

KDG

Mersey series self-powered contents gauges

Data sheet
0018

Features

- For marine applications
- Accepted by major classification societies
- Completely automatic
- No floats or probes
- Calibration to suit user's requirements
- Models to suit most requirements
- Requires no external power

Widely used to measure

Ballast	Slurries
Water (fresh and salt)	
Gas oil	Sludge
Deisel oil	Flume tanks
Lubricating oil	
Aviation service tanks	
Condensate tanks	
Heavy fuel oil	
Foam tanks (fire fighting)	



Description

The Mersey Series hydrostatic tank contents gauge has long been considered as one of the most reliable forms of tank gauging equipment available. The instrument will indicate continuously the liquid contents of any shape of storage tank, and display the data at considerable distances from the tank. The Mersey Series can be supplied with either an internal or external tank mounting transmitter plus a comprehensive range of bulkhead plates which allow the passage of capillary through oil and watertight compartments. In addition a special isolating maintenance valve assembly is available for external transmitters.

The Mersey Series hydrostatic tank contents gauges derives its power for operation from the pressure exerted by the head of liquid within the tank. The pressure is sensed by a stainless steel diaphragm set into the transmitter and conveyed by a predetermined length of gas-filled capillary to a diaphragm within the indicator which, by means of a precision mechanism, rotates a point over a calibrated scale. The transmitter, capillary

and indicator together form a sealed system which prior to being charged with an inert gas is thoroughly examined for leaks on electronic leak detection equipment.

Indicators have been designed to provide clear, easy to read data and are offered in a range of sizes from 4 to 12 inch diameter. Dials are graduated in units to meet the user's requirements and are often marked with radial lines to denote critical levels at various specific gravities. In may instances, dual scale callibration can be offered.

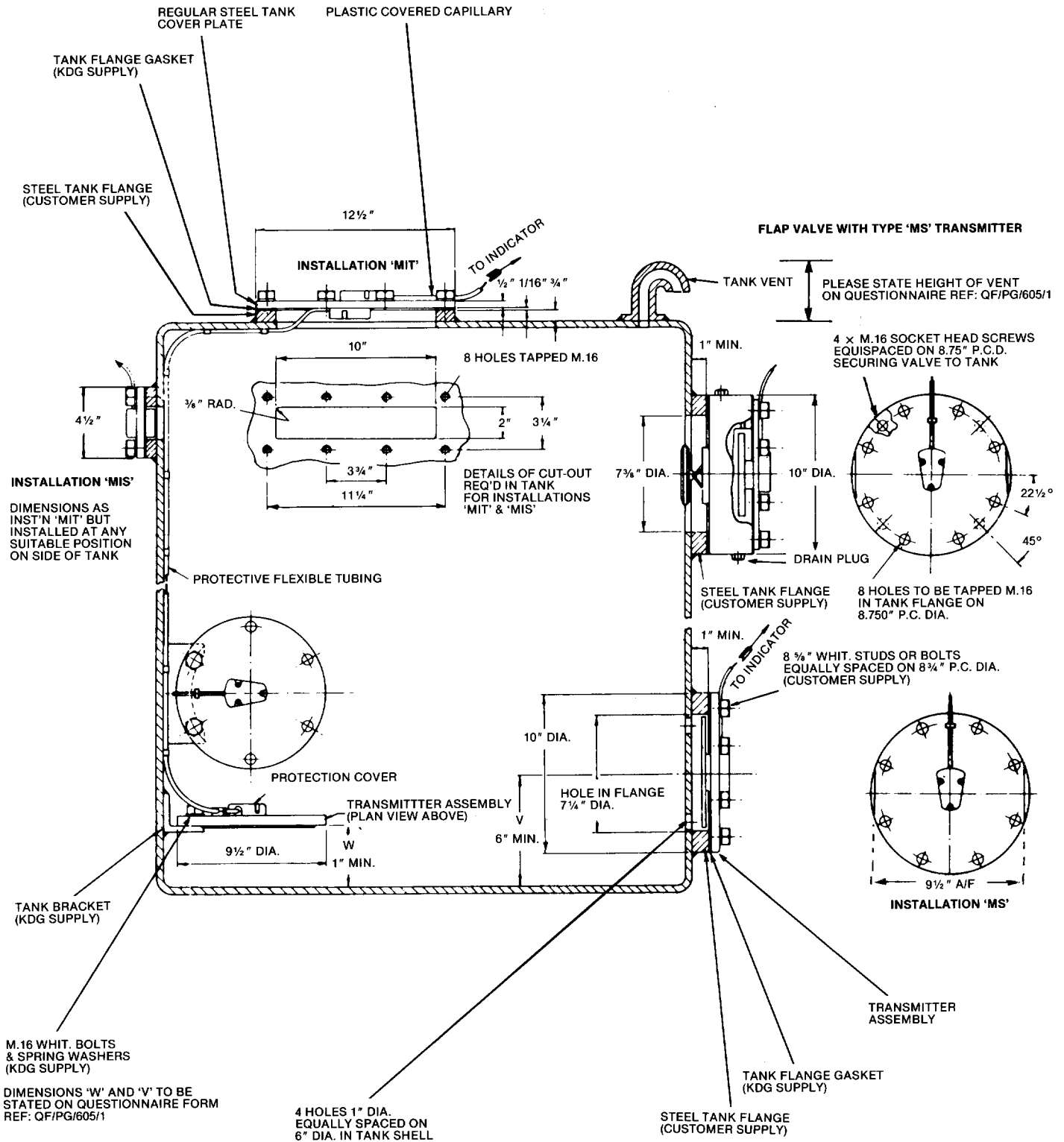
Operational Data (reference conditions)

