

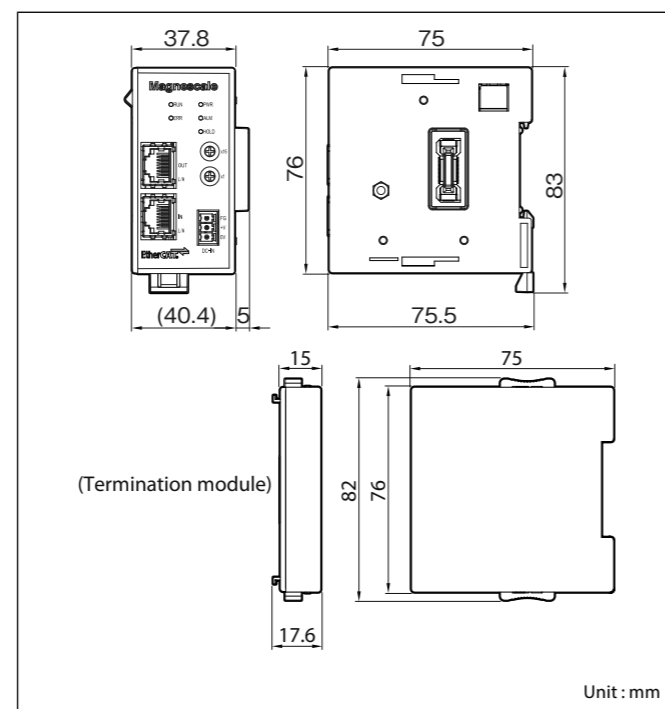
## 5. Specifications

Model name	MG80-EC
Supply voltage	DC 10.8 to 26.4 V
Power consumption	2.4 W or less (not including the MG80-CM and LZ80-K1/K2)
Number of connectables	MG80-CM : 16 modules*1 LZ80-K1 / K2: 2 modules
Power input socket	Terminal block ×1 (3-pin)
Interface connectors	RJ45 ×2 (shielding compatible)
Communication protocol	EtherCAT (100BASE-TX)
Transfer speed	100 Mbit/s
Maximum cable length	20 m (CAT5e shielded type recommended*2)
Node address setting	Rotary switch
Indicator lamps	RUN : Green/Red LED ×1 ERR : Green/Red LED ×1 Power : Green LED ×1, Alarm: Red LED ×1, Hold : Orange LED ×1
Operating temperature/humidity range	0 to +50 °C (no condensation)
Storage temperature/humidity range	-20 to +60 °C (20 to 90% RH)
Mass	Approximately 130 g
Mounting method	DIN rail

\*1 Up to 16 MG80-CM can be connected to each MG80-EC.  
The MG80-LM cannot be used.

\*2 The customer must provide the communication cables.

## 6. Dimensions



# Magnescale

## EtherCAT Interface Module

# MG80-EC

## Instruction Manual

Read all the instructions in the manual carefully before use and strictly follow them.

Keep the manual for future references.

### Safety Precautions

Magnescale Co., Ltd. products are designed in full consideration of safety. However, improper handling during operation or installation is dangerous and may lead to fire, electric shock or other accidents resulting in serious injury or death. In addition, these actions may also worsen machine performance.

Therefore, be sure to observe the following safety precautions in order to prevent these types of accidents, and to read these “Safety Precautions” before operating, installing, maintaining, inspecting, repairing or otherwise working on this unit.

### Warning Indication Meanings

The following indications are used throughout this manual, and their contents should be understood before reading the text.

#### Symbols requiring attention Symbols prohibiting actions




CAUTION





DO NOT  
DISASSEMBLE

#### **Warning** Failing to follow the precaution items given below may lead to severe injury or death.

-  Do not open the cover of the MG80-EC to disassemble or modify the unit, as this may result in burns or injury. These actions may also damage the internal circuitry.

#### **Caution** Failing to follow the precaution items given below may lead to injury or damage to surrounding objects.

-  The unit does not have an explosion-proof structure. Therefore, do not use the unit in an atmosphere charged with inflammable gases as this may result in fire.
-  Be sure to turn off the power before connecting or disconnecting power and signal connectors in order to prevent damage or misoperation.

### General precautions

- Before and during operations, be sure to check that our products function properly.
- Provide adequate safety measures to prevent damages in case our products should develop malfunctions.
- Use outside indicated specifications or purposes and modification of our products will void any warranty of the functions and performance as specified of our products.
- When using our products in combination with other equipment, the functions and performances as noted in this manual may not be attained, depending on operating and environmental conditions.

### 日本からの輸出時における注意

本製品（および技術）は輸出令別表第1の16の項（外為令別表16の項）に該当します。キャッチオール規制による経済産業省の許可要否につきましては、輸出者様にてご確認ください。

### For foreign customers

**Note:** This product (or technology) may be restricted by the government in your country. Please make sure that end-user, end user and country of destination of this product do not violate your local government regulation.

