WGA-680A

Instrumentation Amplifier

●Equipment Incorporated

Models \ Types	Power Supply	TEDS	BCD	RS-232C	RS-485	CC-Link
WGA-680A-00	100 to 240 VAC					
WGA-680A-01		Yes	Yes			
WGA-680A-02		Yes		Yes		
WGA-680A-03		Yes			Yes	
WGA-680A-04						Yes
WGA-680A-10	10 to 30 VDC					
WGA-680A-11		Yes	Yes			
WGA-680A-12		Yes		Yes		
WGA-680A-13		Yes			Yes	
WGA-680A-14						Yes

High performance Instrumentation Amplifier for strain-gage transducers

- ●High-performance processing (Sampling Speed: 4000 times/s, 24-bit A/D converter)
- ●Substantial comparison functions (Extra high, high, OK, low, and extra low)
- ●Analog output (A D/A converter is equipped)
- ●Various optional interfaces (BCD output, RS-232C, RS-485, and CC-Link)
- ●Numeric data and comparators' LED Display in red, green, or orange

The WGA-680A series is compact, moderate price instrumentation amplifiers enable direct reading of physical quantities such as loads due to high-speed sampling.
Comparator, hold functions and D/A converted signal output are standard equipped.
Suitable for measurement and control of quickly changing phenomena by press-fitting or pressing.

Specifications

Channels	1
Applicable Sensors	Strain-gage transducers
Applicable Bridge Resistance	87.5 to 1000 Ω (Up to four 350 Ω transducers connected in parallel.)
Bridge Excitation	10, 2 VDC, selectable
Measuring Range	±3.2 mV/V (Input range including zero adjustment range)
Zero Adjustment Range	Within measurement range (Not retained when power supply interrupted)
Nonlinearity	Within ±(0.02% FS+1digit)
Stability	Zero point: Within ±0.25 μVRTI/°C
	Sensitivity: Within ±0.01%/°C
Sampling Speed	4000 times/s
AD Resolution	24 bits
Calibration	Actual load calibration, Sensitivity registering calibration, and numeric value registering calibration
	Smoothing Functions
	Filters: 10, 30, 100, Flat (300 Hz)
	Attenuation: (-12±1) dB/oct.
	Moving average: None, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, and 2048 times
	Min. scale: 1, 2, 5, 10, 20, 50, 100, 200, 500, and 1000 counts
Auto Zero compensation	Zero Tracking (Auto digital zero in the preset range)
	Approximated zero compensation: Indication is made zero when the reading is in a preset range of 0 to 9.
Adding Functions	Setting range: ±99999
Original value display functions	±3.2 mV/V
	Accuracy: Within ±0.1%FS
Comparator Functions	
Points: 4	
Patterns: Registers 4 groups of pattern files (comparative values) and enables switching through setting of functions	
Types: extra high (HH), high (HI), OK, low (LO), extra low (LL)	
Setting range: ±99999	
Hysteresis Width: 0 to 99999	
Comparison modes: normal, at hold	
High Low Assignment: Enables assigning high or low to each comparator	
Hold Functions	
Digital peak/bottom hold (Without analog peak/bottom hold)	
Types: Arbitrary point hold, peak hold, bottom hold, peak to peak hold, interval definition peak hold, time specification peak hold, interval definition peak hold, time specification peak hold, interval definition peak to peak hold, time specification peak to peak hold	
Delay time: 0.00 to 9.99 s	
Detect time: 0.01 to 9.99 s	
Display	Range: ±99999 (Decimal point to be put anywhere.)
	Indicator: Character height 14 mm, 7-segment LED, in red, green, and orange
	Update: 0.12, 0.24, 0.49, 0.98, 1.95, 3.90, 7.80, and 15.6 times/s, in normal mode
	Modes: Normal/hold
	Comparators: 5 points (Limit high (HH), high (HI), OK, low (LO), limit low (LL))
	Status: 2 points (HOLD, LOCK)

