

NAIS

RS485 communication type Message Runner **KP3R**

Compact Simple Display Unit

Introducing the new KP3R featuring
RS485 communication
Connect up to 31 units.



Message Runner KP3R
ARCT1B236E '04.6

New

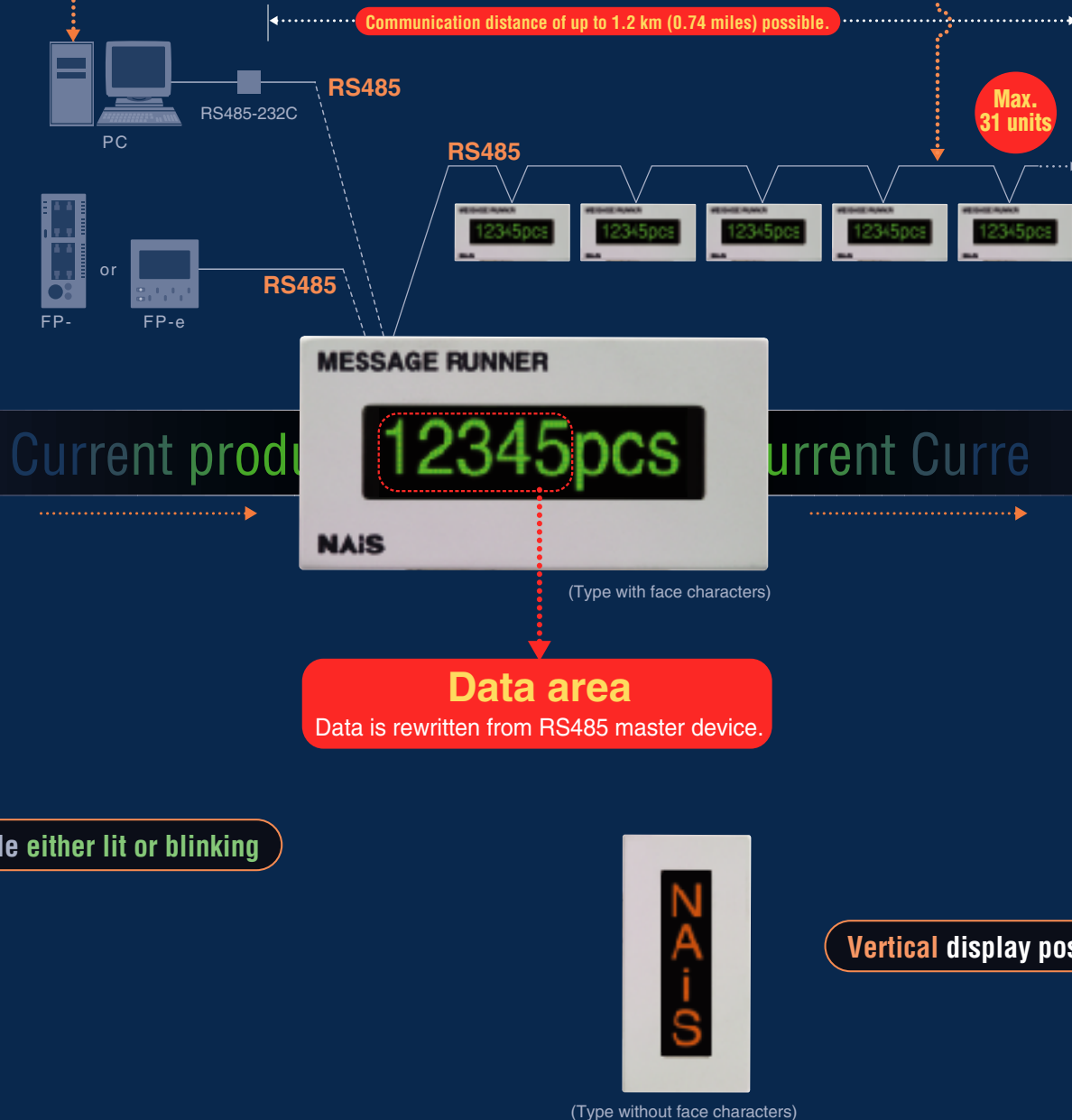
Compact and capable of RS485 communication, multiple **KP3R** Message Runners can be controlled by a PC or PLC for message switching and data rewriting

*Up to 31 units can be connected.

Capable of **RS485 communication**, up to **31 units** can be connected and controlled.

