ULVAC

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ULVAC SHOWCASE

Hot Cathode Gauge
Transducer Type
ST200 Series

ST200-A / R / E

New series of transducer type "G-RTAN series Multi Ionization Gauge" that is capable of connection to differet type sensor heads.
This product, which is a triode type ionization gauge, is capable of longer life stable measurement in harsh environment for vacuum gauges because of low deterioration of sensitivity.
Improved to be more user-friendly taking over the concept of long-life and low running cost.

Features

・High usability: Set point setting, condition check, etc. by connecting PC/Android.

・Filament life notification function: An advance warning can be made before the life of ionization vacuum gauge by watching flilament power.

・ULVAC own concept: Capable of connection of different measurement range sensor heads according to application.

・Compact: Significantly miniaturized compared to the previous series (56% reduction of controller volume). World's smallest class.

・Larger selection: EtherCAT spec to be available in addition to analog output spec and serial communication spec.

・World's first metal type triode ionization gauge: Long life even if in harsh environment and no worry of such damage as glass type.

・Wide range measuremnt: Measurment from atmospheric pressure to ultra figh vacuum ($1 \times 10^{+5}$ to 1×10^{-5} Pa) is possible (when using with an optional unit SWU10-R).

・Precise atmospheric pressure sensing: Atmospheric pressure check for chamber open is available (when using with an optional unit SAU).

Applications

・Ultimate pressure check or process control for vacuum equipment for OLED touch panels.

・Ultimate pressure check for industial vacuum equipment such as vacuum furnaces.

・Measurement in hydrocarbon rich atmosphere.

・In case that replacement cycle of sesnosr head is required.

*Please contact in case of using corrosive gases (halogen gases).

Specifications

Model	ST200-A	ST200-R	ST200-E (scheduled for release)
Type	Analog output type	Serial communication type	EtherCAT communication type
Applicable ionization gauge sensor head	SWT-16(NW16), SWT-25(NW25)		
Connectable sensors	Multi ionization gauge ST200: 1 Pirani vacuum gauge sensor unit SWU10-R: 1 (option) Pressure sensro unit SAU: 1 (option)		
Repeatability(N_2)	ST200 simple mode: ±2%		
Sampling time	60 ms, 5x moving average		
Value output	Output voltage: 0 to 10 VDC, LOG output: 0.75 V/1 decade Pressure conversion equation: $V = 7.25 + 0.75 \times (LogP - 2)$ $P = 10^{\{(V-7.25)/0.75+2\}}$		
Update time	60msec		
Control input signals	FIL ON/OFF、FIL　1/2、DEGAS ON/OFFOperates with open collector input, negative logic	-	-
Control output signals	Sensor error, Setpoint 1/2/3, Emission valid Watch of electric power of filament Rating: $24V_{MAX}$、$50mA_{MAX}$ Saturation voltage:1V	-	-
Communication type	-	RS232C/RS-485	EtherCAT
LED display	POWER: Power, ERROR LED (Blinking pattern and color change depending on each mode)		
Emission current	2mA (1×10^{-2}Pa or lower), 10μA (1×10^{-2}Pa or higher)		
Degas Method	Electron bombard type 2mA, 330V		
Maximum pressure of sensor	$2 \times 10^{+5}$Pa ($1.5 \times 10^{+3}$ Torr, $2 \times 10^{+3}$ mbar) (Absolute pressure)		
Internal volume of sensor	$17cm^3$(SWT-16), $19cm^3$(SWT-25)		
Operating temperature range	10 to 50℃ (50 to 122?)		
Operating humidity range	15 to 80% (not condensing)		
Storage temperature	-20 to 65℃ (-4 to 149?) (At non-energizing, not condensing)		
IP rating	IP30		
Power supply voltage	DC20 to 28V (Ripple, Noise 1% or less) Lower than 8W		
Input/output connector	D-sub15-pin (M2.6 screw)		
Weight	Sensor unit: approx. 280g, sensor head(SWT-16, SWT-25): 80g		
Dimension W x D x H	69mm×63mm×90mm (sensor unit only)		
Applicable standard	CE		
Option	Multi Ionization Gauge Sensor head	SWT-16（NW16），SWT-25（NW25） Material of gas contacting sections: Filament 1, 2 -Ir/Y_2O_3 Other: PtC-Mo, SUS304, W, Kovar glass, Kovar/Ni plating	
	Pirani Vacuum Gauge	SWU10-R *Previous model SPU also available	
	Pirani Vacuum Gauge Sensor head	SWP-16(NW16), SWP-25(NW25), SWP-R1/8(R1/8), SWP-P18(Φ18 pipe end), SWP-P15(Φ15 pipe end), SWP-CF16(ICF034) Material of gas contacting sections : Filament-Pt, Other-BS/Ni plating, Ni, Solder	
	Pressure switch	SAU(NW16) Material of gas contacting sections : SUS316L	
	Unit cable	GUC-200P (for SWU10-R)： 0.5m, 1m, 2m GUC-200A (for SAU)： 0.5m, 1m, 2m	
	Display unit	1CH：ISG1(DC24V)	

