

TECHNICAL SPECIFICATION



Flygt



ITT Industries

PRODUCT DESCRIPTION

The simplest possible method for level control! A mechanical switch in a plastic casing, freely suspended at the desired height from its own cable. When the liquid level reaches the regulator, the casing will tilt and the mechanical switch will close or break the circuit, thereby starting or stopping a pump or actuating an alarm device. No wear, no maintenance! In sewage pumping stations, for ground water and drainage pumping — in fact, for most level control applications — the ENM-10 is the ideal solution.

The regulator casing is made of polypropylene and the cable is sheathed with a special PVC compound. The plastic components are welded and screwed together. Adhesive is never used. Impurities and deposits will not adhere to the smooth casing.

This level regulator is available in different versions, depending upon the medium in which it is to be used. As standard, the regulator can be obtained with 6, 13 or 20 metres (20, 42 or 65 feet) of cable for liquids with specific density between 0.95 and 1.10 g/cm³; for other specific densities, the regulator is only available with 20 metres (65 ft) of cable. The regulator can withstand up to 60°C (140°F).

Dimensions

For density g/cm ³	Regulator length mm (in)	Diameter mm (in)
0.65—0.80	194 (7 ¹⁰ / ₁₆)	100 (4)
0.80—0.95	177 (7)	100 (4)
0.95—1.10	162 (6 ³ / ₈)	100 (4)
1.05—1.20	142 (5 ⁹ / ₁₆)	100 (4)
1.20—1.30	133 (5 ¹ / ₄)	100 (4)
1.30—1.40	130 (5 ² / ₁₆)	100 (4)
1.40—1.50	126 (5)	100 (4)

Technical data

Liquid temperature:	min. 0°C (32°F) max. 60°C (140°F)
Liquid density:	min. 0.65 g/cm ³ max. 1.5 g/cm ³
Degree of protection:	IP68, 20 m (65 ft)
Interrupting capacity of micro switch:	AC, resistive load, 250V 10A AC, inductive load, 250V 3A cos φ = 0.5 DC, 30V 5A

Note that local regulations may limit the voltage.

Approvals:	CSA, SEMKO, NEMKO, DEMKO Approved according to EN61058
Weight:	approx. 2 kg (4.5 lb) for a standard density regulator with 20 m cable.

Materials

Body:	polypropylene
Bending relief:	EPDM rubber
Cable:	special compound PVC or chloroprene rubber

Colour code



CHEMICAL RESISTANCE LIST

The liquid in which level regulation is practiced most frequently is, of course, water. Of the millions of regulators in use all over the world today, it is estimated that nine out of ten work in water.

However, with a float body of polypropylene, a cable of PVC or chloroprene (CR) and a bending relief of EPDM rubber, the ENM-10 is virtually insensitive to many aggressive liquids.

The table shows how resistant the ENM-10 equipped with either PVC or CR cable, is to different chemicals at two different temperatures. The classification is broken down into the following categories:

0 = No effect, 1 = Minor to moderate and 2 = Severe effect. The sign — means that information is not available.

Keep in mind also that the density of the liquid determines the buoyancy of the regulator. The ENM-10 is made for seven different densities. See page 2.

Always observe local regulations:

Take particular note of:

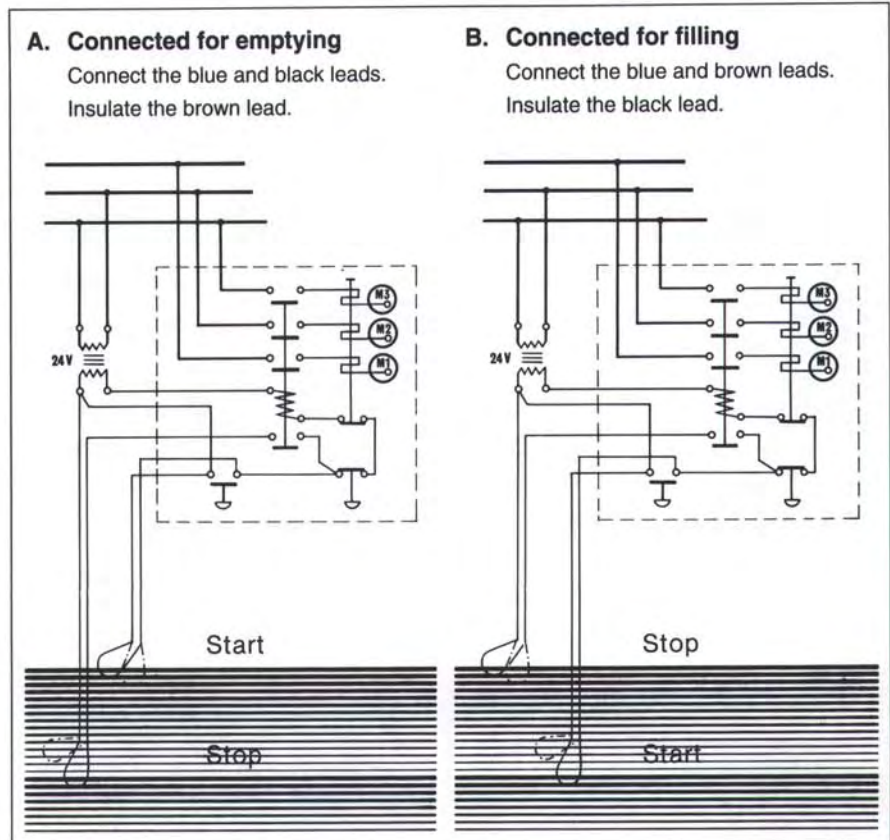
- risk of fire/explosion
- hygiene requirements