Message rewriting is possible when connected

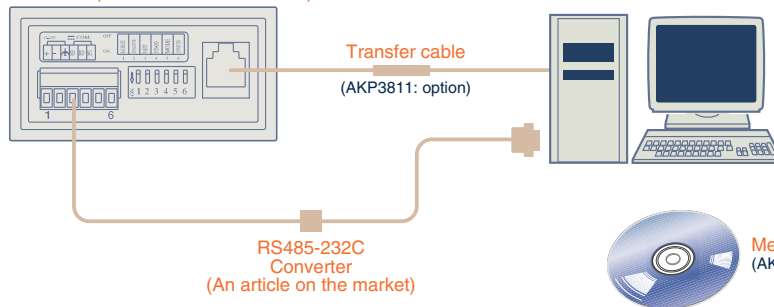
Easy to create and save **64 different messages**.



All screen displays are superimposed.

Message creation and setting possible from PC

Rear side (AKP33123 or AKP33127)



Use an exclusive transfer cable AKP3811 (option) for setting and transferring messages.
*Use a transfer cable for RS485 type. Refer to the terminal layout diagram and connect between the body's COM port (terminal block) and the serial port on the PC by way of RS485-232C converter (An article on the market).
Note. Multi purpose protocol only.

Up to 32 (or 16) characters a message, either lateral or vertical

The easy-to-read LCD displays eight characters. 32 characters message can be displayed with scrolling (slow, medium or fast). (For vertical display, the messages are up to 16 characters.)

Selectable message stand-by function

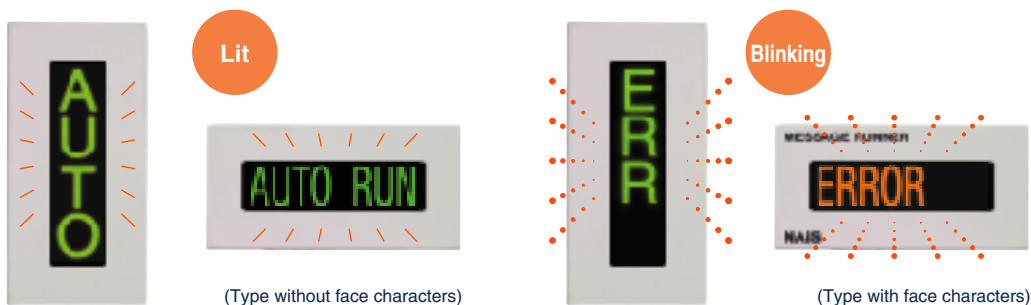
The stand-by function is selectable for each message. Message stand-by function means that if the next signal comes in during a message display, a new message is displayed after the current message finishes.

Message rewriting is possible when connected

The contents of messages can be over-written when multiple units are connected.
(Using a creation list, the message content of each station can be over-written using a PC.)

Character color display is selectable either green or orange. Also selectable either lit or blinking.

Selectable either green or orange for the character display in accordance with the status of machines, equipment, or devices. Error indication can be noticed easily by selection either lit or blinking.



Two protocols selectable

Multi-purpose protocol (message runner dedicated protocol)
MODBUS (RTU)

Display data format

ASCII
20 (hex) to 7E (hex), except of 3F hex on Multi-purpose protocol



Message Runner **KP3R**

PRODUCT TYPE

Types	Content	Part No.
Body (with face characters)	Message Runner KP3R (12 to 24 V DC)	AKP33123
Body (without face characters)	Message Runner KP3R (12 to 24 V DC)	AKP33127
Transfer cable unit	Message transfer cable, 1 m (With message creation software CD, English)* ^{Note 3}	AKP38203M
Transfer cable	Message transfer cable, 1 m* ^{Note 1}	AKP3811
Creation software(for KP3C)	CD * ^{Note 2, Note 3}	AKP38163M
Rubber packing	Use when water resistance is required for the panel.	AKP3804
Panel cover (black, with face characters)	A panel cover (ash gray) for the body is provided as standard.	AKP3801
Panel cover (black, without face characters)		AKP3805

Notes: 1. Transfer cable can be used for KP3S, KP3H, KP3C, and KP3R. Also, the connector for the PC serial port is a D-sub 9-pin connector. Please verify the connector on the PC you will use.
2. The transfer cable unit and the message creation software for KP3R can also be used with KP3S, KP3H, and KP3C.
3. European languages (French, German, Spanish, Italian) available, too.

