

WGA-710C

Instrumentation Amplifier



TEDS- compatible, Simple, Lightweight, Excellent Interference Immunity, Suitable for Industrial Measuring Instruments

- Key lock for mis-operation
- Suitable excitation supply for transducer is selectable
- Built-in remote signal detection circuit to realize high accurate measurement

It is a compact, lightweight, multi-functional and low-cost amplifier with display and it is designed to measure load, pressure, torque and displacement. Using low noise amplifier is helpful to achieve stable measurement. It is easy to conduct setting and control for each function by using keys. Since all setting values are recorded in a NVRAM, it still functions in case of power failure. It has been widely used in machinery, electric machinery, food and chemistry. Apart from production line control system.

※ Cannot be used with TEDS function together with remote signal detection.

Wide Application

Type

Model	type	AC power Voltage (V)	High/low limit Comparative function	Peak hold function	BCD data output	EA-232-D (RS-232C)	D/A Compact	Analog amplifier	8-step comparator
WGA-710C-0		100	●	●					
WGA-710C-0 A115		115	●	●					
WGA-710C-0 A200		200	●	●					
WGA-710C-0 A220		220	●	●					
WGA-710C-1		100	●	●	●				
WGA-710C-1 A115		115	●	●	●				
WGA-710C-1 A200		200	●	●	●				
WGA-710C-1 A220		220	●	●	●				
WGA-710C-2		100	●	●		●			
WGA-710C-2 A115		115	●	●		●			
WGA-710C-2 A200		200	●	●		●			
WGA-710C-2 A220		220	●	●		●			
WGA-710C-3		100	●	●				●	
WGA-710C-3 A115		115	●	●				●	
WGA-710C-3 A200		200	●	●				●	
WGA-710C-3 A220		220	●	●				●	
WGA-710C-4		100	●	●			●		
WGA-710C-4 A115		115	●	●			●		
WGA-710C-4 A200		200	●	●			●		
WGA-710C-4 A220		220	●	●			●		
WGA-710C-5		100	●	●				●	
WGA-710C-5 A115		115	●	●				●	
WGA-710C-5 A200		200	●	●				●	
WGA-710C-5 A220		220	●	●				●	
WGA-710C-6		100	●	●					●
WGA-710C-6 A115		115	●	●					●
WGA-710C-6 A200		200	●	●					●
WGA-710C-6 A220		220	●	●					●
WGA-710C-12		100	●	●	●	●			
WGA-710C-12 A115		115	●	●	●	●			
WGA-710C-12 A200		200	●	●	●	●			
WGA-710C-12 A220		220	●	●	●	●			
WGA-710C-14		100	●	●	●		●		
WGA-710C-14 A115		115	●	●	●		●		
WGA-710C-14 A200		200	●	●	●		●		
WGA-710C-14 A220		220	●	●	●		●		

Remote-sensing cannot be used simultaneously with TEDS

Specifications

■WGA-710C-0	
Number of Measuring Channels :	1
Applicable Transducers :	Strain gage transducers
Applicable Bridge Resistance :	87.5Ω to 10kΩ (Up to 4 transducers with 350Ω bridge resistance can be connected in parallel)
Measuring Range :	±3.2mV/V(±6400μm/m)
Excitation Voltage :	DC10V, 5V, 2.5V (selectable by the switch) Remote sensing possible for 120mA or less
Input Mode :	Balanced differential
Input Impedance :	10MΩ or more
Input Terminal Board :	Gage clamp type
Sensitivity Adjustment :	Automatic by internal calculation (accuracy within ±0.1%FS)
Display :	Max. ±9999 (Decimal point can be put anywhere) Character height 10mm, red LED Lowest place digit can be fixed to 0
Sampling Rate :	Approx. 15 times/sec.
Nonlinearity :	Within ±(0.03%FS+1 digit) (with transducer output 0.5mV/V)
Zero Stability :	±0.25μV _{FS} /°C, ±0.05%FS, 10% power voltage Sensitivity stability : ±0.01%/°C, ±0.05% FS, 10% power voltage
High/Low Limit Comparator :	
Number of setting points :	2 (high limit, low limit)
Response time :	200ms or less
Setting range :	0000 to ±9999
Contact output :	relay contact (1 transfer circuit/point)
Contact capacity :	AC250V, 0.5A (resistive load)
Hold Function :	ON/OFF switchover by panel key or external contact input





