



Selection Chart for Level Transmitters and Level Switches

Legend:

- 1 = excellent
- 2 = excellent with plastic coated probe
- 3 = consult with NIVELCO for details
- X = not applicable

NIVELCO earned recognition primarily with its level transmitters, and gained a substantial global market share, based on its 3 decades of constant investment in technology. Supported by our wide base of level know-how, we wish to share our experiences in the field of applications with our readers. The chart below is not complete but covers a fairly wide spectrum of mediums typical for the most important industry segments. The actual application parameters and customer requirements should be taken into consideration. The content of the chart is only informational, please regard it as a recommendation.

For Liquids			Continuous Level Measurement							Point Level Detection				
Industry	Medium to be measured	Relative Dielectric Constant (ε _r)	PiloTREK	MicroTREK	NIVOCAP	NIVOPRESS D	NIVOPRESS N	NIVOFLIP	NIVOTRACK	EasyTREK EchoTREK	NIVOMAG	NIVOPOINT	NIVOSWITCH	NIVOCAP CK
Agriculture	Fertilizer (aqueous solution)	conductive	1	1	1	1	1	1	3	1	3	3	3	1
	Manure	conductive	1	1	1	1	1	1	1	1	1	1	1	1
Construction Materials	Calcium carbonate aqueous solution	conductive	1	1	1	1	1	1	1	1	1	1	1	1
	Slacked lime (lime hydrate) / Lime milk (Ca(OH) ₂)	conductive	1	1	1	1	1	1	1	1	1	1	1	1
Chemical Industry	Liquid ammonia (NH ₃)	17-25	1	1	1	1	1	3	3	1	1	1	3	1
	Ammonium hydroxide (NH ₄ OH)	conductive	1	1	1	1	1	1	1	1	1	1	1	3
	Ammonium chloride (NH ₄ Cl) aqueous solution	conductive	1	3	3	1	1	1	2	3	3	2	2	3
	Boric acid (H ₃ BO ₃) aqueous solution	conductive	1	1	1	3	2	3	1	1	1	1	1	1
	Carbon tetrachloride (CCl ₄) dry	2.3	1	1	1	1	2	1	1	1	1	1	1	1
	Ether, diethyl-ether (CH ₃ CH ₂) ₂ O	3.1-4.4	1	1	1	1	1	1	1	3	1	1	1	1
	Formaldehyde (HCHO) in H ₂ O, Formalin	23	1	1	1	1	1	1	1	1	1	1	1	1
	Fluorosilicic acid ((H ₂ SiF ₆) in H ₂ O)	conductive	1	1	1	3	1	1	1	3	1	1	1	1
	Glycerol (glycerine, glycerin) (HOCH ₂ CH(OH)CH ₂ OH)	42.5-47	1	1	1	1	1	1	1	1	1	1	1	1
	Ethylene Glycol ((CH ₂ OH) ₂)	37-41.2	1	1	1	1	1	1	1	1	1	1	1	1
	Hydrochloric acid (HCl)	conductive	3	2	3	1	1	1	3	3	1	3	2	1
	Ferric chloride ((FeCl ₃) in H ₂ O)	conductive	2	2	3	1	3	1	2	1	1	2	2	1
	Nitric acid (HNO ₃)	conductive	3	2	1	1	1	1	1	1	1	1	2	1
	Formic acid (HCO ₂ H)	conductive	2	2	2	1	1	3	2	3	1	2	2	3
	Phosphoric acid (H ₃ PO ₄)	conductive	1	1	1	3	3	1	3	1	1	3	1	1
	Sodium chloride ((NaCl) in H ₂ O)	conductive	1	1	1	1	1	1	3	1	1	3	2	3
