



# GC-1000R

Main controller Relay output type



\*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

## Specifications

|                                                  |                              |                                                                                                                                                                                                                                                                           |
|--------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                                            |                              | GC-1000R                                                                                                                                                                                                                                                                  |
| Input/output points                              | Safety inputs                | 14                                                                                                                                                                                                                                                                        |
|                                                  | Safety outputs               | 4                                                                                                                                                                                                                                                                         |
|                                                  | Safety relay output          | 1 (3a)                                                                                                                                                                                                                                                                    |
|                                                  | AUX outputs                  | 4                                                                                                                                                                                                                                                                         |
|                                                  | Test outputs                 |                                                                                                                                                                                                                                                                           |
| Maximum number of connectable expansion units    |                              | -                                                                                                                                                                                                                                                                         |
| Maximum number of connectable remote I/O modules |                              |                                                                                                                                                                                                                                                                           |
| GC-Link ports                                    |                              | 2 ports                                                                                                                                                                                                                                                                   |
| Safety input specifications                      | Input device                 | Contact output device or PNP output device                                                                                                                                                                                                                                |
|                                                  | Input type                   | Type3                                                                                                                                                                                                                                                                     |
|                                                  | ON level (voltage/current)   | Min. 11 V/2 mA                                                                                                                                                                                                                                                            |
|                                                  | OFF level (voltage/current)  | Max. 5 V/1.5 mA                                                                                                                                                                                                                                                           |
|                                                  | Short-circuit current        | Si 0 to 3: Approx. 5 mA<br>Si 4 to 13: Approx. 3 mA                                                                                                                                                                                                                       |
|                                                  | Protection circuit           | Surge protection circuit, wrong wiring protection circuit                                                                                                                                                                                                                 |
|                                                  | Maximum cable length         | Max. 100 m <a href="#">328.1'</a>                                                                                                                                                                                                                                         |
| Safety output specifications                     | Output type                  | PNP transistor output (DC-13, Type 0.5, Protected outputs)*1                                                                                                                                                                                                              |
|                                                  | Maximum load current         | 500 mA                                                                                                                                                                                                                                                                    |
|                                                  | Residual voltage (during ON) | Max. 2.0 V                                                                                                                                                                                                                                                                |
|                                                  | Leakage current (during OFF) | Max. 0.5mA                                                                                                                                                                                                                                                                |
|                                                  | Maximum capacitive load      | 0.5 µF                                                                                                                                                                                                                                                                    |
|                                                  | Load wiring resistance       | Max. 2.5Ω                                                                                                                                                                                                                                                                 |
|                                                  | Protection circuit           | Overcurrent protection circuit, reverse connection protection circuit                                                                                                                                                                                                     |
| Safety relay output specifications               | Maximum cable length         | Max. 30 m <a href="#">98.4'</a>                                                                                                                                                                                                                                           |
|                                                  | Output type                  | Relay (3a) (Externally-protected outputs)*2                                                                                                                                                                                                                               |
|                                                  | Rated load (resistance load) | 250 VAC 6A / 30 VDC 6A*3                                                                                                                                                                                                                                                  |
|                                                  | Rated load (inductive load)  | 240 VAC 2A (AC-15) / 24 VDC 1A (DC-13)                                                                                                                                                                                                                                    |
|                                                  | Relay output mechanical life | Resistance load (250 VAC 6A/30 VDC 6A): Min. 100,000 times<br>Resistance load (250 VAC 1A/30 VDC 1 A): Min. 500,000 times<br>Inductive load (AC-15: 240 VAC 2 A): Min. 100,000 times (cosφ = 0.3)<br>Inductive load (DC-13: 24 VDC 1 A): Min. 100,000 times (L/R = 48 ms) |
|                                                  | Maximum cable length         | Max. 100 m <a href="#">328.1'</a>                                                                                                                                                                                                                                         |
|                                                  | B10d                         | With rated load: 400,000 times<br>With low load: 2,000,000 times                                                                                                                                                                                                          |
| Test output specifications                       | Output type                  | PNP transistor output*4                                                                                                                                                                                                                                                   |
|                                                  | Maximum load current         | 100 mA                                                                                                                                                                                                                                                                    |