SPECIFICATIONS

General specifications

Item	Description
Rated operation voltage	12 to 24 V DC
Operating voltage range	10.8 to 26.4 V DC
Power consumption	Approx. 1.5 W
Ambient temperature	0 to 40°C (32 to 104°F)
Ambient humidity	20 to 85% RH (no condensation)
Storage temperature	-20 to 60°C (-4 to 140°F)
Storage humidity	10 to 85% RH (no condensation)
Vibration resistance	10 to 55 Hz (1-minute cycle), double amplitude: 0.75 mm, 10 minutes on 3 axes
Shock resistance	98 m/s ² , 4 times on 3 axes
Power noise resistance	1,000 [p-p] min., pulse width: 50 ns and 1 μs between power supply terminals (based on noise simulator method)
Wiring induction noise	1,000 [p-p] min., pulse width: 50 ns and 1 μs (based on coupling adaptor method)
Static noise resistance	5 kV min. when conducting (panel surface and periphery), 10 kV min. when not conducting (panel surface and periphery)
Protective construction	IP66 (when rubber packing is used and from the front panel only)
Mass	Approx. 120 g (4.23 oz.)

Communication specifications

Item	Description
COM port type	RS485
Insulation type	Insulated against the internal circuit
Number of connectable units	31 max.
Communication method	Half duplex transmission
Transmission distance	1200 m (3937 ft.) max.*
Transmission speed	19,200 bps/9,600 bps (selectable using DIP switch)
Data length	8-bits/7 bits (selectable using DIP switch)
Stop bit	1 bit fixed
Parity	Odd/Even/None (selectable using DIP switch)
Protocol	·Multi-purpose protocol (exclusive for message runner) ·MODBUS (RTU)

Note: The shielded cables are recommended where electrical noises might occur.

Display specifications

Item	Description
Display element	Negative type dot matrix LCD
Display direction	Lateral/vertical
Number of dots	16 x 64 dots
Backlight	Green and orange (can be set for each message)
Character length	4 characters x 1 line for vertical display, 8 characters x 1 line for lateral display
Message length	Lateral display: max. 32 characters Vertical display: max. 16 characters
Character types	Internal PC character set (bit image display) Depending on the internal character type, some characters cannot be displayed (circled characters and Roman numerals and so on).
Character color control	Green and Orange (can be set for each message)
Character control	Running (scrolling) display (slow: approx. 6 s; medium: approx. 3 s; fast: approx. 1.5 s) Blinking display (0.4 s on/0.4 s off)

Data format

Data format	Numeric data range
ASCII	20 (hex) to 7E (hex), except of 3F (hex) on the multi purpose protocol.

External connection specifications

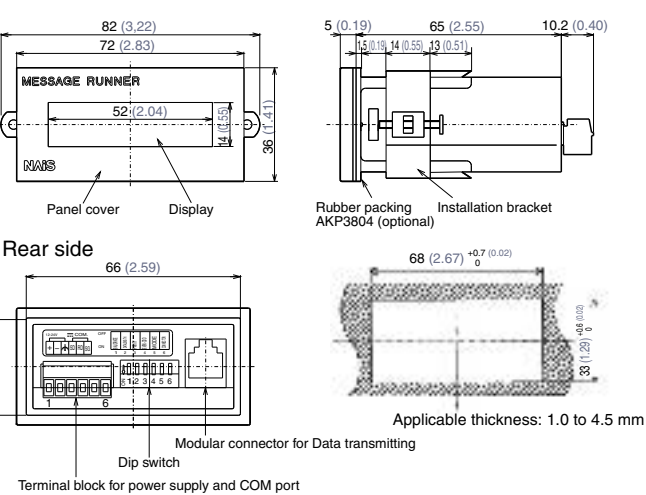
Item	Description
Power supply and RS485 communication	Connect via 6-pin terminal block (3 pins for power supply and 3 pins for RS485 communication)
Message transfer input	4 pins for modular connector (Connect exclusive message transfer cable.)

Memory specifications

Item	Description
Message storage	64 messages
Internal memory	Flash ROM (battery backup not required)

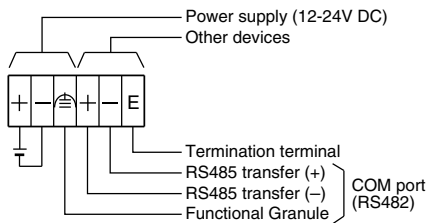
DIMENSIONS AND PART NAMES

Dimensions (unit: mm inch)



TERMINAL WIRING

Power supply and COM port terminal block



In case of terminating station, connect E terminal to - terminal, or irregular operation occurs.

