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OptiMate® Series

Intelligent Operator Interface Peripherals for Control & I/O



OptiMate 1000 Series



OptiMate 600 Series



OptiMate 400 Series

Overview

Nematron has sixteen operator interface terminals in the OptiMate Series. All of the terminals are compatible with the major brands of PLC's. The OptiMate Series is also compatible with computer or microprocessor based applications using the OptiMate Hex protocol.

All of the operator terminals are low cost, high performance, man/machine interface modules with a broad range of input and display capabilities. The OptiMate product line is the most cost-effective solution in control & I/O on the market today.

OptiMate modules are compatible with any computer that has either an RS232 or RS422 port. They are also compatible with many major PLC's (see *PLC Compatibility Chart on page 2*).

Broad Compatibility

OptiMate operator panels are compatible with most major brands of PLCs, as well as PC or microprocessor-based applications using the OptiMate Hex protocol.

Compatible PLC brands include:

- Allen Bradley
- AutomationDirect
- Entertron
- GE Fanuc
- IDEC
- Keyence
- Koyo
- Mitsubishi
- Modbus
- Modicon
- Omron
- Siemens
- Toshiba

See *PLC Accessory Cables on page 3*.

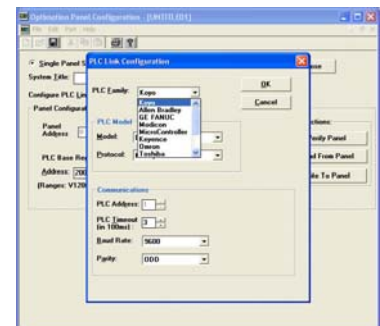
Easy-to-Use Software for OptiMate Panel Configuration

OM-WINEDIT is a graphical, user-friendly software program that runs on any Windows®-compatible computer. It is available to configure any OptiMate panel system, or define all system parameters.



OM-WINEDIT can be downloaded from the Nematron.com web site at no charge.

It can also be purchased on CD-ROM and comes with OM-ACBL-1 and OM-CCBL cables to connect the PC and operator panels.



Our Configuration Editor, OM-WINEDIT is designed specifically for custom configuration of our modules, allowing you maximum flexibility in customizing the way your panels will operate.

OptiMate Product Guide

1000 Series



OM1124 Annunciator Panel
A high-intensity LED panel with 24 LED light bars



OM1212 Button/Lamp Panel
12 LED light bars and 12 pushbutton pads



OM1224 Pushbutton Panel
24 pushbutton pads ready for custom labels



OM1312 Setpoint Panel
Three 4-digit numeric displays and 12 mapped data fields



OM1500 Operator Terminal
2x20 char. LCD with 160-msg capacity three LED light bars, five pushbuttons, and full keypad



OM1510 Operator Terminal
All the features of the OM1500, plus a configurable menu tree

600 Series



OM609 Combo Panel
Six LED light bars and nine pushbutton pads



OM613 Operator Panel
4-digit numeric display, four mapped fields, two LED light bars, four pushbutton pads



OM620 Operator Panel
2x20 char. LCD with 160-message capacity, configurable menu tree, five pushbutton pads



OM640 Operator Panel
4x20 char. LCD with 160-message capacity, three LED light bars, five pushbutton pads

400 Series



OM406 Indicator/Pushbutton Panel
Six LED light bars and four pushbutton pads



OM413 Setpoint/Display Panel
One 4-digit numeric display and six mapped data fields



OM414 Setpoint/Display Panel
One 8-digit numeric display and six mapped data fields



OM420 2-line Operator Panel
2x20 char. LCD with 160-msg capacity and four pushbuttons



OM440 4-line Operator Panel
4x20 char. LCD with 160-message capacity

OM9001 Communications Master



The OM9001 Communications Master provides an intelligent interface between your PLC and up to 31 connected OptiMate panels (1000 Series or 600 Series). The OM9001 communicates serially to the PLC, transferring register data in both directions, and transparently manages operations amongst the OptiMate panels. The Communications Master can be configured via the OptiMate Configuration Editor to use any of several industry-standard PLC protocols. Baud rate, parity and other protocol specifics are interactively selectable to enable communications. Once configured, the OM9001 will continuously transfer data between all modules and the PLC to read and write the appropriate data registers. The OM9001 and the OptiMate panels take care of the rest.