### [For U.S.A. and Canada]

THIS CLASS A DIGITAL DEVICE COMPLIES WITH PART15 OF THE FCC RULES AND THE CANADIAN ICES-003. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS.

- (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDERSIGNED OPERATION.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

EtherCAT®  
with the footnote  
“EtherCAT® is a registered trademark and patented technology,  
licensed by Beckhoff Automation GmbH, Germany.”

Magnescale Co., Ltd.

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MG80-EC  
2-A03-158-1B

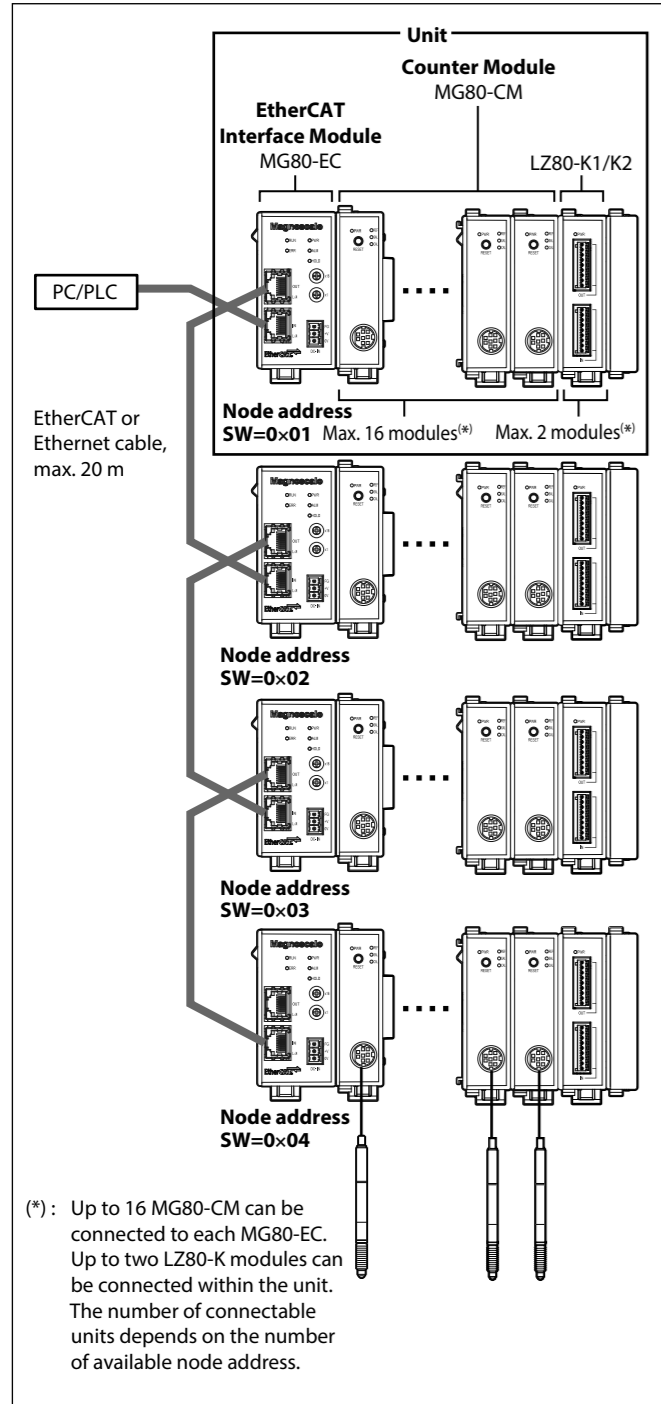
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## 1. Overview

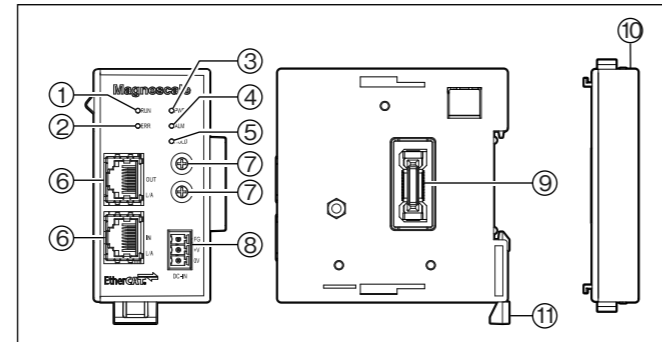
This product is an interface module for measuring systems that can acquire multi-axis measurement data. It is connected with a computer or PLC via EtherCAT and is used in combination with counter modules.

