

Autonics INTELLIGENT DISPLAY UNIT (RS485 Communication Input) DS/DA-T Series INSTRUCTION MANUAL



Thank you for choosing our Autonics products. Please read the following safety considerations before use.

Safety Considerations

Please observe all safety considerations for safe and proper product operation to avoid hazards. Failure to do so may result in personal injury or product damage.

Warning Failure to follow these instructions may result in serious injury or death. **Caution** Failure to follow these instructions may result in personal injury or product damage.

Warning

- 1. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.
2. Install on a device panel to use.
3. Do not connect, repair, or inspect the unit while connected to a power source.
4. Check 'Unit description and function setting' before wiring.
5. Do not disassemble or modify the unit.

Caution

- 1. Use the unit within the rated specifications.
2. Use dry cloth to clean the unit, and do not use water or organic solvent.
3. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
4. Keep metal chip, dust, and wire residue from flowing into the unit.

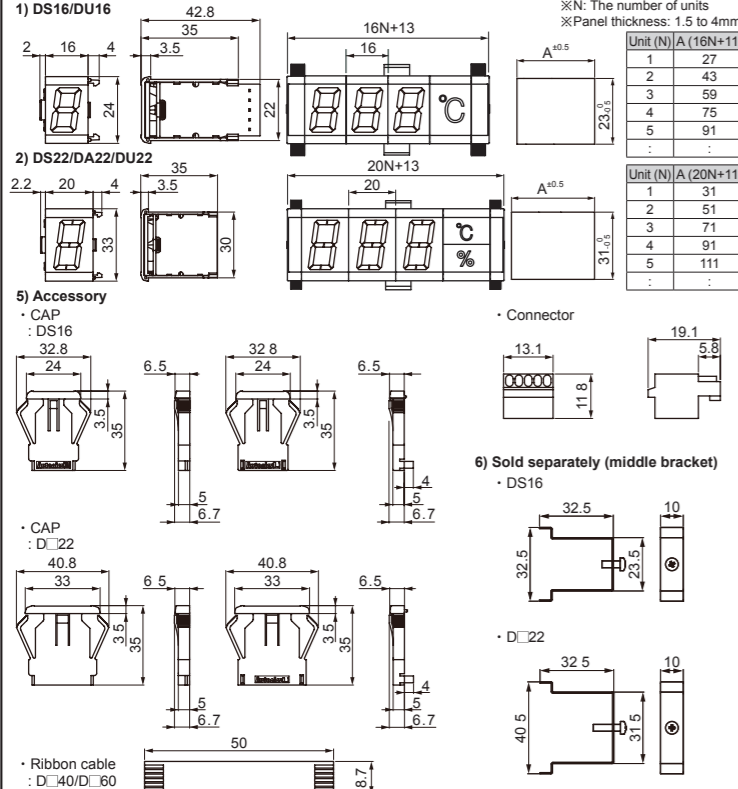
Model

Table with columns: Model, Display method, Size, Model, Display method, Size. Lists models DS16-T, DS22-T, DS40-T, DS60-T and their specifications.

Expansion unit

Table with columns: Model, Display method, Size, Model, Display method, Size. Lists expansion models DS16-E, DS22-E, DS40-E, DS60-E and their specifications.

Dimensions



The above specifications are subject to change and some models may be discontinued without notice. Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).

Specifications

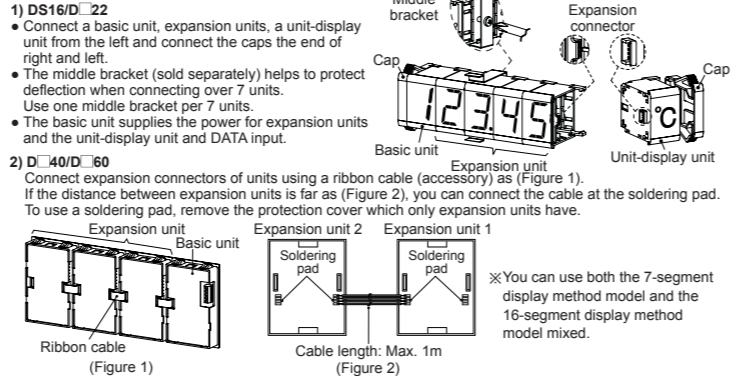
Table of specifications for Basic and Expansion units across models DS16-T, DS22-T, DS40-T, DS60-T. Includes input method, display color, power supply, current consumption, and environmental conditions.

