Remote Slave Specifications

Mounting Location	Controller slot in remote base
Display	OLED, 4x10 characters, backlit, 1 OLED wake up button; OLED characters are 7x12 with a dot pitch of 0.245 mm; 1.72 mm x 2.94 mm
Communications- 4 Integrated Ports	**USB:** Programming, Monitoring, Debug **REMOTE I/O:** (10/100Mbps Ethernet) **RS-232:** (RJ12, 1200-115.2k Baud) ASCII, Modbus **RS-485:** (Removable Terminal Included, 1200-115.2k Baud) ASCII, Modbus
Max. Number of Ethernet Remote I/O Bases	8
Max. Number of I/O per CPU System	4,320 (CPU Base with 8 Remote I/O Bases with 15 32-point I/O modules per base.)

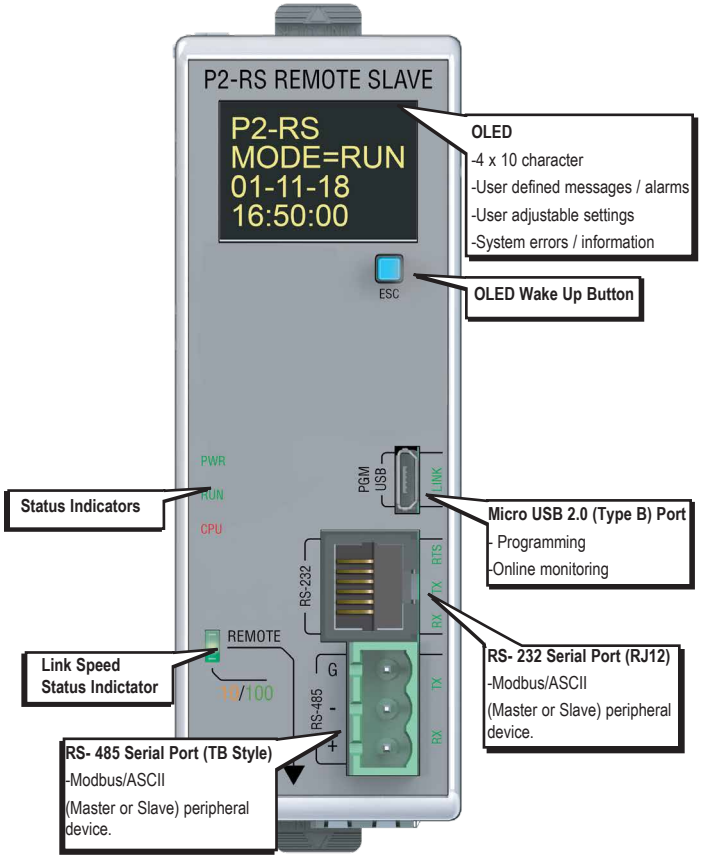
P2-RS Remote Slave

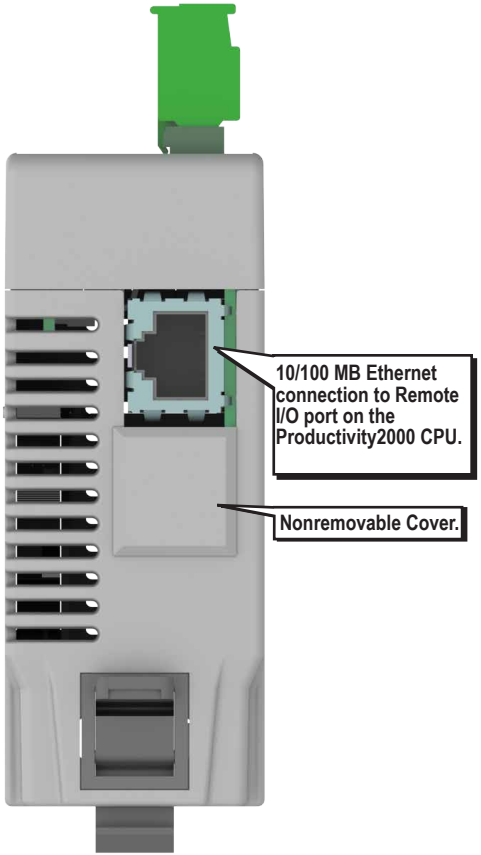
The P2-RS is a full featured, high-performance, Remote Slave module for use with the Productivity2000 Programmable Automation Controller.

Document Name	Edition/Revision	Date
P2-RS-DS	3rd Ed., Rev A	2/25/2022

Warranty: Thirty-day money-back guarantee. Two-year limited replacement. (See www.productivity2000.com for details).

