

**COMMUNICATION LEVEL CONVERTER FOR
RS-232C/RS-422A(RS-485)**

**COM-103C
INSTRUCTION MANUAL**

IMCOM04-E3

Thank you for purchasing this **COM-103C**. Before using this product, please carefully read this manual for its correct use. In addition, after reading the manual keep it available easily anytime.



● Wiring precautions

- If failure or error of this instrument could result in a critical accident of the system, install an external protection circuit to prevent such an accident.
- In order to prevent instrument damage or failure, protect the power line and the input/output lines from high currents by using fuses with appropriate ratings.

● Power supply

- In order to prevent instrument damage or failure, supply power of the specified rating.
- In order to prevent electric shock or instrument failure, do not turn on the power supply until all of the wiring is completed.

● Installation environment

In order to prevent fire, explosion or instrument damage, never use this instrument at a location where inflammable or explosive gases or vapour exist.

● Never touch the inside of the instrument.

In order to prevent electric shock or burns, never touch the inside of the instrument. Only RKC service engineers can touch the inside of the instrument to check the circuit or to replace parts. High voltage and high temperature sections inside the instrument are extremely dangerous.

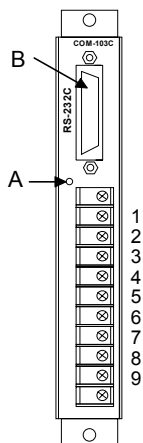
● Never modify the instrument.

In order to prevent accident or instrument failure, never modify the instrument.

● Maintenance

- In order to prevent electric shock, burns or instrument failure, only RKC service engineers may replace parts.
- In order to use this instrument continuously and safely, conduct periodic maintenance. Some parts used in this instrument have a limited service life and may deteriorate with time.

1. NAME OF PARTS AND TERMINALS



Name of parts

- A : Power lamp
- B : Connector for RS-232C Interface

Terminals

Terminals	Contents
1	SG Communication terminals
2	T/R(A) RS-422A or RS-485
3	T/R(B)
4	
5	Unused
6	
7	Power supply voltage terminals
8	90 to 264 V AC
9	Ground terminal

- SG : Signal Ground
- T/R(A) : Transmission Terminal (A)
- T/R(B) : Transmission Terminal (B)

2. MOUNTING

2.1 Mounting cautions

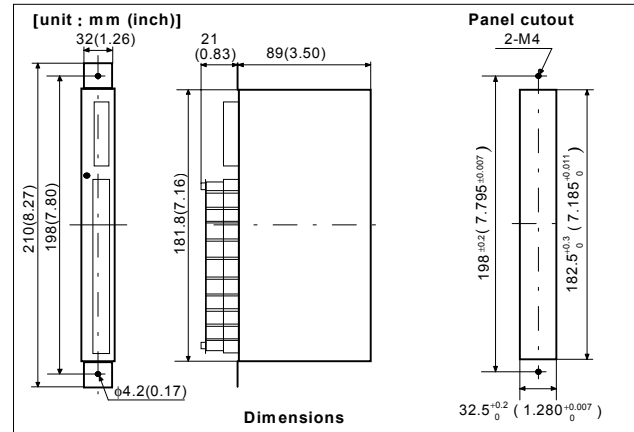
Avoid the following when selecting the mounting location.

- Ambient temperature of less than 0 °C (32 °F) or more than 50 °C (122 °F).
- Ambient humidity of less than 45 % or more than 85 % RH.
- Rapid changes in ambient temperature which may cause condensation.
- Corrosive or inflammable gases.
- Direct vibration or shock to the mainframe.
- Water, oil, chemicals, vapor or steam splashes.
- Excessive dust, salt or iron particles.
- Excessive induction noise, static electricity, magnetic fields or noise.
- Direct air flow from an air conditioner.
- Should be used indoors where the system is not exposed to direct sunlight.
- Heat to be accumulated radiation heat.