PLC Compatibility Chart

How to Order: Use the PLC Compatibility Chart below to determine the letter to append to the model number that you are ordering. Examples: To purchase an OM640 for use with an AB PLC, then the model number to order would be OM640G. For use with a Modbus PLC then it would be OM640H. A "--" indicates that the model is incompatible with the corresponding PLC.

| PLC Brand | 400 Series | 600 Series | 1000 Series | OM9001 |
|------------------|------------|------------|-------------|--------|
| Allen Bradley | G | G | A | A |
| AutomationDirect | G | G | A | A |
| Entertron | J | J | B | -- |
| GE Fanuc | -- | -- | A | A |
| IDEC | -- | -- | B | -- |
| Keyence | H | H | -- | -- |
| Mitsubishi | L | L | B | -- |
| Modbus | H | H | A | A |
| Omron | -- | -- | A | A |
| Toshiba | -- | -- | A | A |
| OptiMate Hex | G,J,H,L | G,J,H,L | A,B | -- |

OptiMate Accessories

Configuration Cables - All Cables are 6 ft. long unless stated otherwise.

| | |
|------------------|--|
| OM-ACBL-1 | Connects between 600 or 1000 series panels and a PC. (Also used with A/B PLCs) |
| OM-CCBL | Connects between 400 series panels and PC |

PLC Communication Cables - All Cables are 6 ft. long unless stated otherwise.

▪ Allen Bradley PLCs

| | |
|------------------|---|
| OM-ACBL-1 | Connects any 600 or 1000 series OptiMate panel to an Allen Bradley SLC 5/03 or 5/04 PLC |
| OM-ACBL-2 | Connects any 600 or 1000 series OptiMate panel to an Allen Bradley Micrologix PLC |
| OM-ACBL-3 | Connects any 400 series OptiMate panel to an Allen Bradley SLC 5/03 or 5/04 |
| OM-ACBL-4 | Connects any 400 series OptiMate panel to an Allen Bradley Micrologix PLC |

▪ GE Fanuc PLCs

| | |
|------------------|--|
| OM-GCBL-1 | Connects any 1000 series OptiMate panel to GE Series 90 Micro or 90/30 PLC |
|------------------|--|

▪ Keyence PLCs

| | |
|------------------|--|
| OM-KCBL-1 | OptiMate 400 series panel to Keyence CPU |
| OM-KCBL | OptiMate 600 series panel to Keyence CPU |

▪ Koyo (Automationdirect.com) PLCs

| | |
|------------------|---|
| OM-2CBL | OptiMate 600 or 1000 series to DL105, DL205, D3-350 or D4-450 CPU. 15 pin 'D' shell to RJ12 jack. |
| OM-2CBL-1 | OptiMate 600 or 1000 series to DL250 bottom port. 15 pin 'D' shell to 15 pin SVGA. |
| OM-2CBL-2 | OptiMate 400 series to DL05, DL105, DL205, DL350 or DL450 CPU. RJ12 to RJ12. |
| OM-3CBL | OptiMate 600 or 1000 series to DL340 CPU. 15 pin 'D' shell to RJ11 |
| OM-3CBL-1 | OptiMate 400 series to D3-340 CPU. RJ12 to RJ11 |
| OM-4CBL-1 | Connects 600 or 1000 series panel to DL405 CPU. 15 pin 'D' shell to 15 pin 'D' shell |
| OM-4CBL-2 | Connects 600 or 1000 series panel to DL405 or DL350 CPU. 15 pin 'D' shell to 25 pin 'D' shell |
| OM-4CBL-3 | Connects 400 series panel to DL405 CPU. RJ12 to 15 pin 'D' shell |

▪ Modicon PLCs

| | |
|------------------|---|
| OM-MCBL-1 | OptiMate 600 or 1000 series to Modicon RJ45 |
| OM-MCBL-2 | OptiMate 400 series to Modicon RJ45 |

Power Supplies

| | |
|-----------------|---|
| OL-PS1 | Wall plug power supply for 600 series, 1000 series panels. 24VDC (unregulated) @ 1A output. |
| OM-PS400 | Wall plug power supply for 400 series panels. 5V @250mA with center negative. Required for configuration and for connection to PLCs that do not have a 5VDC connection on their communication port. |

Light Bar Kits

| | |
|------------------|-----------------------------|
| OM-GREEN | 4-Pack of Green Light Bars |
| OM-RED | 4-Pack of Red Light Bars |
| OM-YELLOW | 4-Pack of Yellow Light Bars |