Front Panel


P2-RS REMOTE SLAVE
P2-RS
MODE=RUN
01-11-18
16:50:00
ESC
PWR
RUN
CPU
PGM
USB
LINK
RS-232
RTS
TX
RX
REMOTE
10/100
G
RS-485
-
+
TX
RX
OLED
-4 x 10 character
-User defined messages / alarms
-User adjustable settings
-System errors / information
OLED Wake Up Button
Status Indicators
Micro USB 2.0 (Type B) Port
- Programming
-Online monitoring
Link Speed
Status Indictator
RS- 232 Serial Port (RJ12)
-Modbus/ASCII
(Master or Slave) peripheral
device.
RS- 485 Serial Port (TB Style)
-Modbus/ASCII
(Master or Slave) peripheral
device.


10/100 MB Ethernet
connection to Remote
I/O port on the
Productivity2000 CPU.
Nonremovable Cover.

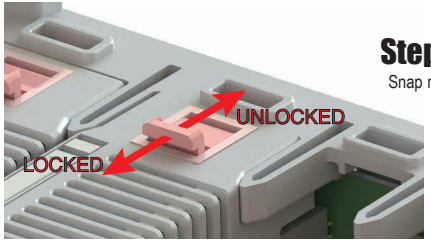
Installation Procedure

Step One:

Locate the support platform next to the power supply; the P2-RS will be inserted into this location.

Step Two:

Seat the P2-RS on support platform and push towards base until PCB is fully engaged into the connector.



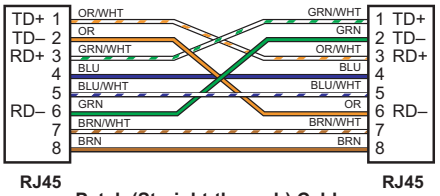
Step Three:

Snap retaining tab into the locked position.

Remote I/O Port Specifications

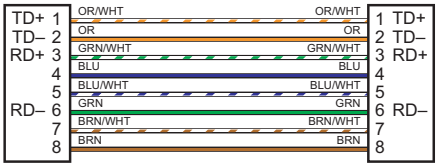
Description	Proprietary transformer isolated Ethernet Port built-in surge protection for connection to CPU Remote I/O Master port.
Transfer Rate	10/100Mbps
Port Status LEDs	Green LED is illuminated when network LINK is established. Yellow LED is backlit when port is active (ACT).
Cables	Auto crossover port allows use of a Patch (straight through) cable or Crossover cable.

Crossover Cable

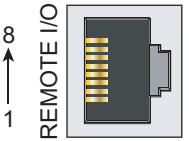


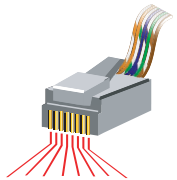
RJ45 RJ45

Patch (Straight-through) Cable



RJ45 RJ45

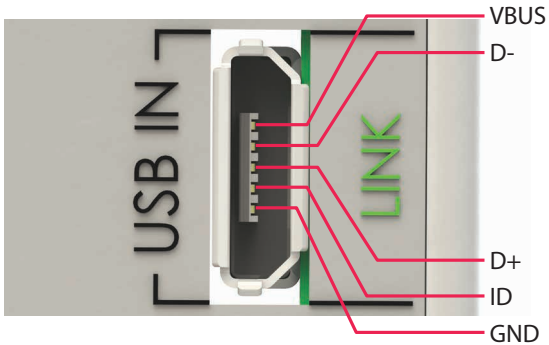


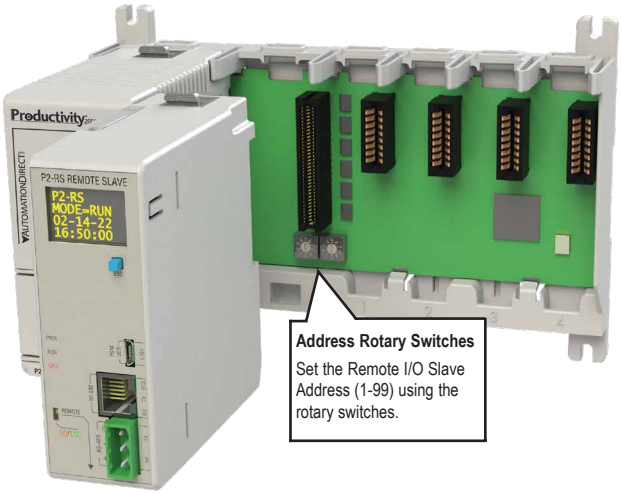


8-pin RJ45 Connector (8P8C)

