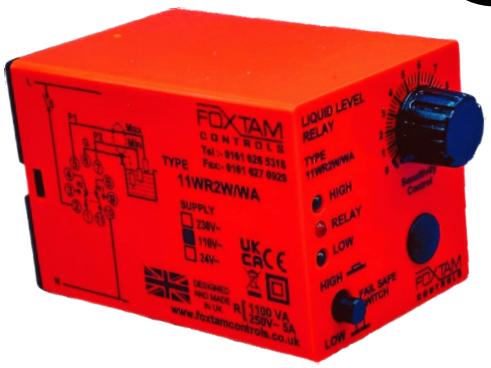
WATER AUTHORITY CONDUCTIVE PROBE LEVEL CONTROL RELAY

PRODUCT GROUP D

TYPE: 11WR2W/WA (dpco)



FEATURES

- Water authority spec level control relay
- Equivalent & suitable substitute for P4 relay
- 11 pin plug in
- DPCO output
- Control & automatic regulation of liquid levels
- Adjustable sensitivity
- Precise level detection with no dead band
- Ignores electrode fouling & foaming
- Isolated AC probe supply
- LED indication

DESCRIPTION & MODE OF OPERATION

An equivalent and suitable substitute P4 conductive level control relay, both with respect to modes of operation, sensitivity adjustment and pin out.

The principle of operation relies on the conducting properties of liquids to complete an electrical circuit between an electrode and a (metal) conductive tank. For non conductive tanks, the path can be facilitated via pump pipework. Alternatively, an earth electrode can be used, extending below the lowest active electrode, **for best performance of adjustment sensitivity and close switching differential, an earth electrode is recommended regardless of tank material.** The control relay switching action occurs as the liquid touches or leaves the electrodes. An isolated low AC voltage is used on the electrodes to prevent electrolysis, (the cathode and anode syndrome).

The standard sensitivity switching point is adjustable between 100 Ohms and 18 KOhms, other higher values are possible on request for high purity water applications. Sensitivity adjustment should be set to suit the application, thus allowing the level controller to ignore electrode bridging, foam layers and tracking, therefore only operating when the liquid touches or leaves the electrode tip.

Switching differential is better than 5% of set sensitivity. This is necessary to avoid relay "hold on" at the lower electrode caused by material clinging on to the probe, electrode wetting and build up of viscous liquids such as sludge. This close switching differential also allows the high electrode to ignore foam layers. A fixed response time of 0.5 Seconds is also built in.

Electrode cabling for liquids of high conductivity up to distances of 100m generally need not to be screened, above 100m screened cable is recommended. However, in any event it is not advisable to run electrode cables with power cabling. When screened cable is used , the screen and the common should be connected together.

SPECIFICATIONS

Supply & Measuring

Supply voltage:	24VAC, 110VAC, 230VAC 50/60Hz (To be specified when ordering)
Supply tolerance:	±15%
Power consumption:	<6VA
Isolation:	Via a transformer
Probe supply:	24VAC
Sensitivity range:	Adjustable 100 Ohms to 18KOhms (Via a 0-10 graduated front potentiometer)
Switching differential:	Better than 5% of sensitivity setting
Response time:	0.5 Seconds
LED indication:	Red LED denotes relay energised Green LED's x2, fail safe mode & power status

Relay Output

Output contacts:	DPCO 5 Amps/250VAC AC1
Mechanical life:	30Million ops
Electrical life:	200K ops at max rated load

General

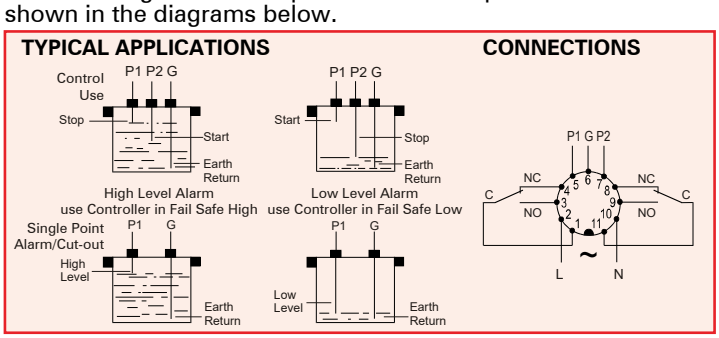
Operating temp.	-20°C to +65°C
Storage temp:	-20°C to +65°C
UKCA & CE marked:	Yes
In accordance with:	EN61000-6-1: 2007, EN61000-6-3: 2007 EN61010-1: 2002
Housing material:	Polycarbonate, Auto extinguishable to UL 94 V-0

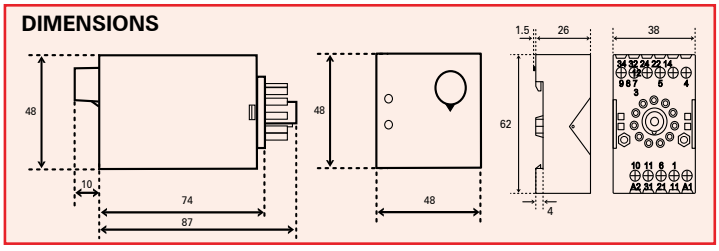
OPERATION & APPLICATION

Fail Safe: The fail safe feature is set by a switch on the front panel. Generally, emptying applications require a **"Fail Safe High"** setting, **Button In**. Filling applications require a **"Fail Safe Low"** setting, **Button Out**.

In **"Fail Safe High"** the relay will de-energies when the liquid touches the shortest electrode (e.g. pumping or high level alarm). In **"Fail Safe Low"** the relay will energies when liquid touches the shortest electrode (e.g. pumping out or low level alarm).

For Control Use, ignoring the Earth probe, two active electrodes are used. The internal relay energises at the tip of one electrode and de-energises at the tip of the other to provide the interlock shown in the diagrams below.





ORDERING INFORMATION

TYPE		COIL VOLTAGE
11WR2W/WA	(11 pin plug in, DPCO)	24VAC, 110VAC, 230VAC (specify)
PF-113BE	Recommended 11 pin socket	
WBS	Retaining spring	



PRODUCT GROUP H

PF-113BE