Analog (D/A) Output	
Voltage Output: ±10 V (Load resistance 2 k Ω or more), arbitrary scaling possible	
Current Output: 4 to 20 mA (Load resistance 500 Ω or less), corresponds to voltage output of 0 to 10 V.	
Conversion Speed: 4000 times/s	
Nonlinearity: Within ±0.1%FS	
Setting contents: Display value of zero, display value of full scale	
Control Output	Points: 5
	Types: HH, HI, OK, LO, and LL
	Formats: Open collector (Capacity: 30 VDC, 20 mA max.)
Control Input	Points: 3
	Types: Zero order, hold order, and reset order
	Signal Formats: Non-voltage contact signal, or open collector (Capacity: 12 VDC, 5 mA or more)
Level Test Functions	Display of arbitrary values possible
	Display additional functions: Disabled, enabled
	Setting range: ±99999
	Level test: ON, OFF
Power Supply	100 to 240 VAC, or 10 to 30 VDC
Dimensions	96 W ×96 H ×126 D mm (Excluding protrusions)
Weight	Approx. 750 g (Without option)
Operating Temperature	-10 to 50°C
Operating Humidity	20 to 80%RH (Non-condensing)
EMC Directive	EN61326-1 (Class A)
Low Voltage Directive	EN61010-1, EN61010-2-030 (Installation category II, Pollution degree 2, Measurement category O)
RoHS Directive	EN50581

Standard Accessories CD-R (Instruction Manual)
Unit seal
Screwdriver (-)

Optional Accessories
●AC power cables
P-23 for 100 VAC, P-28 for 200 VAC

●Input cables
6-conductor NDIS connector U-29 to U-32
U-29 (50 cm), U-30 (1 m), U-31 (2 m), U-32 (5 m)
4-conductor NDIS connector U-33 to U-36
U-33 (50 cm), U-34 (1 m), U-35 (2 m), U-36 (5 m)

■Option: BCD Output	
Output	Data: 20 bits (4-bit×5), POL (Minus polarity), Over, EOC (End of Conversion), Holding section, Detecting section
	Output format: Open collector (Capacity: 30 VDC, 20 mA max.)
Input	Points: 2 (Hold, Output prohibited)
	Format: Non-voltage contact signal, or open collector signal (Capacity: 12 VDC, 5 mA or more)
Output Rate	Approx. 15.6, 31.3, 62.5, and 125 times/s
Output logic	Data Logic: Negative logic/Positive logic
	EOC Logic: Negative logic/Positive logic
	Polarity Logic: Negative logic/Positive logic

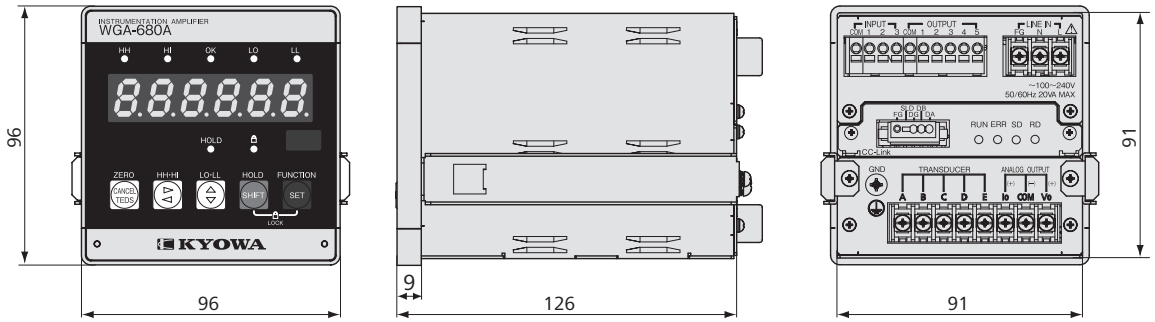
■Option: RS-232C	
Signal System	RS-232C full duplex system
Communication Methods	Synchronous
Baud Rate	2400, 4800, 9600, 19200 bps
Bit Configuration	Data bits: 7
	Stop bit: 1
	Parity bit: Odd number
	Flow Control: None

■Option: RS-485	
Signal System	RS-485 half duplex system
Communication Methods	Synchronous
Baud Rate	2400, 4800, 9600, 19200 bps
Bit Configuration	Data bits: 7
	Stop bit: 1
	Parity bit: Odd number
	Flow Control: None
	Device ID: 1 to 99

■Option: TEDS	
Applicable transducer	Should have the information according to IEEE template No. 33, cable length should be 30 m or less.
Interfaces	Compatible with IEEE1451.4 Mixed Mode Transducer Interface Class 2
Calibration Function	Automatic sensitivity registration by reading TEDS data

■Option: CC-Link	
Version	1.10
Station Types	Remote device station
Occupied Stations	1, 2, 4
Slave Stations	1 to 64
Connection Cable	CC-Link version 1.10 compliant cables (3-conductor twisted pair shielded cable)
Baud Rate	10 M, 5 M, 2.5 M, 625 k, and 156 k bps

■Dimensions



WGA-680A-04

Terminal screw: M3