HORIBA AdvancedTechno

For Semiconductor Cleaning Processes

Resistivity Meter

HE-480R

CE marking compliant

Perfect for Monitoring the Resistivity of Ultra-Pure Water in Cleaning Processes

As part of the final process for cleaning silicon wafers, ever-stricter monitoring of the purity of the ultra-pure water used in the final rinse process is being demanded. The HE-480R has a built-in microprocessor and measures ultra-pure water at high precision during that process.

Features

●High precision measurement of ultra-pure water

The HE-480R's onboard microprocessor calculates the temperature compensation coefficient based on the temperature characteristics of the ultra-pure water and automatically converts it to 25°C resistivity.

●High precision temperature compensation

The HE-480R employs a platinum temperature resistor (Pt1000Ω) in its temperature compensation element, thereby enabling high precision temperature compensation in the range of 0 to 100°C.

●Selectable temperature compensation function

The HE-480R offers selection of the desired setting between "Pure Water" and "Ultra-Pure Water + Impurities", allowing the implementation of temperature compensation that is most appropriate to the measured liquid.

●Selectable settings for standard temperature

Because the resistivity of a solution changes along with the temperature of that solution, resistivity is normally displayed at a standard value of 25°C. However, if the solution temperature is always high or if temperature characteristics are nonlinear, that 25°C value may not necessarily be effective. For this reason, the HE-480R is equipped with a function that enables the setting of the standard temperature as required. Since temperature settings can thus be made according to the characteristics of the measured liquid and process conditions, this is perfect for controlling resistivity.

●Simultaneous display of measured and set parameter values

The HE-480R allows the simultaneous confirmation of measured values when settings and values are called up.

The HE-480R is also an environmentally-friendly product that uses lead-free solder for mounting chips on the PCB.

Specifications

Model	HE-480R					
Measurement method	2-electrode method					
Sensor input	1-channel					
Cell constant	Approx. 0.01/cm					
Temperature sensor specifications	Platinum resistance 1000Ω/0˚C					
Measuring range	Resistivity	kΩ·m	0 to 2.00	0 to 20.0	0 to 200.0	0 to 1000*
		MΩ·cm	0 to 0.200	0 to 2.00	0 to 20.00	0 to 100.0*
	* : Measurable without temperature compensation					
	Temperature: 0 ˚C to 100˚C (Select your desired decimal point from 0, 1, and 2 digits)					
Repeatability	Within ±0.5% of the full scale (in equivalent input)					
Linearity	Within ±0.5% of the full scale (in equivalent input)					
Transmission output	4mA to 20mA DC : input/output isolated type Maximum load resistance : 900Ω Transmission output range : Freely selectable within the measurement range					
Contact output	Outputs : 2 points Alarm contact output (R1,R2) Contact type : relay contact, SPDT Contact rating : 240V AC 3A and 30V DC, 3A (resistance load) Contact function : selectable from upper/lower limit operation (ON/OFF control), alarm, and maintenance.					
Calibration function	Specific resistance : Based on the specified compensation coefficient for the cell constant (parameter input) Temperature: Calibrated by comparing with the reference thermometer					
Transmission output hold feature	Selectable from the Previous value hold and the Optional value hold. (However, only the previous value hold is available in the maintenance mode.)					
Self-diagnosis function	·Sensor diagnosis (Short-circuit and disconnection of the temperature sensor) ·Out of the measurement range ·A/D converter scale over ·Converter error					
Temperature compensation	·Based on the temperature characteristics of extra deionized water (reference temperature : 25˚C) ·Based on the reference temperature and user-defined temperature coefficient (reference temperature : 5˚C to 95˚C)					
Temperature compensation range	0˚C to 100˚C					
Extra deionized water Specific resistance selection	Measurement Unit	MΩ·cm kΩ·m	18.23 (standard), 18.18, 18.24 182.3 (standard), 181.8, 182.4			Select from options Shown on the Left.
Clipping function	When the measured value is above the upper limit of the measurement range derived from the specified specific resistance, the specified resistance is used as the measured value.					
Ambient environment	Temperature: -5 ˚C to 45˚C, Relative humidity: 20% to 85% (without dew condensation)					
Power supply	100V to 240V AC ±10%, 50/60Hz, 10VA (max.) or 24V DC ±10%, 5W (max.) (specified when ordering)					
Protective structure	Panel: IP65, Rear case: IP20, Terminal: IP00 (Indoor-use panel installation type)					
Mass	Approx. 400g					
Conforming standards	CE Marking, FCC Part15					
Compatible sensor	ERF –series resistance sensor, cell constant 0.01/cm					

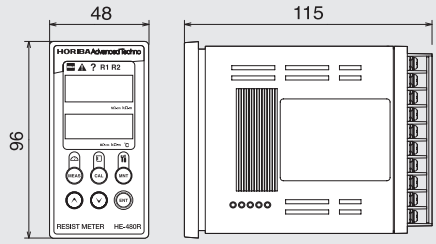
■Resistivity sensor code chart

Model	Cell constant	Connection	Wetted material	Temperature inspection	Terminal shape	Cable length	Specifications
ERF							Resistivity sensor
	-001						Cell constant : 0.01/cm
		-L					Cable-attached type
		-C					Connector type
			-T				Titanium(Acceptable temperature range : 0 to 80˚C)
				-N			Without temperature inspection
				-R			With 0˚C temperature inspection
				-S			With pair calibration*1
					-Y		Y terminal (standard)
					-O		Round terminal (special order)
					None		When connector type is selected
						-10	10m (standard)
						-XX	Designated cable length (special order)*2
						None	When connector type is selected*3

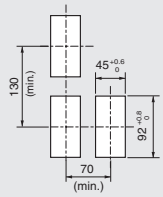
*1.The sensor and converter are calibrated together before shipping
*2.Limit cable extensions to a max. 50 m. (Relay boxes cannot be used.)
*3.A connector cable(CK-10M/20M/30M, etc.) is separately required for connector type sensors.

External dimensions Unit: mm (in)

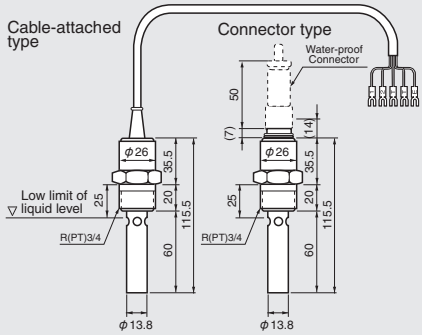
■Converter HE-480R



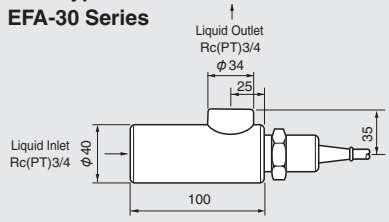
Panel Cut Size



■Resistivity sensor ERF-001 Series



■Flow Type Holder EFA-30 Series



Please read the operation manual before using this product to assure safe and proper handling of the product.

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http://www.horiba-adt.jp/index_e.htm

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