Acids	PVC cable		Chloroprene rubber cable		Salts	PVC cable		Chloroprene rubber cable		Solvents and miscellaneous	PVC cable		Chloroprene rubber cable	
	20°C (68°F)	60°C (140°F)	20°C (68°F)	60°C (140°F)		20°C (68°F)	60°C (140°F)	20°C (68°F)	60°C (140°F)		20°C (68°F)	60°C (140°F)	20°C (68°F)	60°C (140°F)
Acetic Acid 50%	1	2	0	0	Aluminium Chloride	0	0	0	0	Aceton	2	2	2	2
Acetic Acid 75%	2	2	0	0	Calcium Sulphate	0	0	0	0	Aniline	2	2	1	2
Benzoic Acid	2	2	0	0	Calcium Chloride	0	0	0	0	Benzene	2	2	2	2
Boric Acid 5%	0	—	0	0	Calcium Nitrate	0	0	0	0	Butyl Alcohol	2	2	0	1
Butyric Acid	2	2	2	2	Copper Chloride	0	0	0	0	Carbon Tetrachloride	2	2	2	2
Chromic Acid 10%	0	2	2	2	Copper Sulphate	0	0	0	0	Chlorobenzene	2	2	2	2
Citric Acid	0	1	0	0	Ferric Chloride	0	0	0	0	Chloroform	2	2	2	2
Hydrobromic Acid 5%	1	2	0	0	Ferrous Sulphate	0	0	0	0	Ethyl Alcohol	2	2	0	1
Hydrochloric Acid 10%	0	1	0	1	Magnesium Chloride	0	0	0	0	Ethyl Ether	2	2	2	2
Hydrochloric Acid 37%	1	2	0	2	Potassium Sulphate	0	0	0	0	Ethyl Acetate	2	2	2	2
Hydrocyanic Acid 10%	0	0	1	2	Potassium Nitrate	0	0	0	0	Ethylene Dichloride	2	2	2	2
Hydrofluoric Acid 5%	0	2	0	1	Potassium Carbonate	1	1	1	1	Ethylene Chloride	2	2	2	2
Hypochloric Acid	1	2	2	2	Potassium Bicarbonate	0	0	0	0	Formaldehyde 37%	1	2	0	0
Maleic Acid	2	2	2	2	Sodium Sulphate	0	0	0	0	Gasoline	2	2	2	2
Nitric Acid 5%	1	1	1	1	Sodium Chloride	0	0	0	0	Kerosene	2	2	2	2
Nitric Acid 65%	2	2	2	2	Sodium Nitrate	0	0	0	0	Methyl Alcohol	2	2	0	0
Oleic Acid	1	2	2	2	Sodium Bicarbonate	0	0	0	0	Methyl Ethyl Ketone	2	2	2	2
Oxalic Acid 50%	1	1	1	2	Sodium Carbonate	0	0	0	0	Methylene Chloride	2	2	2	2
Phosphoric Acid 25%	0	0	1	2	Tin Chloride	1	1	1	1	Nitrobenzene	2	2	2	2
Phosphoric Acid 85%	0	0	1	2	Zinc Sulphate	0	0	0	0	Phenol	2	2	2	2
Sulphuric Acid 10%	1	2	1	2	Zinc Chloride	0	0	0	0	Toluene	2	2	2	2
Sulphuric Acid 78%	2	2	2	2						Trichlorethylene	2	2	2	2
Tannic Acid	0	0	0	0						Turpentine	2	2	2	2
Tartaric Acid	1	1	1	1						Xylene	2	2	2	2
					Oils									
					Castor Oil	1	1	1	1	Gases				
					Cocoonut Oil	0	—	0	2	Carbon Dioxide	0	0	0	0
					Corn Oil	2	2	2	2	Carbon Monoxide	0	0	0	0
					Diesel Oil	2	2	2	2	Chlorine (wet)	2	2	2	2
					Linseed Oil	2	2	2	2	Hydrogen Sulphide	0	0	1	1
					Mineral Oils	2	2	2	2	Sulphur Dioxide (wet)	1	1	2	2
					Olive Oil	1	1	1	1					
					Silicone Oils	0	0	0	0					
Bases														
Ammonium Hydroxide	0	—	0	0										
Calcium Hydroxide	0	0	0	0										
Potassium Hydroxide	1	2	0	0										
Sodium Hydroxide	1	2	0	0										

0 = No effect, 1 = Minor to moderate, 2 = Severe effect. — = No information available.

Wiring alternative

To conform to local regulations, the level regulators are normally connected through a transformer to a low-tension control circuit. Two regulators are used — one for starting and one for stopping. A third regulator can be connected if an alarm is required at a given level. Identical regulators can be used for all functions.



Let the level drop . . .



. . . to the lowest permissible point.



The regulator will then react . . .



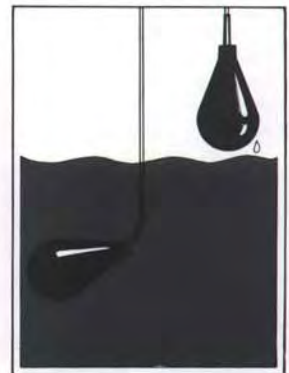
. . . so the process is reversed.



At the highest permissible point . . .



. . . level regulator II reacts . . .



. . . in the opposite fashion.



The manufacturers reserve the right to alter performance specification or design without notice.

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