mm	
5x8	1660 mm	1705 mm	
5x9	1760 mm	1805 mm	
6x8	2000 mm	2045 mm	
6x9	2120 mm	2165 mm	
7x8	2340 mm	2385 mm	
7x9	2480 mm	2525 mm	

First digit indicates number of sections, second digit indicates glass size.