Mode Switchover : ON/OFF Switchover by panel key
No hold, point-based hold, peak hold, section-based peak hold, time-based peak hold
Frequency response range : DC to 1kHz
Digital Zero Function : Action input: by panel key or external contact input
Adding Function : Setting range: 0000 to ±9999
Original Value Monitor : Accuracy within±0.1%FS
Zero Tracking Function : Zero can be traced in changing quantities of ±1,2,5 counts each for delays of 20, 10 and 5 seconds, 9 ranges in total Setting is made by panel keys
Digital Filter Function : The number of moving averaging times is 4, 8, 16, 32, 48 or 64, selected by panel keys
TEDS-compatible :
Interface : Compatible with IEEE1451.4 Mixed Mode Transducer Interface Class2
Applicable Transducers : Should have the information according to IEEE Template No.33 Cable length should be 30m or less (Remote sensing cannot be used together with TEDS)
Operating Temperature/Humidity Range : -10 to 40°C, 80%RH or less (noncondensing)
Power Supply : AC100V±10%, 115V±10%, 200V±10%, 220V±10% (select one), 50/60Hz 20VA or less, DC11 to 30V on request
Dimensions : 72(W)×144(H)×188(D)mm (excluding protrusions)
Weight : Approx. 1.7kg
Panel Cut Dimensions : 136×68mm

Standard Accessories

AC power cable P-23 for AC 100V Spare fuse,
Miniature screwdriver for terminal board connection Unit seal
Panel mounting fixture
BCD output connector BCD-CONNE (57-30360 (DDK) or the
equivalent; attached to WGA-710C-1, 12, 14 only)
Instruction Manual

Optional Accessories AC power cable P-28 for AC 200V

Specifications (specify the desired one when ordering)

WGA-710C-1 with BCD data Output

It enables WGA-710C-1 to output indicated values as BCD (binary coded decimal) by connecting the optional dedicated printer 442B-K01 (refer to page P.4-references).

Output Mode : Isolated open collector output
Driving Capacity : DC30V, 20mA
Output Signals : 4-digital BCD value, minus sign, OVER signal,
print command (EOC); positive or negative logic
selected by the switch.

Input Command : BCD hold, output disable, negative logic
Connector : 57-40360 (DDK) or the equivalent

WGA-710C-2 with EIA-232-D (RS-232C)

EIA-232-D (RS-232C) enables this model to transmit indicated data and status signals and write preset high/low limit values to external equipment without digitizing.

Signal System : RS-232C full duplex system
Transmission Mode : Synchronous adjustment
Transmission rate : 4800bps
Bit Structure : 7 data bits, 1 stop bit
Odd parity bit
Connector : 17-13250-27 (DDK) or the equivalent

WGA-710C-3 with Analog Amplifier

This model is designed to amplify and output the analog signal of a transducer to external equipment without digitizing.

Measuring Range : ±3.2mV/V
Zero Adjustment Range : ±2.5mV/V
Sensitivity Adjustment Range : 0.5~3.0mV/V can be adjusted to 10V
Calibration : 1mV/V±0.1%
Voltage Output : ±10V (load resistance 2kΩ or more)
Nonlinearity within±0.03%
Current Output : 4 to 20mA (load resistance 350Ω or less)
corresponding to voltage output of 0~10V;
nonlinearity within ±0.1%FS
Frequency response range : DC~1kHz

WGA-710C-4 with D-A Converter

This model can output an analog signal with the digital indication. Digital zeroing, hold and smoothing functions are provided.
Output Analog Signal Level : ±10V, 20mA for the full scale setting on the chassis
Zero Adjustment Range : Within ±10%FS
Sensitivity Adjustment Range : Within ±10%FS
Nonlinearity : Within ±0.1%FS

Frequency Response : Depends on the examination cycle (approx. 15 times/sec.) of the mainframe
Withstand Voltage : AC500V for one minute with the mainframe
Voltage Output : 0 to 10V (load resistance 2kΩ or more)
Current Output : 4 to 20mA (load resistance 350Ω or less) (corresponding to voltage output of 0 to 10V)

WGA-710C-5 with Isolation Analog Amplifier

This model is designed to amplify and output the analog signal of a transducer to external equipment without digitizing.
Measuring Range : ±3.2mV/V
Zero Adjustment Range : ±2.5mV/V
Sensitivity Adjustment Range : 1.0 to 3.0mV/V can be adjusted to 10V
Calibration : 1mV/V±0.1%
Withstand Voltage : AC500V for one minute with the chassis
Voltage Output : ±10V (load resistance 2kΩ or more),
nonlinearity within±0.05%FS
Current Output : 4 to 20mA (load resistance 350Ω or less)
(corresponding to voltage output of 0 to 10V)
nonlinearity within±0.1%FS
Frequency Response Range : DC to 1kHz

WGA-710C-6 with 8-step Comparator

This model provides 4 sets of high/low limits for comparison. The high/low limit relay (transformer contact) outputs the result of 1 set of high/low limits compared.
Number of Comparison Points : 8 (4 each high/low limits)
Setting Method : Select from external contact input and set by the panel keys
Setting Range : 0 to ±9999
Output System : Isolated open collector
Drive Capacity : DC30V, 20mA

Note: the relay contact output of the mainframe is selected from external contact input.

WGA-710C-12 with BCD Data Output / EIA-232-D(RS-232C)

This model enables simultaneous use of BCD data output and RS-232C.