DIP SWITCH FUNCTIONS

Number	Function	OFF	ON
1	Baud rate	19200bps	9600bps
2	Data length	8 bits	7 bits
3	Parity	Available	Not Available
4	Parity type	Odd	Even
5	Station No. display	Not displayed	Displayed
6	Connector selection	Modular	Terminal block

Select modular connector to transfer screens and make settings.
Select terminal block for RS485 communication.

DATA AREA IN MESSAGE, STAND-BY FUNCTION

Message creation and data indication in message

A "*" in the created message is recognized as data.
(Maximum of three data areas per screen.)
There can be up to 320 characters with "*" used in a total of 64 messages.
Example: In the message "Production ***** units", data from an external device can be written into the "*****" part.

Previous Message Runner models KP3S, KP3H and KP3C are also being sold.
For details, please see the appropriate catalog.

These materials are printed on ECF pulp.

The colors shown in this catalog may differ slightly from those of the actual product. These materials are printed with earth-friendly vegetable-based (soybean oil) ink.



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Specifications are subject to change without notice.

ARCT1B236E 200406-1YT

NAiS

Serial Communication Type **Message Runner KP3C**

Compact Simple Display Unit

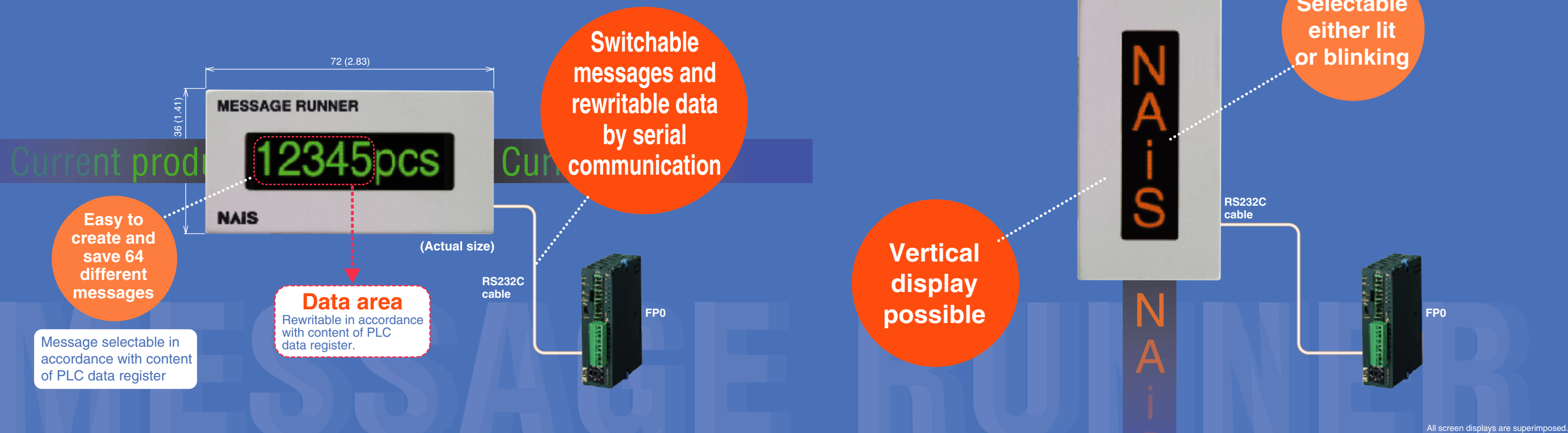


**Switchable messages and rewritable data
by serial communication**

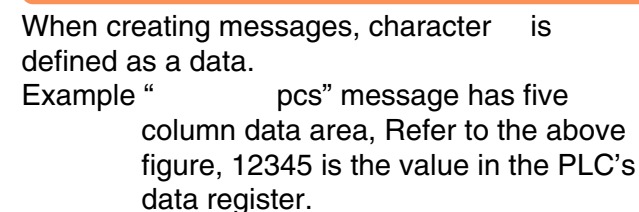


Message Runner KP3C
ARCT1B212E '03.7

New



Data area available with creating messages



*****pcs → 12345pcs

Rewritable

Three data areas can be up to one message.
One data area has 32 characters () maximum
in lateral. (16 characters in vertical)

Up to 32 (or 16) characters a message, either lateral or vertical

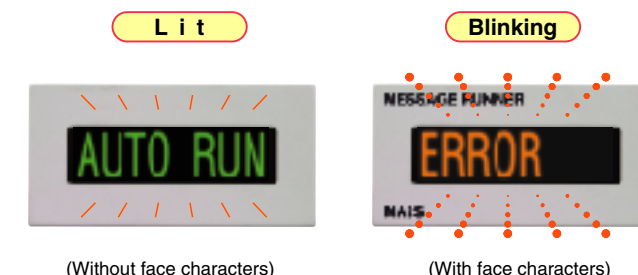
The easy-to-read LCD displays eight characters. 32 characters message can be displayed with scrolling (slow, medium or fast). (For vertical display, the messages are up to 16 characters.)