Maximum Error	At reference conditions, maximum error will not exceed $\pm 1.0\%$ of full scale deflection.
Ranges	See ordering information.
Temperature coeffecients	Zero shift : 0.15 per cent per °C between the limits +20°C to +55°C.
Range change	0.075 per cent per °C between the limits +20°C to +55°C.
Weatherproof protection	Polyrad IP65 to BS5490
Operating temperature	+20°C to +55°C as standard. (Ranges down -20°C and up to +100°C toorder)
Humidities	Indicators : 5% to 95% RH
Overload	Normally 25% above maximum range but protection is also given to maximum height of fill or vent pipe above tank.
Tank depths	From 1 to 32 metres (at S.G. 1.0).

Construction Data

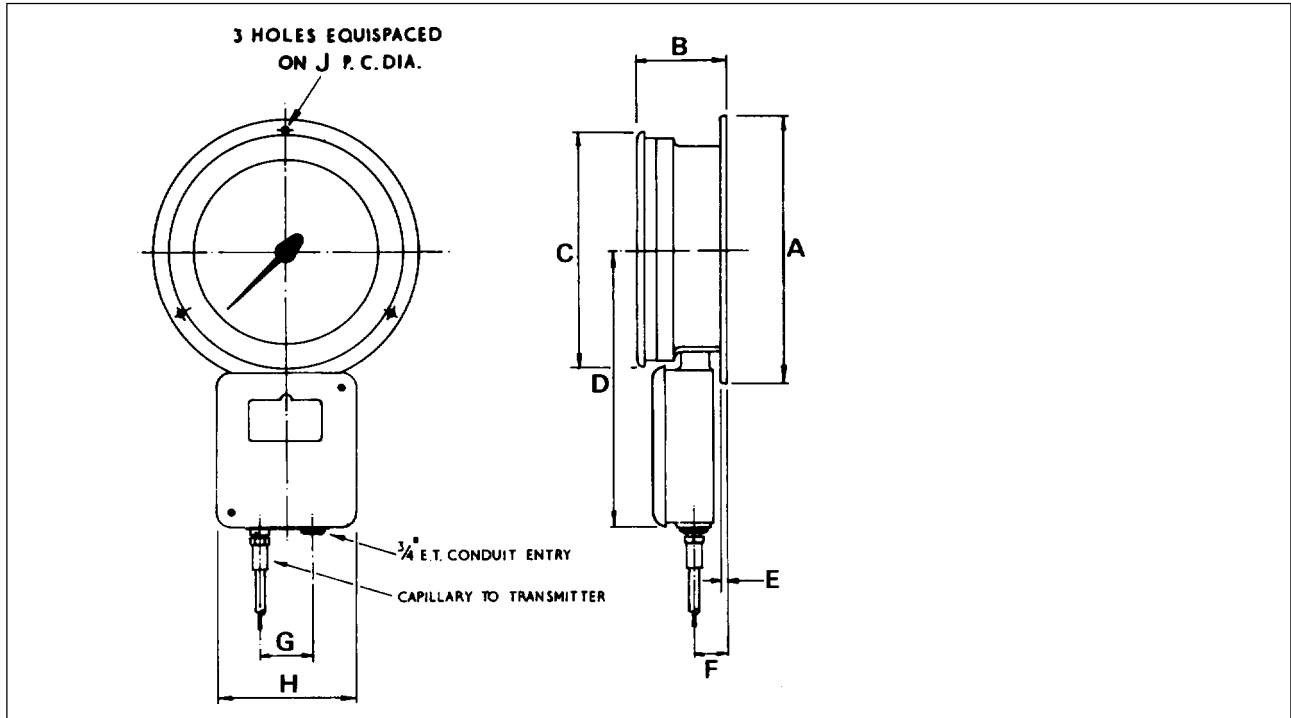
Transmitter	Standard transmitters comprise a stainless steel diaphragm soft soldered into a corrosion protected mild steel plate. The external (Type MS) transmitter can also be supplied with a PTFE mask (Type MSF)
Indicators	Mounting - wall or flush panel. Diameters - 4, 6, 7, 12 inch and 150mm. Construction - 4, 6, 7 and 12 inch diecast aluminium alloy, 150mm glass loaded polyester with polycarbonate window and bezel.
Weight (approx.)	External transmitter (MS) with 3 metres of capillary and 7 inch indicator 11 kg. As above with internal (MIT) transmitter 14.5kg
Calibration	Individually calibrated to customer's requirements.
Standard accessories	Chrome bezel.

