

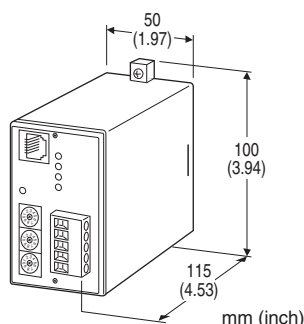
Field Network Modules 61-UNIT Series

ANALOG I/O MODULE

(CC-Link)

Functions & Features

- Interfacing analog I/O signals from/to Mini-M, Pico-M and other signal conditioner modules with CC-Link
- Saving power and I/O wiring inside an instrumentation panel



MODEL: 61C-[1][2]-[3][4]

ORDERING INFORMATION

- Code number: 61C-[1][2]-[3][4]
Specify a code from below for each [1] through [4].
(e.g. 61C-161-K/Q)
- Specify the specification for option code /Q
(e.g. /C01)

[1] NO. OF CHANNELS

- 04: 4 points
- 08: 8 points
- 16: 16 points

[2] I/O TYPE

- 1: Input
- 2: Output
- 3: Input/output (Select 16 for no. of channels)
(8 points for input, 8 points for output)
(Use Installation Base model: M8BS2-164)

[3] POWER INPUT

AC Power

K: 85 - 132 V AC

(Operational voltage range 85 - 132 V, 47 - 66 Hz)

DC Power

R: 24 V DC

(Operational voltage range 24 V \pm 10 %, ripple 10 %p-p max.)
(Specify power suffix code R (24 V DC) when the 61C is to be combined with the M8BS2.)

[4] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

RELATED PRODUCTS

- Installation Base (model: M2BS2)
- Installation Base (model: M8BS2)

PACKAGE INCLUDES...

- Terminating resistor (110 Ω , 0.5 W)

GENERAL SPECIFICATIONS

Construction: Plug-in

Connection

CC-Link: Euro type connector terminal (applicable wire size: 0.2 to 2.5 mm², stripped length 7 mm)

I/O: Via Installation Base (model: MxBS2)

Power input: Via Installation Base (model: MxBS2)

Housing material: Flame-resistant resin (black)

Isolation: I/O to CC-Link to power

Power indicator: Green LED turns on with power supplied.

CC-Link COMMUNICATION

CC-Link: Conforms to Version 1.10

Station type: Remote device station

Station No. setting: Rotary switch; 1 - 64

Number of occupied stations:

61C-04x: 1 station

61C-08x: 2 stations

61C-161: 4 stations

61C-162: 4 stations

61C-163: 2 stations

Remote I/O (RX, RY) is fixed to 32 points.

Baud rate setting: Rotary switch

(156kbps(factory setting), 625kbps, 2.5Mbps, 5Mbps, 10Mbps)

Transmission cable: Approved for CC-Link

L RUN indicator: Red LED turns on in a normal condition.

L ERR. indicator: Red LED turns on or flashes in an abnormality; off with wire breakdown.

SD indicator: Red LED turns on when transmitting.

RD indicator: Red LED turns on when receiving.

INPUT SPECIFICATIONS

■ Analog Input

Input range: 1 – 5 V DC

Input resistance: $\geq 1 \text{ M}\Omega$

(Each input must be isolated by signal conditioners. Non-isolated modules such as M2BW and M8BW are not usable.)

A/D conversion

Moving averaging: 4 samples

Sampling rate: 160 ms

A/D conversion output: Signed binary

Signal range 0 – 100 % is converted into hexadecimal 0000 – 2710 (0 – 10000). -15 to 0 % is a negative range represented by 2's complements.

Overall range is represented by hexadecimal FA24 – 2CEC (-1500 – +11500), for -15 – +115 %.

■ A/D CONVERSION DATA

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RWr n+0	SIGN BIT			INPUT 1 A/D CONVERSION DATA												
RWr n+1	SIGN BIT			INPUT 2 A/D CONVERSION DATA												
RWr n+2	SIGN BIT			INPUT 3 A/D CONVERSION DATA												
RWr n+3	SIGN BIT			INPUT 4 A/D CONVERSION DATA												
...																
RWr n+7	SIGN BIT			INPUT 8 A/D CONVERSION DATA												
...																
RWr n+11	SIGN BIT			INPUT 12 A/D CONVERSION DATA												
...																
RWr n+15	SIGN BIT			INPUT 16 A/D CONVERSION DATA												

RWr n+0 through RWr n+3 for 4 inputs.

RWr n+0 through RWr n+7 for 8 inputs or inputs of 16-input/output.

RWr n+0 through RWr n+15 for 16 inputs.

OUTPUT SPECIFICATIONS

■ Analog Output

Output range: 1 – 5 V DC

Load resistance: 20 k Ω minimum

(Output must be isolated with signal conditioners.

When the transmission line is open, the last value sampled before failure is held. Non-isolated modules such as M2BW and M8BW are not usable.)

D/A conversion input: Signed binary

Signal range 0 – 100 % is converted into hexadecimal

0000 – 2710 (0 – 10000).

-15 to 0 % is a negative range represented by 2's complements.