	Sodium hydroxide, Caustic soda ((NaOH) in H ₂ O)	conductive	1	1	1	3	3	3	3	1	1	3	1	1
	Sodium hypochlorite ((NaOCl) in H ₂ O), Bleach	conductive	1	2	1	1	3	1	2	1	1	1	2	1
	Potassium permanganate ((KMnO ₄) in H ₂ O), Permanganate of potash solution	conductive	1	1	1	1	1	1	1	1	1	1	1	1
	Potassium hydroxide ((KOH) in H ₂ O)	conductive	1	1	1	3	3	3	3	1	1	3	1	1
	Hydrogen peroxide (H ₂ O ₂)	84	1	1	1	1	1	1	1	1	1	1	1	1
	Sodium bisulfite ((NaHSO ₃) in H ₂ O)	conductive	2	2	1	1	3	1	2	1	3	2	2	3
	Sulfuric acid (H ₂ SO ₄)	84	2	2	3	1	1	1	2	1	1	2	2	1
	Chloroform (CHCl ₃)	3.7-5.5	1	1	1	3	3	1	1	3	1	1	1	1
	Cyclopentane (C ₅ H ₁₀)	2	1	1	1	1	3	1	1	3	1	1	1	1
	Cyclohexane (C ₆ H ₁₂)	2	1	1	1	1	3	1	1	3	1	1	1	1
	Hexane (C ₆ H ₁₄)	1.8	1	1	1	1	3	1	1	3	1	1	1	1
	Dichloroethylene (CH ₂ Cl ₂)	2.1-10.3	1	1	3	1	1	1	1	3	1	1	1	1
	Trichloroethane (CH ₃ CCl ₃)	7.2	1	1	1	1	1	1	1	3	1	1	1	1
	Dichloromethane / methylene chloride (CH ₂ Cl ₂)	8.9-9.1	1	1	1	1	1	1	1	3	1	1	1	1
	Acetic acid (CH ₃ COOH), Vinegar	conductive	1	1	1	1	1	1	1	3	1	1	1	1
	Painting and varnish agents diluted with water (non-explosive)	conductive	1	1	1	3	1	3	3	1	3	3	3	1
	Painting and varnish agents diluted with explosive agents	conductive	1	1	1	3	1	3	3	3	1	1	1	1
	Benzene, benzol (C ₆ H ₆)	1.9-3.2	1	1	1	3	3	1	1	3	1	1	1	1
Styrene / ethenylbenzene (C ₈ H ₈)	2.3	1	1	1	1	3	1	1	3	1	1	1	1	
Xylene (C ₆ H ₄ (CH ₃) ₂)	2.3	1	1	1	1	3	1	1	3	1	1	1	1	
Chlorobenzene (C ₆ H ₅ Cl)	6	1	1	1	1	3	1	1	3	1	1	1	1	
Acetone ((CH ₃) ₂ CO) Dimethylketone	21.5	1	1	1	1	3	1	1	3	1	1	1	1	
Lactic acid (CH ₃ CH(OH)COOH)	conductive	1	1	1	1	1	3	3	3	3	3	3	1	
Ethyl alcohol (CH ₃ CH ₂ OH)	24.3	3	1	1	1	3	1	1	1	1	1	1	1	
Ethyl acetate (CH ₃ COOCH ₂ CH ₃)	6	3	1	1	1	3	1	1	1	1	1	1	1	
Methyl alcohol (CH ₃ OH)	33-56.6	3	1	1	1	3	1	1	1	1	1	1	1	
Isopropyl alcohol ((CH ₃) ₂ CHOH)	18.3	1	1	1	1	3	1	1	1	1	1	1	1	
Toluene (C ₆ H ₅ -CH ₃)	2.0-2.4	3	1	1	1	1	1	1	3	1	1	1	1	
Food and Beverage	Beer	conductive	1	3	3	1	1	1	3	3	3	3	1	3
	Citric acid ((C ₆ H ₈ O ₇) in H ₂ O)	conductive	1	1	1	3	1	2	1	3	2	1	3	1
	Coconut oil	2.9	1	1	1	1	1	1	1	1	1	1	1	1
	Palm oil	1.75	1	1	1	1	1	1	1	1	1	1	1	1
	Animal fat	2.7	1	1	3	1	1	1	1	1	1	1	1	1
	Cream, yoghurt	conductive	1	1	1	1	1	1	1	1	1	1	1	1
	Milk	conductive	1	1	1	1	1	1	1	1	1	1	1	1
	Sugar syrup	conductive	1	1	3	3	1	1	1	1	1	2	1	1
	Margarine	2.8-3.2	1	1	1	1	1	1	1	1	1	1	1	1
	Confectionary coating pastes, honey, jam, marmalade, liquid chocolate	2.4; 24; ∞; 3	1	1	1	1	1	1	1	1	1	1	3	1
	Edible oil	3.9	1	1	1	1	1	3	1	1	1	1	1	1
	Fruit juice	conductive	1	1	1	1	1	3	1	3	3	1	1	1
	Wine	conductive	1	1	1	1	1	3	1	1	1	1	1	1