Weight: The weight includes packaging. The weight in parenthesis is for unit only. The weight represents a pack of 3 units. The weight in parenthesis is for 1 unit only.

RS485 communication specifications

Table of RS485 communication specifications including Mode (Slave/Master), Comm. protocol, Connection type, Application standard, Max. connection, and Comm. type.

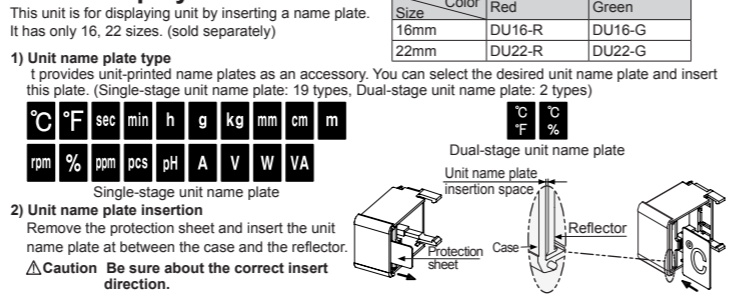
Connection of Units



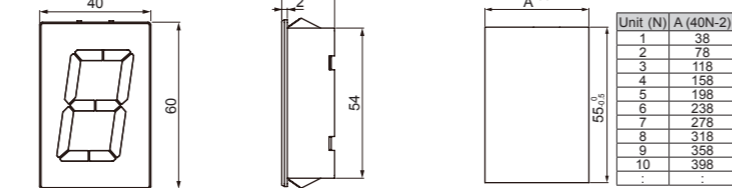
Removing Protection Cover

To operate the function set switch of the D40, D60 models, you should remove the protection cover. Press the connection parts (4-point) of the protection cover at the top/bottom of the product with a flat-head screwdriver and the protection cover is removed.

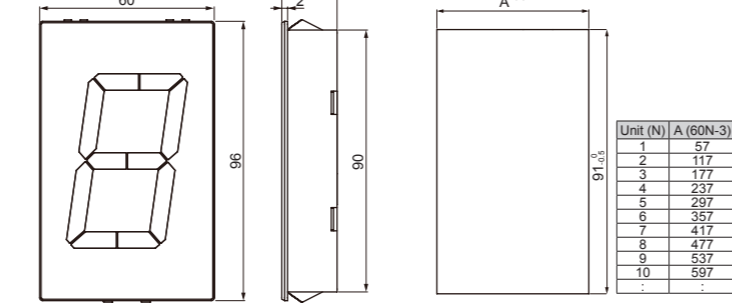
Unit-display Unit



DS40/DA40



DS60/DA60



Unit Description and Function Setting

Only the basic unit model has the function set switch and the input terminal. The DS16, D22 models have them at the side, and the D40, D60 models have them at the rear.

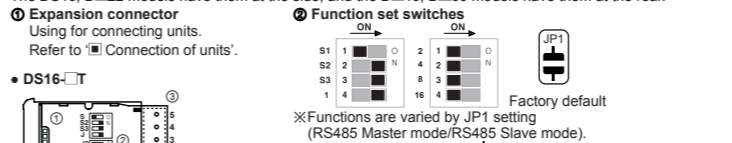
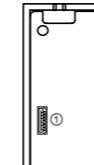


Table for RS485 Slave mode (JP1 Open) showing switch settings for S1, S2, S3, J1, J2, J4, J8, and J16 to configure communication parameters.

Table for RS485 Master mode (JP1 Short) showing switch settings for S1, S2, S3, J1, J2, J4, J8, and J16 to configure communication parameters.