Refer to the MG80-EC Operating Manual available at the Magnescale website for the setting method.

www.magnescale.com\_Products\_Digital Gauge\_MG80-NE\_EI\_PN\_EC



## 2. Name and Function of Each Part

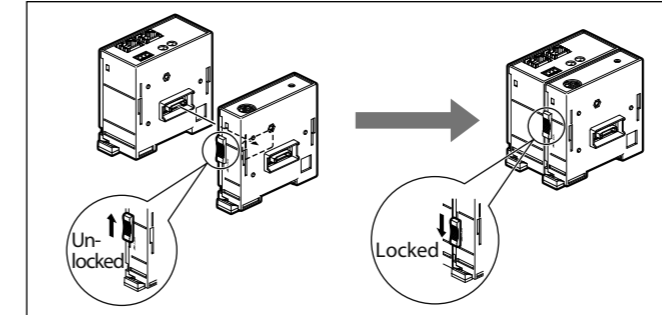


- ① **RUN lamp**  
Turns on/off according to the operating status.
  - ② **ERR lamp**  
Turns on/off according to the content of the abnormality.
  - ③ **POWER lamp**  
Lights green when the power is on.
  - ④ **ALARM lamp**  
Lights red when any counter module within the unit is in the alarm status.
  - ⑤ **HOLD lamp**  
Lights orange when the hold function (in which current value output data is latched or peak value data updating is stopped) is activated in any counter module within the unit.
  - ⑥ **EtherCAT or Ethernet port**  
This port is used for computer/PLC (master) and adaptor unit connection.  
Communicate using the EtherCAT and Ethernet protocol.  
Be sure to use "IN" port for EtherCAT connection with the master side and host side.  
Use a commercially available EtherCAT communication cable or Ethernet communication cable.  
<Communication cable>  
A CAT5e or higher shielded type is recommended.  
Cable length: 20 m or less
  - ⑦ **Node address setting switch**  
Set the node address.  
When the switch is set to 0x00, the IP address is fixed to 192.168.100.1, and the setting mode of various parameters of MG80-EC is set.
  - ⑧ **Power input connector**  
This connector is used to supply external power. (DC +12 to 24 V)
- | No. | Name | Description   |
|-----|------|---------------|
| 1   | FG   | Frame ground  |
| 2   | Vin  | DC+12 to 24 V |
| 3   | 0 V  | 0 V           |
- ⑨ **Module connector**  
Connects a counter module.
  - ⑩ **Termination module**  
This is the termination module. Connect to the endmost position of the unit.
  - ⑪ **DIN rail anchoring lever**  
This lock mechanism secures the main unit to the DIN rails.

## 3. Installation

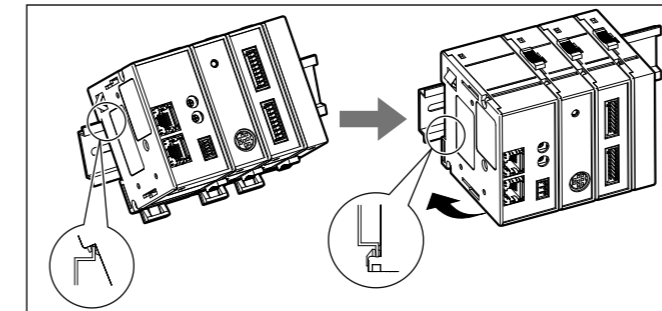
### 3-1. Connecting the Counter Modules

Unlock the slide locks of the counter module to be connected. Connect the connectors of the interface module and the counter module, and return the top and bottom slide locks to the locked positions to secure the module.



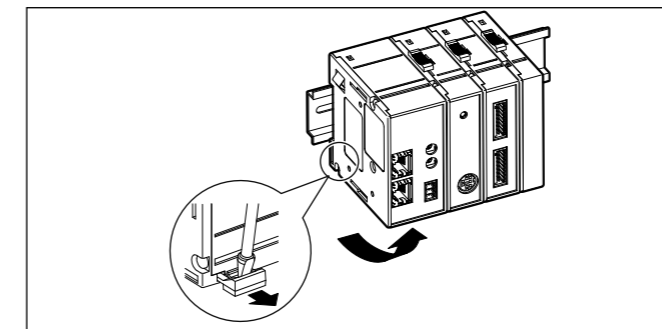
### 3-2. Installing the Unit on the DIN Rails

This product supports 35 mm wide DIN rails. When the interface unit is shipped from the factory, the tabs on the DIN rail anchoring levers are locked. Align the top side of the groove in the unit's rear panel with the top of the DIN rails, and install the unit by pushing it into position until a clicking sound is heard so that the bottom side of the groove fits snugly on the DIN rails.



### 3-3. Removing the Unit from the DIN Rails

While holding the unit in place so that it will not fall, pull down the DIN rail anchoring levers of all the modules until a clicking sound is heard.



## 4. Connections

### Caution

Do not supply power until all of the connections are complete. Make the following connections and settings. (Refer to "Name and Function of Each Part".)

- Power input connector connection
- Connections of each module (\*)
- Interface module link connection (EtherCAT or Ethernet cable)

(\*) Number of modules that can be connected within the unit and connection positions

Up to 16 counter modules can be connected to each interface module. Always connect the supplied termination module in the endmost position of the composition units.