USB IN Specifications

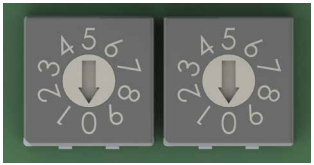
Description	Standard Mirco USB 2.0 Slave input for remote CPU programming and online monitoring, with built-in surge protection. Not compatible with older USB devices.
Transfer Rate	480 Mbps
Port Status LED	Green LED is illuminated when LINK is established to programming software.
Cables	Micro USB 2.0 (Type B) to USB Type A: 6 ft. cable part # USB-CBL-AMICB6 15 ft. cable part # USB-CBL-AMICB15





Setting the Remote Slave Address

Each Remote Slave (up to 8 total) must have a unique address between 1 an 99. The address is set using two rotary switches located on the base of the platform, left switch for setting the tens units and right switch for setting the ones unit.



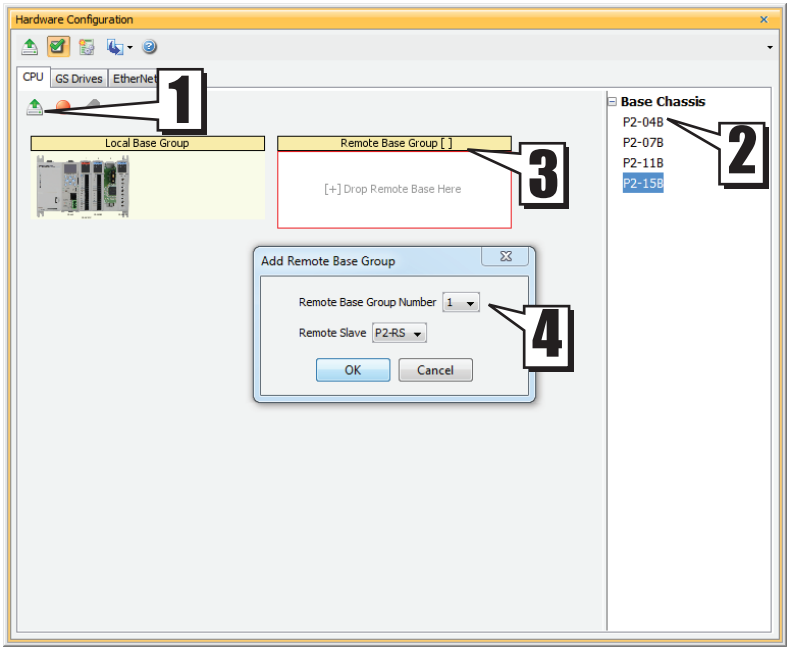
Addressing Procedure

IMPORTANT:

- The factory setting of 00 is not a valid address.
-Address selection must be set prior to power-up.
-Slave addresses are read only on power-up.
-If there are duplicate P2-RS slave addresses on the same network, a critical error will be displayed on the CPU.