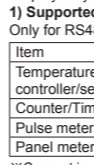
D22-T



D40-T



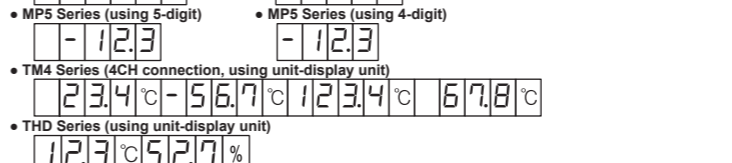
D60-T



RS485 Master Mode

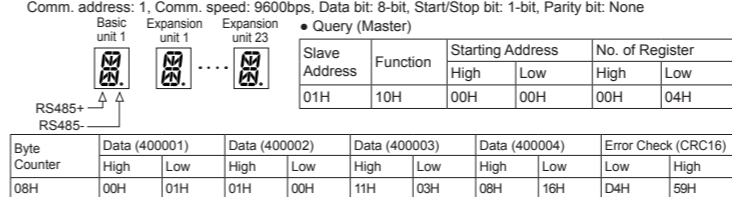
Connect the unit and the specified Autonics device which supports Master mode for displaying current value without PC/PLC.

The specified Autonics devices are connected by auto or manual setting. Display may be varied by connection setting. Refer to the below examples.



RS485 Slave Mode (Data Input Method)

E.g.: Displays 10H38M (10 hour 38 minute). Comm. address: 1, Comm. speed: 9600bps, Data bit: 8-bit, Start/Stop bit: 1-bit, Parity bit: None



Comprehensive Device Management Program [DAQMaster]

Table of DAQMaster program specifications including System (IBM PC compatible), Operations (Windows 98/NT/XP/Vista/7/8/10), Memory (256MB+), Hard disk (1GB+), and VGA (Resolution: 1024x768 or higher).

RS485 Slave Mode (Input Data Chart)

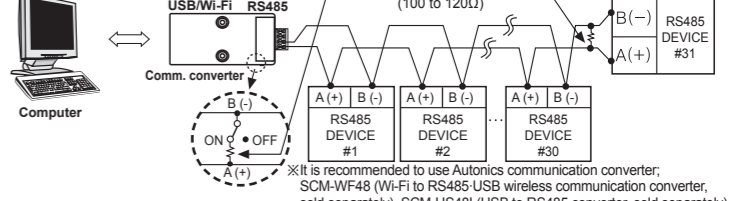
If there is no input data after supplying the power, the basic unit displays 'T'.

Large table showing input data charts for DS Series (7-segment) and DA Series (16-segment) displays, including character sets and bit patterns.

*1: If this data is not for the unit-display unit, it maintains former state.

RS485 Slave Mode (Communication Setting)

1) Application of system organization. Diagram showing RS232C/USB/Wi-Fi RS485 connection to a computer and RS485 devices with terminating resistors.



2) Modbus Address Mapping. Digit 1, 3, 5, ... 23 data and Digit 2, 4, 6, ... 24 data.

Table of Modbus Address Mapping showing data digit assignments for units 1, 3, 5, ... 23 and 2, 4, 6, ... 24.

Table of Display data showing No. (Address), Func., R/W, Parameter, Parameter name, Description, Setting range, and Default for various display functions.

Cautions during Use

- 1. Follow instructions in 'Cautions during Use'.
2. 12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
4. Keep away from high voltage lines or power lines to prevent inductive noise.
5. This unit may be used in the following environments.

Major Products

- Photoelectric Sensors, Fiber Optic Sensors, Door Sensors, Door Side Sensors, Area Sensors, Proximity Sensors, Pressure Sensors, Rotary Encoders, Connector/Sockets, Switching Mode Power Supplies, Control Switches/Lamps/Buzzers, I/O Terminal Blocks & Cables, Stepper Motors/Drivers/Motion Controllers, Graphic/Logic Panels, Field Network Devices, Laser Marking System (Fiber, Co., Nd:YAG), Laser Welding/Cutting System, Temperature Controllers, Temperature/Humidity Transducers, SSRs/Power Controllers, Counters, Timers, Panel Meters, Tachometers/Pulse (Rate) Meters, Sensor Controllers.