Outline/Installation dimensions



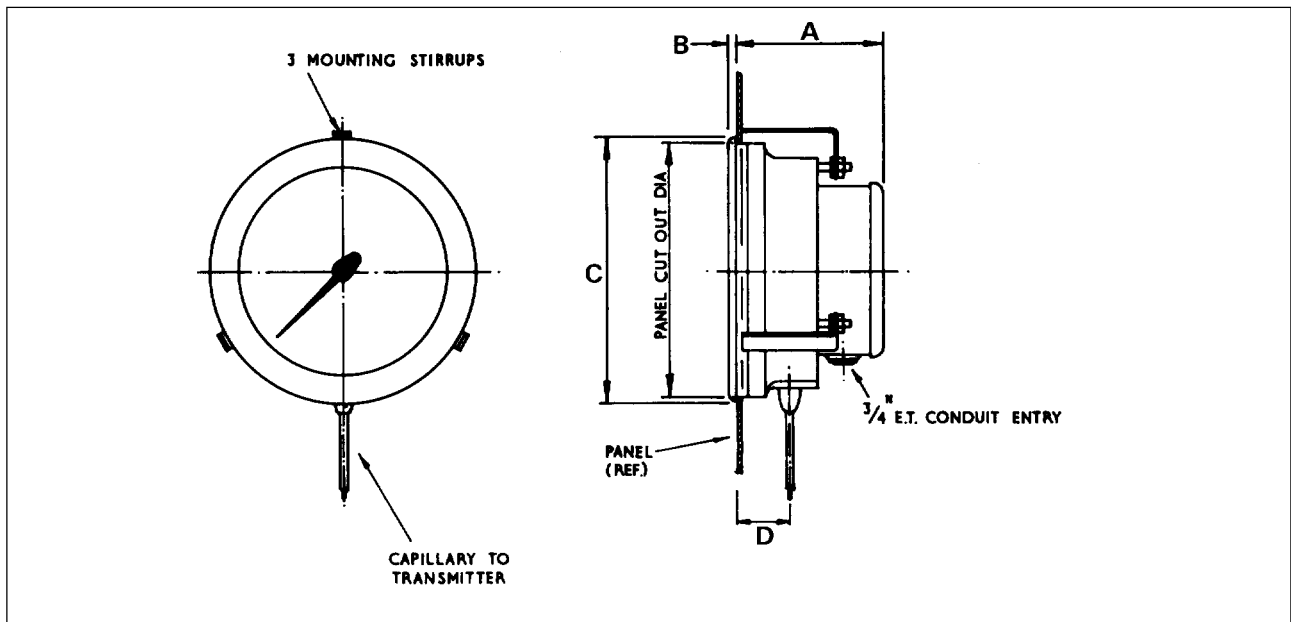
Outline/Installation dimensions

Wall mounting controller indicators



	A		B		C		D		E		F		G		H		J	
Size	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
7"	9.75	248	3.23	82	8.63	219	10.06	256	0.31	8	1.25	32	1.88	48	5.0	127	8.87	226
12"	14.75	375	3.06	78	13.75	349	12.75	324	0.38	10	1.22	31	1.88	48	5.0	127	14.0	356

Panel mounted controller indicators



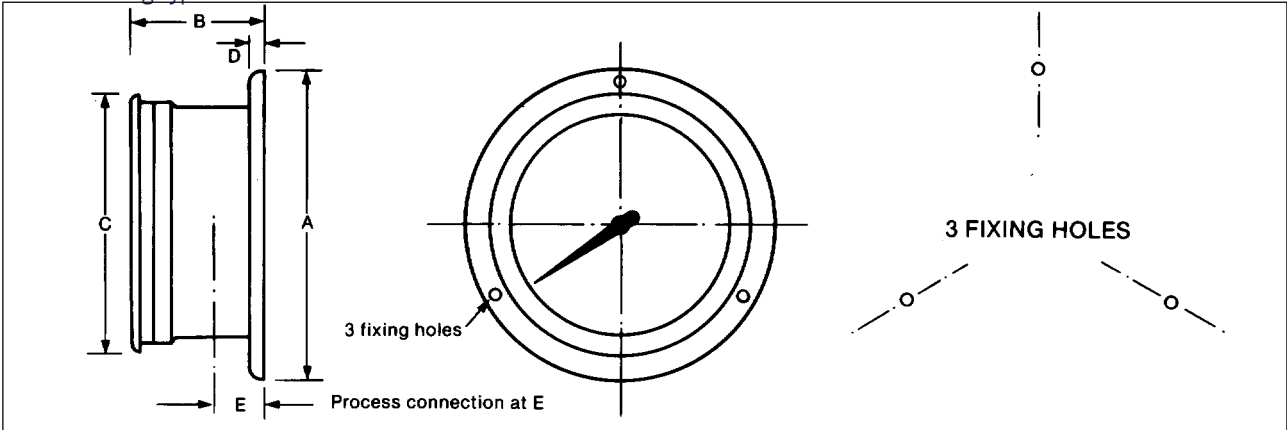
	A		B		C		D		Panel cut-out		Panel cut-out when transmitter is larger than indicator	
Size	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
7"	5.19	132	0.28	7	8.63	219	1.70	43	8.38	213	8.83	225
12"	4.80	148	0.28	7	13.75	349	1.75	45	13.44	341		

Note :