WGA-710C-14 with BCD Data Output/D-A Converter

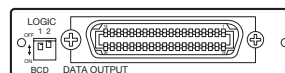
This model enables simultaneous use of BCD data output and D-A converter.

Optional Accessories

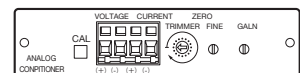
Connection cables between WGA-710C and NDIS connector plug
4-conductor cables U-17(50cm), U-18(1m), U-19(2m),
U-20(5m), bared at the tip to the mainframe and NDIS connector plug
to transducer 6-conductor cables U-25(50cm), U-26(1m),
U-27(2m), U-28(5m), bared at the tip to the mainframe and NDIS
connector plug to transducer
Dedicated printer 442B-K01

Card Panels by Functions

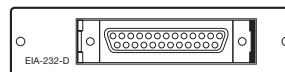
● BCD Data Output (WGA-710C-1)



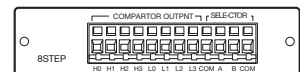
● Isolation Analog Amplifier (WGA-710C-5)



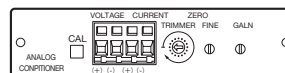
● EIA-232-D (RS-232C) (WGA-710C-2)



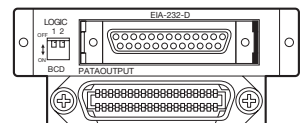
● 8-Step Comparator (WGA-710C-6)



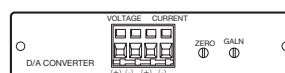
● Analog Amplifier (WGA-710C-3)



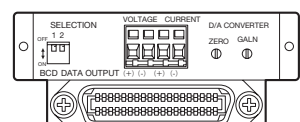
● BCD Data Output/EIA-232-D (WGA-710C-12)

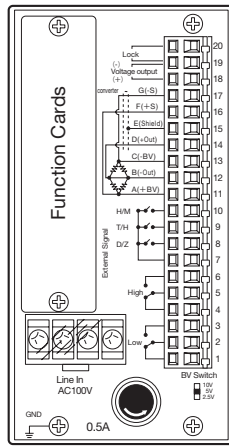


● D-A Converter (WGA-710C-4)



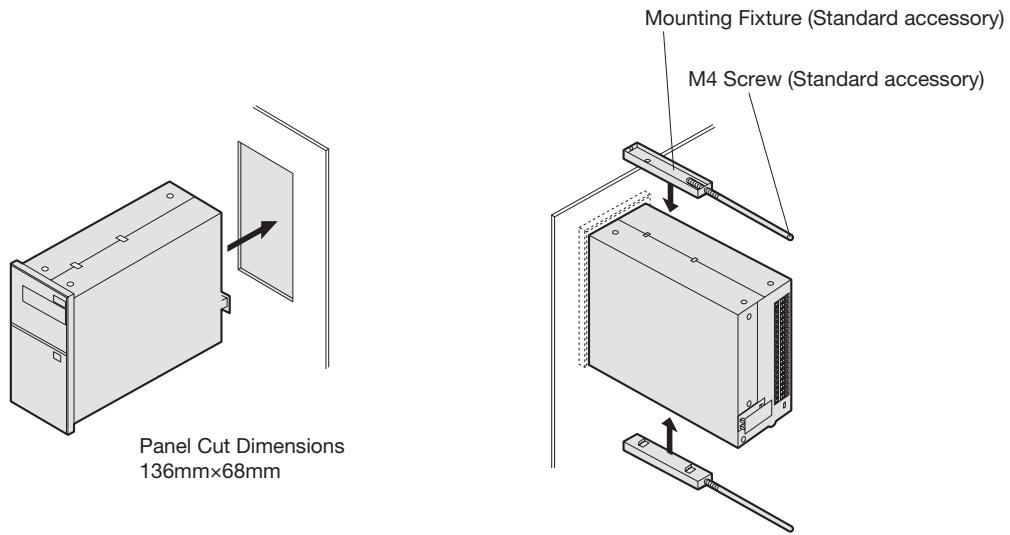
● BCD Data Output/D-A Converter (WGA-710C-14)





No.	Functions
20	Calibration restricted short circuit terminal
19	Signal common of 18 & 20
18	Voltage output
17	BV remote sense (-)
16	BV remote sense (+)
15	Shield
14	BV output (+)
13	BV output (-)
12	BV input (-)
11	BV input (+)
10	Hold command (H/M)
9	Hold command (T/H)
8	Digital zero command (D/Z)
7	External signal common
6	High limit relay contact out. (a contact)
5	High limit relay contact out. (COM)
4	High limit relay contact out. (b contact)
3	Low limit relay contact out. (a contact)
2	Low limit relay contact out. (COM)
1	Low limit relay contact out. (b contact)

■ Installation Example



■ Dimensions

