

# LIQUID LEVEL CONTROL - 'ROBOFLOTE'

## APPLICATION

Roboflote has been developed for a wide range of applications, from high or low level alarms in oil tanks to the control of multiple pumps operating with sewage. It can be used to monitor mineral, vegetable or animal oils, lubricants, water and dilute or concentrated acids. It is resistant to most chemicals and can work in ambient temperatures up to 85°C. Roboflote will work in liquids with a density down to 0.9. Roboflote is Mercury free.

## FEATURES

- Highly Reliable
- Hermetically Sealed
- Chemically Resistant
- All Connections Vulcanised
- Standard Lengths 5m, 10m and 20m
- Manufacture and Quality Control in accordance with ISO 9001

## CONSTRUCTION AND OPERATION

Roboflote comprises a changeover microswitch actuated by a ball enclosed in a float body, with a weight and electrical cable all encapsulated in 'Hypalon', a chemically resistant synthetic rubber. The weight 'anchors' the device. When the float body is freely suspended the microswitch is made to the Brown and Blue connections (see Fig.2 opposite). As the liquid level rises and the float inverts the Brown and Black connections are made.

For governing pumps it should be noted that the minimum head is 130mm and in this case only one Roboflote is required. If a 'head' of greater distance is required then two units have to be employed. If several pumps are used a single 'common' switch can be mounted for 'cut-out'.

## INSTALLATION

Roboflote should be mounted so that it is suspended by its cable which should be fixed to the top of the tank. If turbulence is likely it may be necessary to clip the cable to the side of the tank.

Fit the device so that it is at the desired height, adjustments are made by moving cable up or down. The distance between individual units should be 200mm in calm conditions or 400mm in cases of surging. If heavy surging exists the float should be sited within a stilling chamber or tube of suitable dimensions

## PRINCIPAL DIMENSIONS

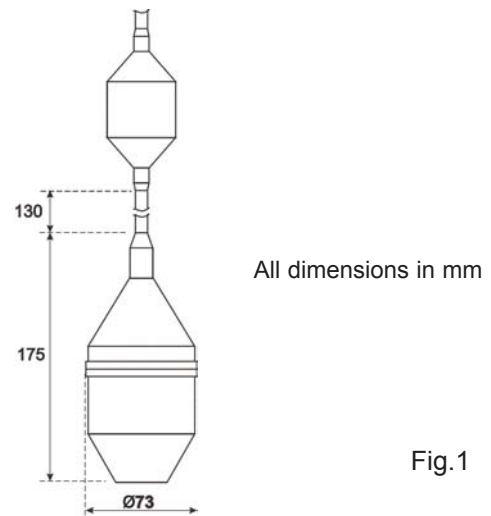


Fig.1

## WIRING DIAGRAMS

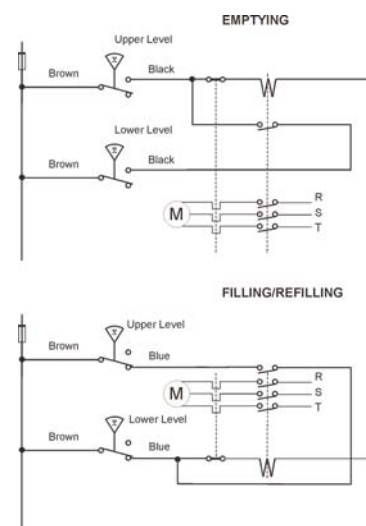


Fig.2

## SPECIFICATION

<b>Enclosure -</b>	Hypalon
<b>Contacts -</b>	SPCO switch, rated 6a at 230v not suitable for low voltage or DC
<b>Min. Liquid Density -</b>	0.9
<b>Ambient Temp. Range -</b>	-40°C to +85°C
<b>External Pressure -</b>	20m WG - 62ft head
<b>Standard Lengths - and Part No's</b>	5m - 7490001 10m - 7490002 20m - 7490003
<b>Env. Protection -</b>	IP68
<b>Weight -</b>	5m - 1100g 10m - 1600g 20m - 2700g