For Liquids			Continuous Level Measurement							Point Level Detection				
Industry	Medium to be measured	Relative Dielectric Constant (ε _r)	PiloTREK	MicroTREK	NIVOCAP	NIVOPRESS D	NIVOPRESS N	NIVOFLIP	NIVOTRACK	EasyTREK EchoTREK	NIVOMAG	NIVOPOINT	NIVOSWITCH	NIVOCAP CK
Power Plants	Fuel oil	2.1	3	1	1	1	1	1	1	1	1	1	1	1
	Heated pakura (mazout)	2.2	3	1	3	1	1	1	1	1	1	3	1	1
	Hot water in high pressure vessels	conductive	3	3	3	1	1	1	1	1	1	1	3	1
	Water in condensing vessels	80	1	1	1	1	1	1	1	1	3	1	1	1
	Water level in supply water pool	conductive	1	1	1	1	1	1	1	1	1	1	1	1
Oil Industry	Crude oil	1.7-2.2	1	1	1	1	1	3	1	1	1	1	1	1
	Petrol, gasoline	1.7-2.2	1	1	1	1	1	1	1	1	3	1	1	1
	Kerosene	1.7-2.2	3	1	1	1	1	1	1	1	3	1	1	1
	Butane (C ₄ H ₁₀) liquified	1.4	1	3	3	1	1	1	1	1	1	1	1	1
	Butanol (C ₄ H ₉ OH)	17.1	1	1	1	1	1	1	1	1	1	1	1	1
	Butyl acetate	5	1	1	1	3	1	3	1	3	1	1	1	1
	Butanone, methyl ethyl ketone (CH ₃ C(O)CH ₂ CH ₃)	18.5	1	1	1	1	1	1	1	3	1	1	1	1
	LPG	1.4-1.6	1	1	1	1	1	1	1	1	1	1	1	1
	Shale oil	2.1	3	1	1	1	1	1	3	1	1	1	1	1
	Grease (lubricant)	3.15	1	1	1	1	1	1	1	1	3	1	1	1
	Diesel oil	2-2.5	1	1	1	1	1	1	1	1	1	1	1	1
	Lubricant oil	2-2.5	1	1	1	1	3	1	1	1	1	1	1	1
	Transformer oil	2-2.5	1	1	1	1	1	1	1	1	1	1	1	1
	Paper Mill	Paper pulp	conductive	1	1	1	3	3	1	1	1	1	1	1
Water		conductive	1	1	1	1	1	1	1	1	1	1	1	1
Plastic Industry	Silicone oil	2.7	1	1	1	1	1	1	1	1	1	1	1	1
Water Works	Drinking water in reservoirs	conductive	1	1	1	1	1	1	1	1	1	1	1	1
	Thermal water in cooling reservoirs	conductive	1	1	3	1	3	1	1	3	1	1	1	1
Marine	Seawater	conductive	1	2	1	1	1	1	1	1	1	2	2	1
Waste Water	Rainwater reservoir	conductive	1	1	1	1	1	1	1	1	1	1	1	1
	Waste water	conductive	1	1	1	1	1	1	1	1	1	1	1	1

For Solids			Continuous Level Measurement				Point Level Detection		
Industry	Medium to be measured	Relative Dielectric Constant (ε _r)	MicroTREK	NIVOCAP	EasyTREK EchoTREK	NIVOSWITCH	NIVONCONT	NIVOROTA	NIVOCAP CK
Agriculture	Corn, cereals, grain, sunflower seed	2.0-5.0	1	1	3	3	1	1	1
	Seed-corn, granulated fodder mixture	2.0-3.0	1	1	3	3	3	1	1
	Granule fertilizers (Nitrates, Phosphates)	1.6-6.4	1	1	1	3	1	1	1
Construction Materials	Cement	1.5-10	1	1	3	3	1	1	1
	Ground, stone, sand, gravel	2.5-5.0	3	1	3	3	3	1	3
	Powdered lime (CaO)	1.6-2.2	1	1	3	1	1	1	1
Chemical Industry	Sodium carbonate, Soda (Na ₂ CO ₃)	5.3-8.4	1	1	1	1	1	1	1
	Sodium bicarbonate, Baking soda (NaHCO ₃)	5.7							