Selectable message stand-by function

The stand-by function is selectable for each message. Message stand-by function means that if the next signal comes in during a message display, a new message is displayed after the current message finishes.

Character color display is selectable either green or orange. Also selectable either lit or blinking.

Selectable either green or orange for the character display in accordance with the status of machines, equipment, or devices. Error indication can be noticed easily by selection either lit or blinking.



Five data formats selectable

16 bits with sign	32 bits with sign
16 bits without sign	32 bits without sign
	ASCII (20h to 7Eh)

The end-of-message signal possible to output

You can select whether or not to output the signal to an external device for each message. An internal relay for PLC can be specified and a flag turned on. (Flag resetting is performed by a PLC ladder program...) (This is called a scroll finished flag)

Four protocols selectable

MEWTOCOL for Matsushita Electric Works
MEWNET FP Series
Multi-purpose serial (exclusive)
Computer link for Mitsubishi MELSEC-FX Series
Host link for Omron SYMAC-C Series (exclusive)

Use an exclusive transfer cable AKP3811 (option)
for setting and transferring messages.

When not using AKP3811, refer to the terminal layout diagram and connect between the body's COM port (terminal block) and the serial port on the PC.

Enable to transfer either or

Message Runner **KP3C**

PRODUCT TYPE

Types	Contents	Part No.
Body (with face characters)	Message Runner KP3C (12 to 24 V DC)	AKP32113
Body (without face characters)	Message Runner KP3C (12 to 24 V DC)	AKP32117
Transfer cable	Message transfer cable, 1 m (*Note 1 and 2)	AKP3811
Message creation software	CD (Available for KP3S, KP3H and KP3C)	English (*Note 3) AKP38162M
		Korean (*Note 4) AKP38162K
		Taiwanese (*Note 4) AKP38162T
Rubber packing	Use when water resistance is required for the panel.	AKP3804
Panel cover (with face characters, color: black)	A panel cover (color: ash gray) for the body	AKP3801
Panel cover (without face characters, color: black)	is provided as standard.	AKP3805

Notes: 1. The transfer cable can be used for KP3S, KP3H, and KP3C. Also, the connector for the PC serial port is a D-sub 9-pin connector. Please verify the connector on the PC you will use.
2. It is also possible to make your own cable to connect between the PC serial port and the Message Runner, without using this transfer cable.
3. European languages (French, German, Spanish, Italian) available, too.
4. Coming soon.

SPECIFICATIONS
General specifications

Item	Description
Rated operation voltage	12 to 24 V DC
Operating voltage range	10.8 to 26.4 V DC
Power consumption	Approx. 1.1 W
Ambient temperature	0 to 40 °C (32 to 104 °F)
Ambient humidity	20 to 85 % RH (non-condensing)
Storage temperature	-20 to 60 °C -4 to 140 °F
Storage humidity	10 to 85 % RH (non-condensing)
Vibration resistance	10 to 55 Hz (1-minute cycle), double amplitude: 0.75 mm, 10 minutes on 3 axes
Shock resistance	98 m/s ² , 4 times on 3 axes
Power noise resistance	1,000 V [p-p] min., pulse wide: 50 ns and 1 s between power supply terminals (based on noise simulator)
Wiring induction noise	1,000 V [p-p] min., pulse wide: 50 ns and 1 s (based on coupling adaptor)
Static noise resistance	5 k V min. when conducting (at panel surface and periphery) 10 k V min. when not conducting (at panel surface and periphery)
Protective construction	IP66 (when rubber packing is used and from the front panel only)
Mass	Approx. 120 g (4.23 oz)