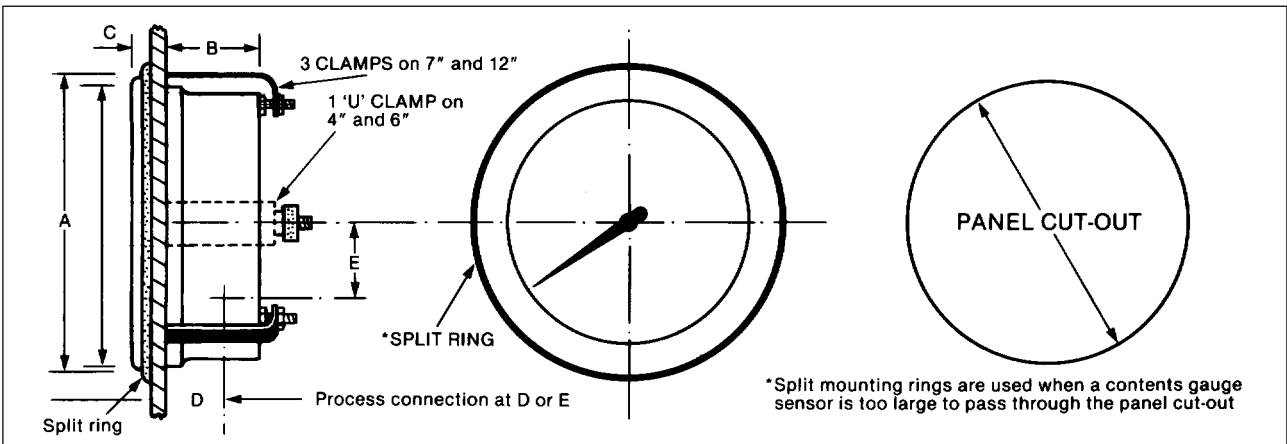
Where transmitter is larger than panel cut-out, split mounting rings are supplied so that indicator can be installed without removal of bezel. The indicator is passed through cut-out from the rear, the split ring placed in position and the indicator set back into the panel