2.2 Mounting method

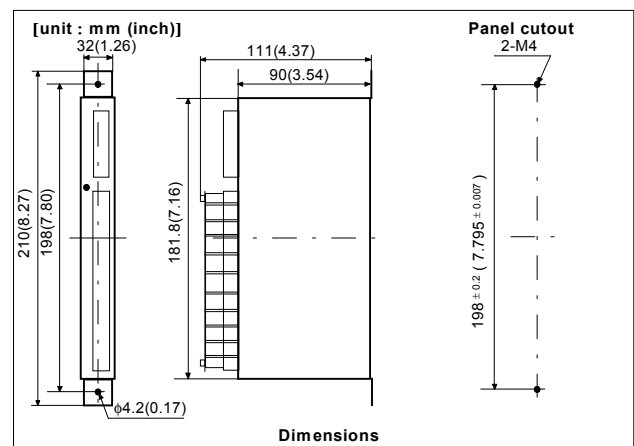
Rack mounting type (COM-103C-R)

- ① Make cutouts in the panel corresponding to the number of converters to be mounted by referring to panel cutout dimensions.
- ② Insert the converter into the cutout from the panel front.
- ③ Using a Phillips screwdriver, secure the converter from the terminal side with 2 setscrews (M4×6 SEMS pan-head screw). Screws provided by customer.



Wall mounting type (COM-103C-W)

- ① Drill holes corresponding to the number of converters to be mounted by referring to panel cutout dimensions.
- ② Using a Phillips screwdriver, secure the converter from the terminal side with 2 setscrews (M4×6 SEMS pan-head screw). Screws provided by customer.



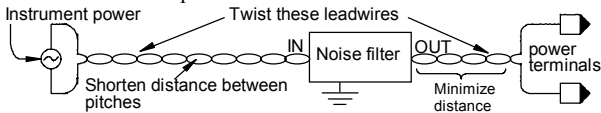
3. WIRING

3.1 Cautions for wiring

- (1) Conduct input signal wiring away from instrument power, electric equipment power and load lines to avoid noise induction.
- (2) For power supply wires, use twisted wires with low voltage drop.
- (3) Do not excessively tighten the terminal screws. In addition, use the solderless terminal appropriate to the screw size. (Screw size: M3×6, recommended tightening torque: 0.5 N·m [5 kgf·cm])

- (4) This instrument has no power supply switch nor fuses. Therefore, install the fuse close to the instrument and the switch, if required.
 Fuse type : Time-lag fuse
 Recommended fuse rating : Rated voltage : 250 V
 Rated current : 1 A
- (5) Conduct instrument power wiring so as not to be influenced by noise from the electric equipment power. If the instrument may be affected by external noise, a noise filter should be used.

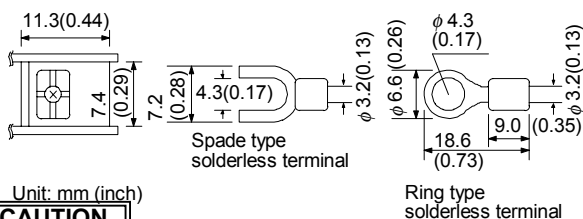
- Shorten the distance between twisted power supply wire pitches. The shorter the distance between the pitches, the more effective for noise reduction.
- Install the noise filter on the panel which is always grounded and minimize the wiring distance between the noise filter output side and the instrument power terminals.



- Do not install fuses and/or switches on the filter output signal since this may lessen filter effect.

3.2 Solderless terminal

Space of fitting a solderless terminal is 7.4 mm×11.3 mm. Therefore, use the solderless terminal suitable for a screw of M3. A free terminal screw of M3×6 is used.



Unit: mm (inch)
CAUTION

When the instrument is installed in a location where much vibration and shock exist, use ring type compression lugs, since spade type compression lugs may be disconnected from the terminals.

4. CONNECTION

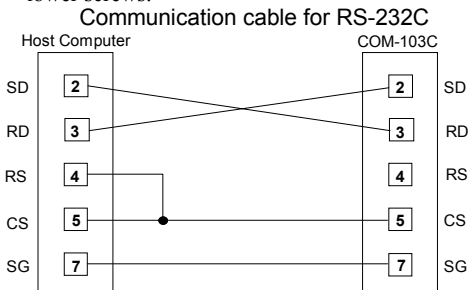
4.1 Connection method

This device supports communications between the RS-232C and RS-422A or RS-485 interfaces.