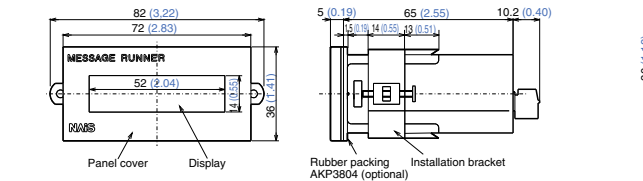
Communication specifications

Item	Description
Communication standard	Conforming to RS232C
Communication method	Half duplex transmission
Transmission distance	Max. 15 m 49.213 ft.*
Transmission speed	19,200 bps / 9,600 bps (selectable using dip switch)
Character bit	8 bits / 7 bits (selectable using dip switch)
Stop bit	1 bit fixed
Parity	Odd/Even/None (selectable using dip switch)
Protocol	MEWTOCOL for Matsushita Electric Works MEWNET FP Series Multi-purpose protocol (exclusive) Computer link for Mitsubishi MELSEC-FX Series Host link for Omron SYMAC-C Series (Select one out of the four types.)

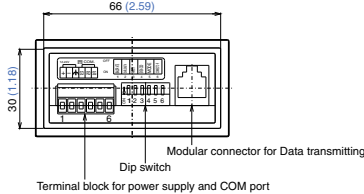
Note: The shielded cables are recommended where electrical noises might occur.

DIMENSIONS AND PART NAME

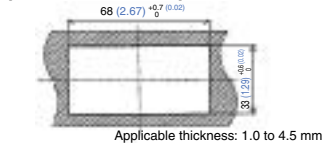
Dimensions (unit: mm inch)



Rear side

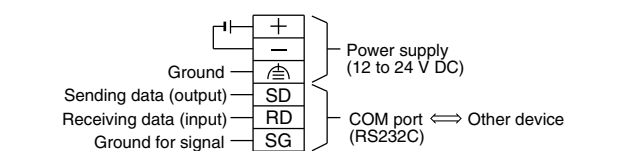


Panel cutout dimensions (unit: mm inch)



TERMINAL WIRING

Power supply and COM port terminal block



Cross cable is used to connect other device to COM port.

FUNCTIONS FOR DIP SWITCH

Number	Functions	OFF	ON
1	Baud rate	19,200 bps	9,600 bps
2	Data length	8 bits	7 bits
3	Parity	Yes	No
4	Parity type	Odd	Even
5	Mode selection	Data transmitting	Operation
6	Connector selection	Modular	Terminal block

Data transmitting mode: Mode for sending created message and settings from PC to message runner.
Operation mode: Mode for transferring data with a PLC, etc., to change messages and data.
Connector selection: Select the connector for use with the data transmitting mode.

Data area in message, Stand-by Function, and Scroll finished Flag

Message creation and data indication in message

A "*" in the created message is recognized as a data.
(Maximum of three data areas per screen.)
There can be up to 320 characters with "*" used in a total of 64 messages.
Example: In the message "Production **** units", data from an external device can be written into the "*" part. The content of the connected PLC data register is displayed in each data area.

Selection of standby function

When valid: A message being displayed will not change until it has finished even if a different message number arrives.
When invalid: A currently displayed message will immediately change when a different message number arrives.

Display specifications

Item	Description
Display element	Negative type dot matrix LCD
Display direction	Lateral/Vertical
Number of dot	16 X 64 dots
Backlight	Green and Orange (can be set for each message)
Character length	4 characters x 1 line for vertical display, 8 characters x 1 line for lateral display
Message length	Lateral display: max. 32 characters Vertical display: max. 16 characters
Character types	Internal PC character set (bit image display) Depending on the internal character type, some characters cannot be displayed (circled characters and Roman numerals and so on).
Character color control	Green and Orange (can be set for each message)
Character control	Running (scrolling) display (slow: approx. 6 s, medium: approx. 3 s, fast: approx. 1.5 s) Blinking display (0.4 s on/0.4 s off) The end-of-message signal possible to output (for each message)
Simultaneous message input processing	2 input memories, Latest message displayed (Valid/invalid can be selected according to message.)

Data format

Data format	Numeric data range
1 word (16 bits) with code: 1WDEC	-32768 to 32767
1 word (16 bits) without code: 1WDEC without code	0 to 65535
2 words (32 bits) with code: 2WDEC	-2147483648 to 2147483647
2 words (32 bits) without code: 2WDEC without code	0 to 4294967295
ASCII	20 to 7E (Depending on the protocol type, some characters cannot be displayed.)

External connection specifications

Item	Description
Power supply and Serial communication	Connect via 6-pin terminal block (3 pins for power supply, 3 pins for serial communication)
Message transfer input	4 pins for modular connector (Connect exclusive message transfer cable.)

Memory

Item	Description
Message storage	64 messages
Internal memory	Flash ROM (battery backup not required)