Overall range is represented by hexadecimal FA24 – 2CEC (-1500 – +11500), for -15 – +115 %.

■ D/A CONVERSION DATA

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RWw n+0	SIGN BIT			OUTPUT 1 D/A CONVERSION DATA												
RWw n+1	SIGN BIT			OUTPUT 2 D/A CONVERSION DATA												
RWw n+2	SIGN BIT			OUTPUT 3 D/A CONVERSION DATA												
RWw n+3	SIGN BIT			OUTPUT 4 D/A CONVERSION DATA												
...																
RWw n+7	SIGN BIT			OUTPUT 8 D/A CONVERSION DATA												
...																
RWw n+11	SIGN BIT			OUTPUT 12 D/A CONVERSION DATA												
...																
RWw n+15	SIGN BIT			OUTPUT 16 D/A CONVERSION DATA												

RWw n+0 through RWw n+3 for 4 outputs.

RWw n+0 through RWw n+7 for 8 outputs or outputs of 16-input/output.

RWw n+0 through RWw n+15 for 16 outputs.

INSTALLATION

Power consumption

•AC: Approx. 4 VA

•DC: Approx. 4 W (160 mA)

Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Installation Base (model: MxBS2)

Weight: 250 g (0.55 lb)

PERFORMANCE in percentage of span

A/D conversion: $\pm 0.1 \%$

D/A conversion: $\pm 0.1 \%$

Temp. coefficient: $\pm 0.015 \%/^{\circ}\text{C}$ ($\pm 0.008 \%/^{\circ}\text{F}$)

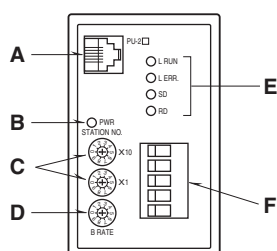
Permissible power failure duration: $\leq 10 \text{ msec.}$

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute

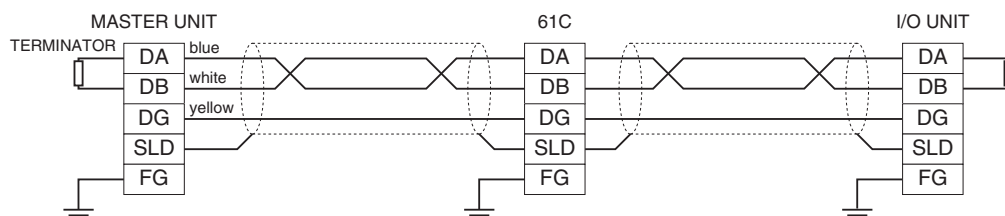
(I/O to CC-Link to power)

EXTERNAL VIEW

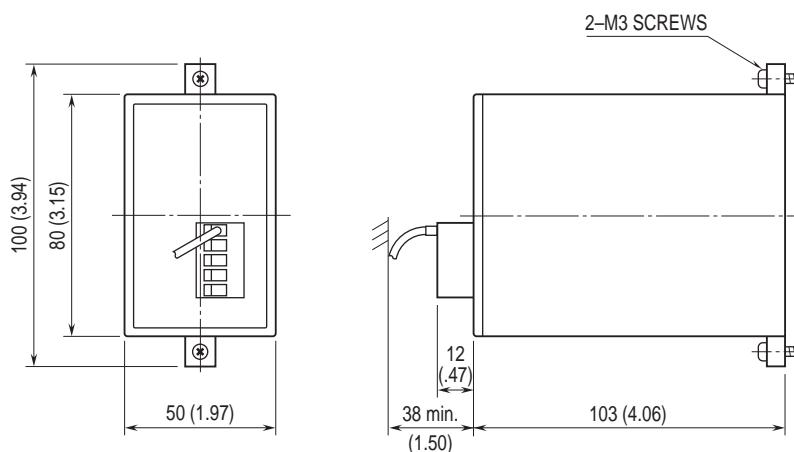


- A: Modular jack for factory calibration
- B: Power LED
- C: Station No. Setting
- D: Baud rate Setting
- E: Status indicator LED
- F: Euro type connector terminal for CC-Link

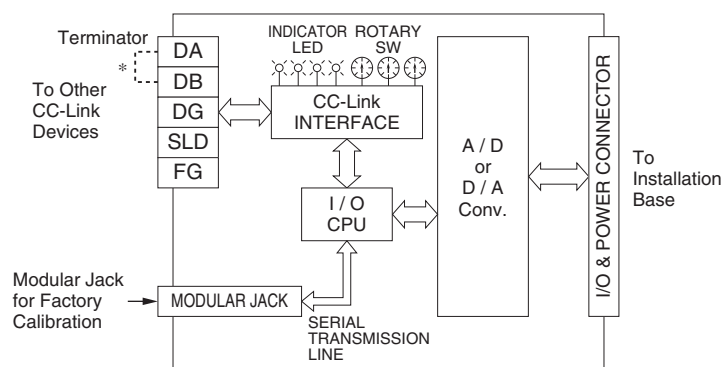
COMMUNICATION CABLE CONNECTIONS



EXTERNAL DIMENSIONS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Attach the terminating resistor when the module is at the termination of a transmission line.



Specifications are subject to change without notice.