Display cable	Cable betweeen ST200 and desiplay unit 2m, 5m, 10m, 15m, 20m, 25m, 30m, 35m, 40m
Connector	I/O connector (D-sub15-soket（M2.6mm screw))
Others	Test certificate, Calibration certificate

ST200 series have three options; simple mode with a multi ionization gauge, combination mode with a multi ionization gauge and a pirani gauge (SWU10-R), and triple combination mode with a multi ionization gauge, a pirani gauge (SWU10-R) and a pressure switch (SAU)

Mode	ST200-A/ST200-R/ST200-E Simple mode	ST200-A/ST200-R/ST200-E ＋SWU10-R Combination mode	ST200-A/ST200-R/ST200-E ＋SWU10-R＋SAU Triple combination mode
Measurable pressure range	1.0×10^{-5} to $1.0\times10^{+1}$Pa	1.0×10^{-5} to $1.0\times10^{+5}$Pa	1.0×10^{-5} to $1.0\times10^{+5}$Pa
Accuracy	1.0×10^{-4} to $3.0\times10^{+0}$Pa: ±10%	1.0×10^{-4} to $1.0\times10^{+4}$Pa: ±10% $1.0\times10^{+4}$ to $1.0\times10^{+5}$Pa: ±20%	1.0×10^{-4} to $1.0\times10^{+4}$Pa: ±10% $1.0\times10^{+4}$ to $3.0\times10^{+5}$Pa: ±3%F.S.($3.0\times10^{+3}$Pa・Base temperature: 25℃)
Connection image	ST200	ST200　SWU10-R	ST200　SWU10-R　SAU
Measurable pressure range image			

Triple combination can be used when "atmospheric pressure" check required to open chamber.
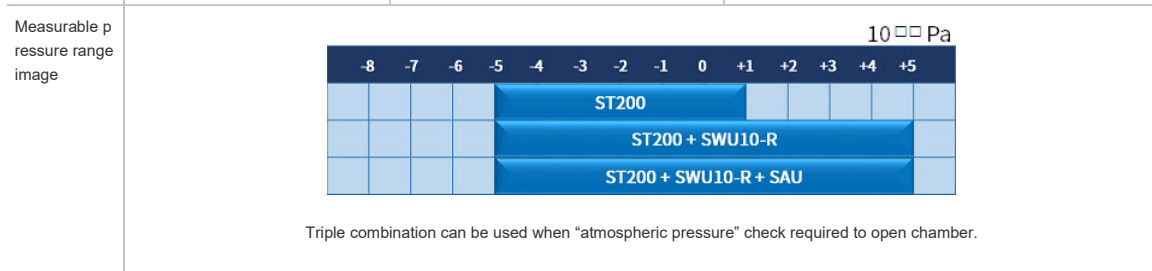
Image of coneection with PC/smartphone

Application software "UL-MOBI"

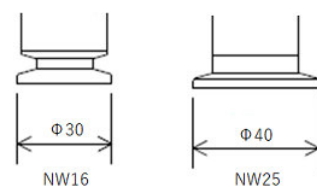| For PC	Download from ULVAC's website "ULVAC SHOWCASE" download center

For smartphone	Download from Google Play

Compatible devices

PC	Windows 10 64 bit or later
Smartphone	Android 6 or later, USB TypeC

Ordering code

contact the nearest distributor regarding other combinations than the following

Main unit	Sensor head	Fitting type	Ordering code
ST200-A (analog output spec)	SWT-16	NW16	210006964600
	SWT-25	NW25	210006964700
	SWT-16 with baffle	NW16	210006964800
	SWT-25 with baffle	NW25	210006964900
	Without sensorhead	-	210006965000
ST200-A + pirani unit SWU10-R combination (unit cable 5m)	SWT-16/SWP-16	NW16/NW16	210006969000
	SWT-25/SWP-25	NW25/NW25	210006969100
	SWT-1 with baffle / SWP-16	NW16/NW16	210006969200
	SWT-25 with baffle / SWP-25	NW25/NW25	210006969300
ST200-R (serial communication spec)	SWT-16	NW16	210006965100
	SWT-25	NW25	210006965200
	SWT-16 with baffle	NW16	210006965300
	SWT-25 with baffle	NW25	210006965400
	Without sensorhead	-	210006965500

Φ30 NW16

Φ40 NW25

ULVAC, Inc.