|                           |                              |                                                                                                                                                                        |
|---------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | Protection circuit           | Overcurrent protection circuit, reverse connection protection circuit                                                                                                  |
|                           | Maximum cable length         | Max. 100 m <a href="#">328.1'</a> <sup>*5</sup>                                                                                                                        |
| AUX output specifications | Output type                  | Transistor output (PNP/NPN selectable by wiring)<br>PNP output (DC-13, Type 0.1, Protected outputs) <sup>*1*4</sup>                                                    |
|                           | Maximum load current         | PNP: 100 mA, NPN: 20 mA                                                                                                                                                |
|                           | Residual voltage (during ON) | Max. 2.0 V                                                                                                                                                             |
|                           | Leakage current (during OFF) | Max. 0.5 mA                                                                                                                                                            |
|                           | Protection circuit           | Overcurrent protection circuit, reverse connection protection circuit                                                                                                  |
|                           | Maximum cable length         | Max. 30 m <a href="#">98.4'</a>                                                                                                                                        |
|                           |                              |                                                                                                                                                                        |
| Communication interface   | USB                          | USB2.0                                                                                                                                                                 |
|                           | Ethernet                     | -                                                                                                                                                                      |
| Network functionality     |                              |                                                                                                                                                                        |
| Others                    | LCD display                  | 1.77-inch color LCD                                                                                                                                                    |
|                           | Display buttons              | 4 points (3 operation keys + 1 BACK key)                                                                                                                               |
| Applicable standards      | EMC                          | EMS: IEC 61131-2/-6, EN61131-2/-6<br>EMI: IEC 61131-2, FCC Part15B Class A,<br>ICES-003, Class A                                                                       |
|                           | Safety                       | IEC 61508, EN 61508 SIL3<br>IEC62061 SIL CL3<br>ISO/EN13849-1:2015 Cat. 4, PL e, UL1998                                                                                |
| Dimensions                |                              | 85×95×90 mm <a href="#">3.35"×3.74"×3.54"</a> (W×D×H)                                                                                                                  |
| Power supply              | Power voltage                | 24 VDC (-20 to +20%) Class 2                                                                                                                                           |
|                           | Power consumption            | Max. 200 mA                                                                                                                                                            |
| Environmental resistance  | Ambient temperature          | -10 to +55 °C <a href="#">14 to 131 °F</a> (No freezing)                                                                                                               |
|                           | Relative humidity            | 5 to 85% (No condensation)                                                                                                                                             |
|                           | Storage temperature          | -25 to +70 °C <a href="#">-13 to 158 °F</a> (No freezing)                                                                                                              |
|                           | Operating altitude           | Max. 2000 m <a href="#">6561.7'</a>                                                                                                                                    |
|                           | Overvoltage category         | II<br>III (relay output part of GC-1000R and GC-S1R)                                                                                                                   |
|                           | Pollution degree             | 2                                                                                                                                                                      |
|                           | Vibration resistance         | Frequency: 5 to 9 Hz, Half amplitude: 3.5 mm <a href="#">0.14"</a><br>Frequency: 9 to 150 Hz, Acceleration: 10 m/s <sup>2</sup><br>10 times each in X, Y, Z directions |
|                           | Shock resistance             | Acceleration: 150 m/s <sup>2</sup> , Operating time: 11 ms, 3 times each in X, Y, Z directions                                                                         |
| Material                  |                              | Polycarbonate                                                                                                                                                          |
| Weight                    |                              | Approx. 360 g                                                                                                                                                          |

<sup>\*1</sup> Paragraph 6.4.6 Temporary overload of IEC 61131-2 supports up to 1.2 times the maximum load current.

<sup>\*2</sup> To comply with the requirements of IEC61131-2, connect 10 A fast blow fuse (IEC 60217) in series to each contact.

<sup>\*3</sup> Check the derating characteristics described later.

<sup>\*4</sup> AUX outputs (NPN output) and test outputs do not comply with paragraph 6.4.6 of IEC 61131-2.

<sup>\*5</sup> When the test output is branched and connected to multiple safety input devices, the total branched cable length must not exceed 400 m [1312.3'](#).

# Dimensions

\* Download CAD file or product manual for larger image/text and more detail.

GC-1000R