■ Connection procedure of host computer

Host computer and COM-103C are connected by a cable for RS-232C (Using the connector).

- ① Loosen the plug case screws, connect the cable core wires to the relevant connector pins, and mate the plug case with the wired connector before tightening the screws with a screwdriver.
- ② Plug the communication connector connected with the cable ① into the instrument connector (See the terminal plate diagram.)
- ③ Then, using a screwdriver, secure the connector with 2 upper and lower screws.



Accessories

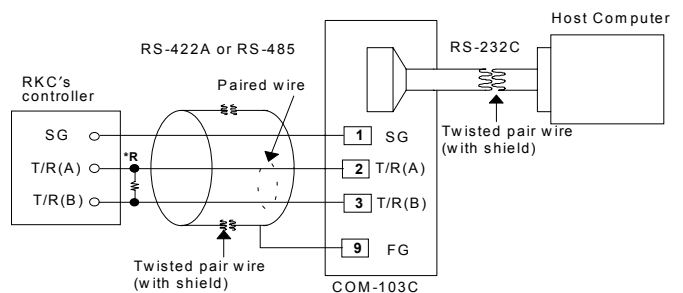
- Connector ...HDBB-25P (Hirose Electric Co., Ltd. or equivalent)
- Plug case ...HDB-CTF (Hirose Electric Co., Ltd. or equivalent)

■ Connection procedure of controller

COM-103C and controller are connected by a twisted pair wire (shielded). (Using the terminals #1, #2, #3 of COM-103C.)

The twisted pair wire should be prepared by the user.

For details of connection procedure, see the communications instruction manual for using RKC's controller.

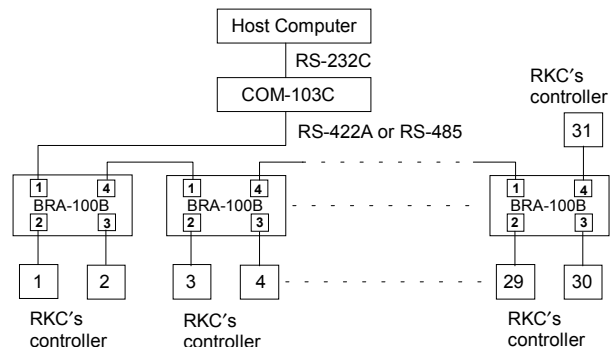


*R : Use a terminal resistor with a combined resistance of more than 100 Ω.

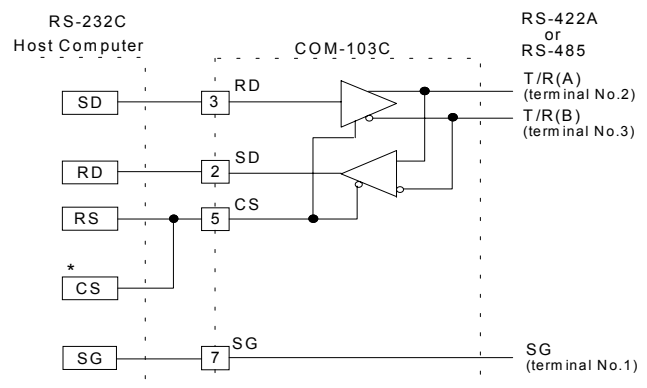
4.2 Multidrop connection example

If branched with our instrument BRA-100B, the transmission distance between COM-103C and BRA-100B may be extended to some degree and multidrop connection becomes possible. The number of controllers that can be connected depends on the controller being used.

For details of RKC's BRA-100B, see the instruction manual.



4.3 Internal Connection



- *ON : Output the data of RS-232C side to RS-422A (RS-485) side.
- OFF : Output the data of RS-422A (RS-485) side to RS-232C side.