Mobrey

magnetic level switches

Section 2: Installation M310-2

Direct mounting level switches
(Direct into vessel).
Unpack the Mobrey magnetic level switch from its box and remove all packing pieces, tie strings and tape. The gasket supplied with this product is a non-asbestos composite and must be handled with care to avoid damage.
This switch contains strong permanent magnets. Ferrous debris or particles may become attached to the float magnet. Always check the float magnet is clean before final installation.

The level switch should be positioned so that the float may move freely over its full travel and not foul the sides, bottom or top of the tank etc., in which it is mounted. Positions where turbulence may be caused by agitators or by inlet connections should be avoided. The plant should be clear of any loose materials or metallic particles which might accumulate round the float magnet and interfere with the operation of the switch. Where the liquid may contain sediment or solid particles, particular attention must be given to keeping these free of the float assembly.

When mounted the switch flange should be vertical within two degrees either way. A table of mounting flange details is given on Page 2-2.
When fitted to an open tank or sump, not under pressure, the switch may be mounted through a hole cut in the tank and secured with bolts or studs. Mobrey 'companion' flanges are available to facilitate mounting - details on page 2-2.

Mobrey magnetic level switches have the type number stamped on a nameplate fixed either to the end cap,

switch body or on the terminal box. For catalogue models the type number bears the prefix 'S' for the switch head and 'F' for the float unit. The float unit carries a permanent magnet which is opposed magnetically to a similar magnet in the switch assembly. The switch contacts are changed over with a snap action by magnetic repulsion between the magnets, acting across the wall of the switch body. No intermediate 'off' position can be obtained.
Variations to catalogue models are identified by a 7****/*** type number. The nearest standard production type number is also quoted on the equipment nameplate to allow identification of the relevant paragraphs in this manual.

Level Switches for vertical mounting
A suitable mounting bracket is required for mounting the switch over open top tanks and sumps.
Note- The diameter of a standard float on a vertical float rod is larger than the hole required for the switch head and the float must therefore be fitted from inside the vessel.
The switch should be conveniently positioned at a point of access for both installation and maintenance.
Care should be taken to ensure that condensation cannot drain down the conduit into the switch head.

Switches in pressurised vessels
A studded pad is necessary where the switch is required to operate in a pressure vessel.
See page 2-3 for flange and bolting data.

Level switches in chambers

Mobrey magnetic level switches supplied in or with an external chamber (cage) are supplied loosely assembled only. It is the responsibility of the installer to check that all packaging, tie strings, tapes and filler materials are moved from around and inside the chamber and switch before the assembly is bolted down and in accordance with the torque settings given on page 2-3.

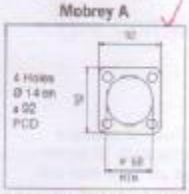
When installing, using or maintaining external chambers supplied compliant with the Pressure Equipment Directive, refer also to the Safety Information (Leaflet No. M310/SI) supplied with the product for further details.

Switches mounted in chambers external to the main vessel should be fitted with suitable valves so that the chamber may be blown down periodically or isolated for routine maintenance as required.

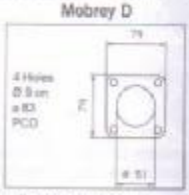
Mounting flange details

Mobrey magnetic level switches have raised face flanges, and are supplied with non-asbestos gaskets. Details of mating flanges required for standard Mobrey flanges are shown below –

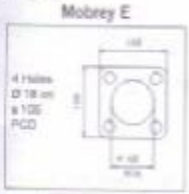
Mobrey A



Mobrey D



Mobrey E



Mobrey G

To facilitate mounting of Mobrey flange switches, the following mounting accessories are available –

For 'A' Flange

Weld on pad J184
Weld on nozzle J786
Backing flange for GRP tanks J863

For 'G' Flange

Weld on pad J800
Weld on nozzle J799

(Refer to installation instructions supplied with backing flange kit)

	Flange			
Studs	A	D	E	G
Size mm	12	8	16	12
Projection mm	30	16	35	35

Switches with international flanges are in accordance with international flange standards. The flange is of composite design, with a stainless steel fork flange which supports the float and also forms the raised face of the flange, and a loose ring back flange. These composite flanged switches have a back flange alignment pin to ensure correct orientation. **The pin must be located in recess in fork flange before tightening mounting bolts.**

Switch head	Flange	Conduit thread	Air connection option
S01	Mobrey A	M20	APV
S03	Mobrey A	M20	-
S36	Mobrey A	M20	APV
S163	Mobrey A	Pg16	-
S179	Mobrey A	M20	-
S181	Mobrey A	Pg16	-
S190	Mobrey A	M20	-
S195	Mobrey A	M20	-
S250	Mobrey G		-
S251	3" 300lb ANSI		-
S253	DN 80 PN40	The gunmetal body has M25	-
S254	4" 300lb ANSI		-
S255	DN 100 PN40		-
S256	3" 150lb ANSI		-
S257	4" 150lb ANSI		-
S260	3" 600lb ANSI	The aluminium body has M20	-
S261	3" 900lb ANSI		-
S268	DN100 PN 64		-
S269	DN125 PN40		-
S270	DN125 PN64		-
S271	DN150 PN64		-
S272	DN80 PN64		-
S275	Mobrey G		-
S278	Mobrey G		-
S357	Mobrey A/E	Pg16	-
S417	DN65 PN 40	M20	APV
S418	DN80 PN 40	M20	APV
S419	DN100 PN 40	M20	APV
S424	3" 300lb ANSI	M20	APV
S425	4" 300lb ANSI	M20	APV
S428	DN65 PN16	M20	APV
S429	DN80 PN16	M20	APV
S430	DN100 PN16	M20	APV
S431	DN125 PN16	M20	APV
S432	DN150 PN16	M20	APV
S433	DN125 PN40	M20	APV
S434	DN150 PN40	M20	APV
S435	DN100 PN64	M20	APV
S436	DN125 PN64	M20	APV
S437	DN150 PN64	M20	APV
S440	3" 150lb ANSI	M20	APV
S441	4" 150lb ANSI	M20	APV
S488	DN80 PN64	M20	APV
S489	3" 600lb ANSI	M20	APV
S490	3" 900lb ANSI	M20	APV

Switch heads are available with air pilot valve switching where shown APV. In this case, air connections are brass compression couplings to suit 6.0mm Copper or nylon pipe. (Coupling thread: ¼" BSP)