## FLUID RESISTANCE OF HYPALON

Fluid	Test Temperature °F	Test Temperature °C	Effect	Fluid	Test Temperature °F	Test Temperature °C	Effect
Acetic Acid, Glacial	68	20	B	Isooctane	68	20	A
	158	70	C	Isopropyl Ether	68	20	B
Acetic Anhydride	68	20	A				
Acetone	68	20	B	Kerosene	68	20	B
Aluminium Sulphate (300 hours)	230-250	110-121	A	Lacquer	68	20	C
Ammonia, Anhydrous	68	20	B	Lactic Acid	68	20	A
Ammonium Hydroxide	200	93	A	Linseed Oil	68	20	A
Ammonium Sulphate	200	93	A	Lubricating Oils	158	70	B
Amyl Acetate	68	20	C				
Asphalt	68	20	A	Magnesium Chloride (30days)	220	104	A
				Magnesium Hydroxide	200	93	A
Barium Hydroxide	200	93	A	Mercury	68	20	A
Borax	200	93	A	Methyl Alcohol	200	93	A
Boric Acid	200	93	A	Methylene Chloride	68	20	C
Butane	68	20	A	Mineral Oil	68	20	A
Butyl Acetate	68	20	C				
Butyraldehyde	68	20	B-C	Naptha	68	20	B-C
				Napthalene	68	20	C
Calcium Bisulphite	200	93	A	Nitric Acid, 20% (14days)	72	22	A
Calcium Hydroxide	200	93	A		122	50	B
Calcium Hyperchlorite, 20%	200	93	A	Nitric Acid (Concentrated) (7days)	72	22	B-C
Carbolic Acid (Phenol)	68	20	B-C	Nitrobenzene (1day)	68	20	C
	158	70	C				
Carbon Dioxide	200	93	A	Oleic Acid	68	20	B
Carbon Monoxide	200	93	A	Oleum	68	20	C
Carbon Tetrachloride	68	20	C				
Castor Oil	158	70	A	Palmitic Acid	68	20	B
Chlorine Gas, Wet (14days)	68	20	B	Phosphoric Acid, 20%	200	93	A
Chloroform	68	20	C	Phosphoric Acid, 70%	200	93	A
Chromic Acid, 20% (14days)	72	22	A	Phosphoric Acid, 85%	200	93	A
	158	70	A	Pickling Sol., 20%HNO, 4%HF	68	20	A
Chromic Acid, 50% (14days)	72	22	A	Picric Acid	68	20	A
	158	70	A	Potassium Dichromate	200	93	A
Citric Acid	68	20	A	Potassium Hydroxide	200	93	A
Cottonseed Oil (7days)	72	22	A				
Creosote Oil	68	20	B-C	Ref. Fuel B (70hours)	77	25	B
Cyclohexane	68	20	C				
				Soap Solutions	200	93	A
Diacetone Alcohol	68	20	A	Sodium Hydroxide, 20%	200	93	A
Diethyl Sebacate	68	20	B	Sodium Hydroxide, 50%	285	141	A
Diocyl Phthalate	68	20	B	Sodium Hydroxide, 73%	280	138	A
				Sodium Hyperchlorite, 22% (14days)	72	22	A
Ethyl Acetate	68	20	C	Sodium Peroxide	158	70	A
Ethyl Alcohol	200	93	A	Sodium Salts	200	93	A
Ethyl Chloride	68	20	B-C	Soybean Oil	68	20	A
Ethylene Dichloride	68	20	C	Stannous Chloride	200	93	A
Ethylene Glycol (14days)	158	70	A	Stearic Acid	158	70	B
				SulphurDioxide, Liquid (7days)	68	20	A
Ferric Chloride, 15% (243 days)	68	20	A	Sulphuric Acid, 50% (14days)	158	70	A
Ferric Chloride, 60% (1year)	68	20	A	Sulphuric Acid, 66° Be (14days)	72	22	A
Fluoboric Acid	68	20	A		122	50	B
Fluosilic Acid	250	121	A	Sulphur Trioxide	68	20	B
Formic Acid	68	20	A				
FREON 12 (8days)	68	20	A	Tannic Acid, 10%	68	20	A
Fuel Oil	158	70	B	Tartaric Acid	200	93	A
Furfural	68	20	B	Toluene	68	20	C
				Tributyl Phosphate	68	20	C
Gasoline	68	20	B	Trichloroethylene	68	20	C
Glucose	200	93	A	Triethanolamine	158	70	A
Glue	200	93	A	Tung Oil	68	20	A
Glycerine	200	93	A	Turpentine	68	20	C
Hexane	68	20	A	Water (7days)	158	70	A
Hydraulic Oils	200	93	A	Water (28days)	212	100	A
Hydrochloric Acid, 20% (14days)	72	22	A				
Hydrochloric Acid, 20% (14days)	158	70	A				
Hydrochloric Acid, 38% (14days)	72	22	A				
Hydrochloric Acid, 38% (14days)	158	70	A-B				
Hydrocyanic Acid	68	20	A				
Hydroflouric Acid, Vapours (4 months)	250-300	121-149	A				
Hydroflouric Acid, 48% (77days)	158	70	A				
Hydrogen	68	20	A				
Hydrogen Sulphide	68	20	A				

**Key to Effects**  
**A = Little or no effect**  
**B = Minor to moderate effect**  
**C = Severe effect**

**BLACK**  
**TEKNIGAS**  
[www.blackteknigas.com](http://www.blackteknigas.com)



Certificate No. FM13979



Bydand Lane  
 Little Paxton  
 St. Neots  
 Cambridgeshire  
 PE19 6EG

Tel +44 (0)1480 407074  
 Fax +44 (0)1480 407076

E mail : [sales@blackteknigas.co.uk](mailto:sales@blackteknigas.co.uk)

Black Teknigas has a policy of continuous research and development and reserve the right to change specification without prior notice. Doc Ref BT???????