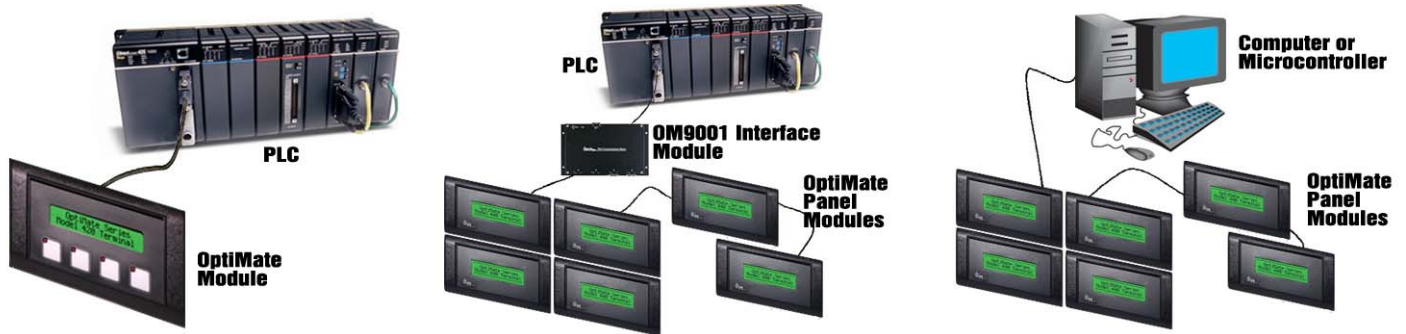
Connector Kits

| | |
|-------------------|--|
| OM-CMCON-1 | Package of 4 ribbon cable connectors OM9001 to OptiMate connection. |
| OM-CMCON-2 | Package of 4 solder type 15 pin (male) 'D' shell connectors for OM9001 to OptiMate connection. |
| OM-CMCON-3 | Package of 2, 15 pin 'D' shell to 4 pin terminal block converters for 600 or 1000 series RS422 connection. |
| OM-PSCON | Package of 4 terminal plugs for power connection to 600 or 1000 series panels. |

Configuration Software

| | |
|-------------------|---|
| OM-WINEDIT | OptiMate panel configuration software on CD-ROM. Comes with OM-ACBL-1 and OM-CCBL cables to connect the PC and operator panels. Software can be downloaded separately at no charge from Nematron.com. |
|-------------------|---|

Configuration Options



PLC Stand Alone

OptiMate modules plug directly into most PLCs. A simple RS232 cable connection allows you to interface and control the OptiMate module via PLC data registers and ladder logic. To do this the operator terminal uses a bank of mapped PLC registers. Complete operator interface is performed using the PLC registers for display message selection, data entry, function key interface and indicator light control. The Optimate module continuously accesses these PLC registers and performs operations under ladder logic control on a real-time basis.

PLCs are slave devices on their standard communications ports. This means that a panel attached to the standard port must control the transfer of information by reading and writing the PLC registers. OptiMate modules will perform this communications for most major PLC protocols.

PLC Multi Modules

Larger systems involving operator panels can be configured using an OM9001 Communications Master and multiple 600 and 1000 series panels. This configuration uses an RS422 link with up to 31 modules installed on the communications cable. The OM9001 Communication transfers data between the PLC and the individual Optimate modules. Modules can be located together to form custom modules or they can be distributed anywhere within 4000 feet.

The OM9001 Communications Master provides a transparent interface between the PLC and a group of OptiMate modules. The communication interface between modules requires only four wires. The OM-WinEdit software program is used to configure both the OM9001 and the connected panels

This modular approach to custom applications provides a nearly limitless number of possibilities.

Microprocessor Based Systems

OptiMate modules can also interface directly to most computers or microcontrollers using the Optimate Hex protocol. In a microprocessor-based system, the host microprocessor is the system master. The OptiMate modules are slave devices that respond to commands from the host. The OptiMate Hex protocol is used to develop a program that allows the user to directly control Optimate module operation and retrieve operator inputs. A serial port is required and the modules communicate over either RS232 for a single panel configuration or RS422 for multiple panel configurations.

With RS422 communications modules can be located together to form custom modules or they can be distributed anywhere within 4000 feet.

Ordering Information

Nematron and OptiMate brand products are available worldwide through our network of factory-authorized distributors. For distributor contact information in your area, please visit our website at www.nematron.com and submit a Request for Quote or call Nematron's Customer Care Center at your nearest regional sales office. OM-WINEDIT software can be downloaded free of charge from the Nematron website.

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