General outline dimensions of indicators

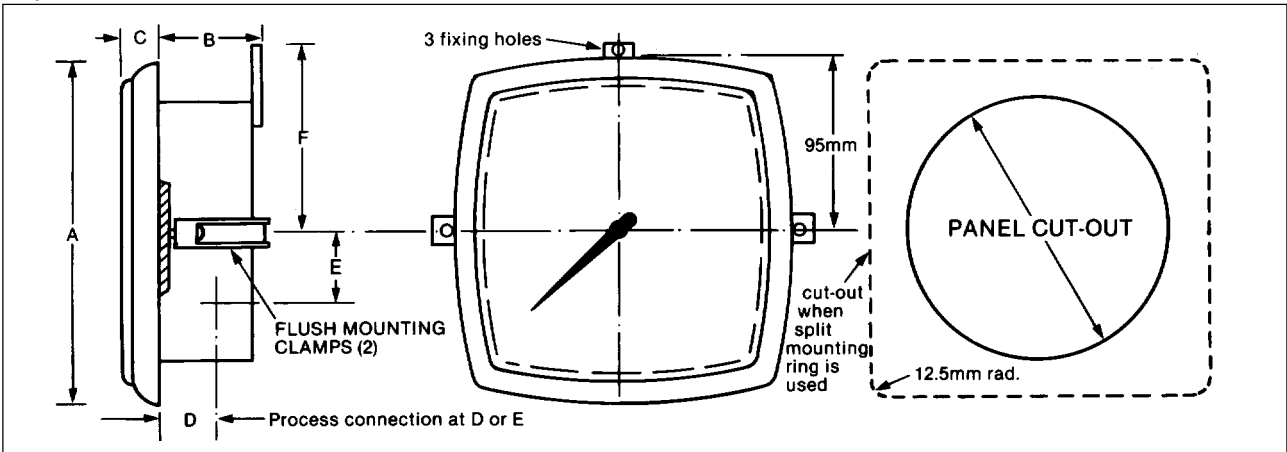
Wall mounting types



Flush mounting types



Polyrad wall and flush



Case Size	Ref. No.	A		B		C		D		E		F		Diameter fixing hole		P.C.D of fixing hole		Panel cut-out dia.		Cut-out for split ring	
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
4in wall	M4W	1305.13	71 2.79	1084.25	8 0.31	25 1.0								5.2	0204	116 4.56					
6 in wall	M6W	1837.17	70 2.76	1626.38	8 0.31	30 1.19								5.0	0197	168 6.62					
7in wall	M7W	2489.75	82 3.23	2198.63	8 0.31	32 1.25								7.0	0280	226 8.87					
12in wall	M12W	37514.75	78 3.06	34913.75	10 0.38	28 1.09								9.0	0350	356 14.00					
	P150W	1807.08	52 2.05	23 0.9	27 1.06	51 2.0				102 4.1				5.5	0220						
Polyrad	M4F	1214.75	57 2.23	9 0.34	40 0.56	33 1.3												111 4.38	125 4.94		
4in flush	M6F	1756.88	60 2.36	5 0.19	38 1.48	51 2.0												165 6.50	179 7.03		
6in flush	M7F	2198.63	67 2.64	7 0.28	43 1.70	- -												213 8.38	225 8.83		
7in flush	M12F	34913.75	68 2.68	7 0.28	45 1.75	- -												341 13.44			
12in flush	P150F	1807.08	52 2.05	23 0.9	27 1.06	51 2.0				102 4.1								165 6.50			
Polyrad																				184 7.25	x184x7.25

ORDERING INFORMATION

Model	'Mersey' Series self-powered hydrostatic level/contents gauge									
MIS	Transmitter mounted in tank through the side - mild steel construction SS diaphragm									
MIT	Transmitter mounted in tank from the top - mild steel construction SS diaphragm									
MS	Transmitter mounted externally through the side - mild steel construction SS diaphragm									
MSF	As MS but fitted with PTFE mask									
Code	Coating									
EC	Epoxy coating of diaphragm and submersible parts									
Code	Valve									
FV	Cast iron flap valve (SGN iron)									
Code	Number of indicators									
0	Single indicator									
1	Twin indicators									
Code	Indicator									
4P	4" panel mounted - die cast aluminium									
4W	4" wall mounted - die cast aluminium									
6P	6" panel mounted - die cast aluminium									
6W	6" wall mounted - die cast aluminium									
Poly P	150mm panel mounted - glass filled polyester - weatherproof									
Poly W	150mm wall mounted - glass filled polyester - weatherproof									
7P	7" panel mounted - die cast aluminium - weatherproof									
7W	7" wall mounted - die cast aluminium - weatherproof									
12P	12" panel mounted - die cast aluminium									
12W	12" wall mounted - die cast aluminium									
Code	Indicator facia					4	6	Poly	7	12
S	Standard black finish					-	-	-	-	-
C	Chrome finish					-	-	-	-	-
Code	Indicator mounting rings									
1	Standard black finish									
2	Chrome finish									
Code	Contacts for alarm or control									
C1	One contact (see Note)					-	-	-	-	-
C2	Two contact (see Note)					-	-	-	-	-
MIT	-	-	0	6P	S	-	-	Typical ordering information		

Extras : All models : Indicator dials may be dual scaled.
 Capillary - PVC covered. (3m included in price)
 - Tin braid covered

If used on pressurised tanks (max. 350 mbar). Extra for reference port (7" indicator only).
 Gunmetal rectangular bulkhead plates BM10
 Additional mild steel tank cover plate AD543 / AD 544

Note : Contacts can drive relays to provide alarm lamps, klaxons, etc. See Leaflet No. ALARMS/0020 for alarm units.

- Notes :**
- Transmitter ranges are limited by the length of capillary.
 - Contacts can drive relays to provide alarm lamps, klaxons, etc. Consult factory for relay price. See Leaflet No. ALARM / 0020 for alarm units.
 - Tank questionnaire and calibration form must be completed.

KDG INSTRUMENTS

Compton Way Crawley West Sussex England RH10 2YZ
 Tel: 01293 525151 Fax: 01293 530849
 e-mail: sales@solartron.com www.solartron.com
 a Roxboro Group Company

Bestobell Mobrey GmbH	Deutschland	tel: 0211/99 808-0
Solartron Mobrey Ltd	China	tel: 021 6353 5652
Mobrey sp z o o	Polska	tel: 022 871 7865
Mobrey AB	Sverige	tel: 08-725 01 00
Mobrey SA	France	tel: 01.34.30.28.30
Mobrey SA-NV	Belgium	tel: 02/465 3879
Solartron Mobrey	USA	tel: (281) 398 7890



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