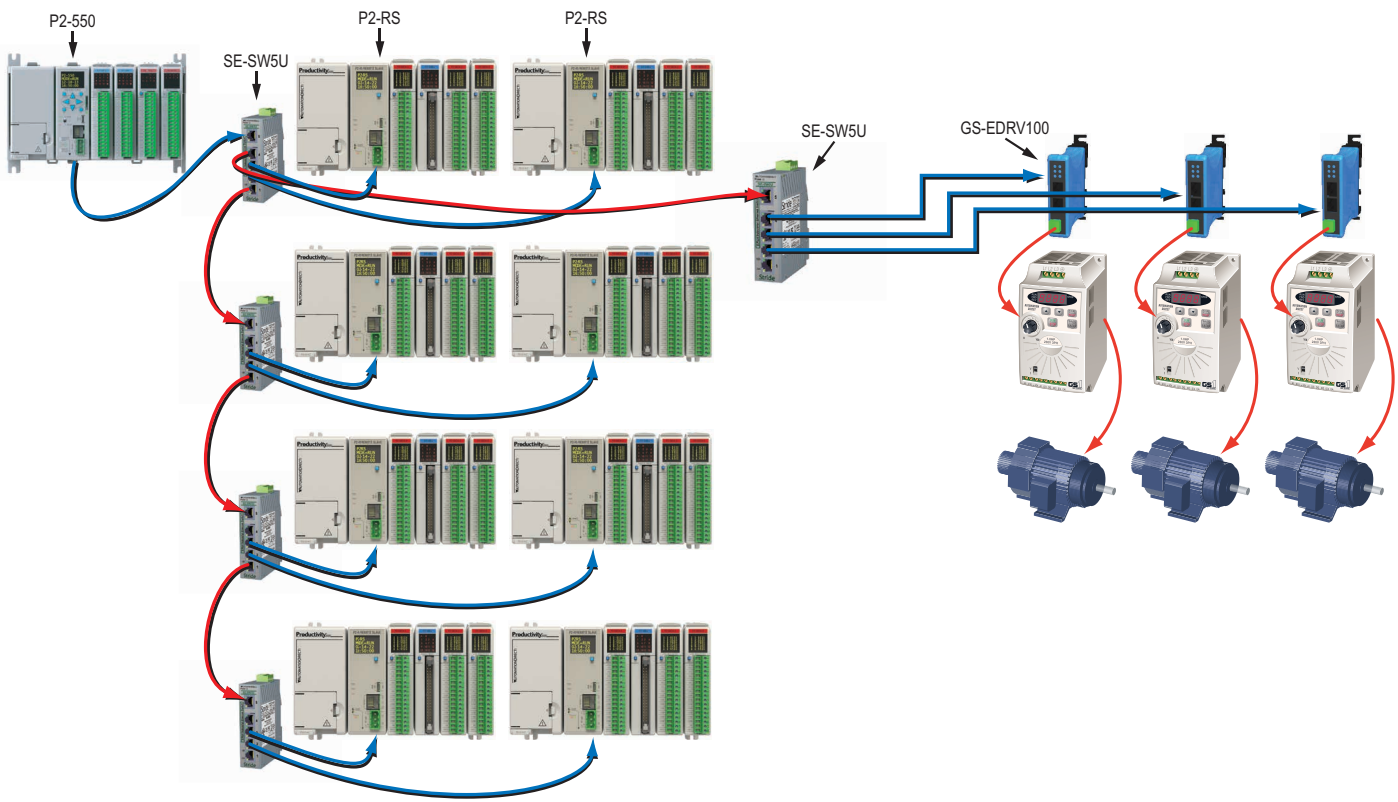
It is also necessary to configure the remote addresses using the Productivity Suite Programming Software. If connected online to a Productivity2000 system with slaves installed, go to *Hardware Configuration* and select the *Read Configuration* (1) icon. The CPU will automatically read the addresses of the remote slaves and add them to the configuration.

If setting up offline, go to *Hardware Configuration*, select the *Base Chassis* size needed (2), left click and drag the selected base to the *Remote Base Group* field (3). In the *Add Remote Base Group* (4) window, select the same *Remote Base Number* as set on the rotary switches.



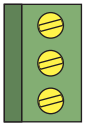
Typical Remote I/O Configuration

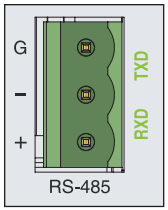
Add up to 8 Remote Bases using P2000 CPUs or up to 4 Remote Bases for P1-550 along with other supported devices on the Remote I/O Ethernet Network



RS-485 Specifications

Description	Non-isolated RS-485 port connects the P2-RS as a Modbus or ASCII master or slave to a peripheral device. Includes ESD/EFT protection and automatic echo cancellation when transmitter is active.
Data Rates	Selectable, 1200, 2400, 9600, 19200, 33600, 38400, 57600, and 115200.
TXD+/RXD+	RS-485 transceiver high
TXD-/RXD-	RS-485 transceiver low
GND	Logic Ground
Input Impedance	19k Ω
Maximum load	50 tranceivers, 19k Ω each, 60 Ω termination
Output Short Circuit Protection	±250mA, thermal shut-down protection
Electrostatic Discharge Protection	Contact ±4KV, Air ±8KV per IEC1000-4-2 Cable is installed for testing
Electrical Fast Transient Protection	±1KV per IEC1000-4-4
Minimum Differential Output Voltage	1.5 V with 60 Ω load
Fail Safe Inputs	Logic high input state if inputs are unconnected
Maximum Common Mode Voltage	-7.5 V to 12.5 V
Port Status LED	Green LED is illuminated when active for TXD and RXD
Cable Options	Go to AutomationDirect.com for RS-485 cables.

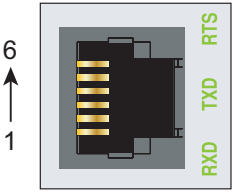




Pin #	Signal
G	GND
–	TXD-/RXD-
+	TXD+/RXD+

RS-232 Specifications

Description	Non-isolated RS-232 DTE port connects the P2-RS as a Modbus or ASCII master or slave to a peripheral device. Includes ESD and built-in surge protection.
Data Rates	Selectable, 1200, 2400, 9600, 19200, 33600, 38400, 57600, and 115200.
+5V Cable Power Source	210mA maximum at 5V, ±5%. Limited by resettable fuse. Reverse polarity protected.
TXD	RS-232 Transmit output
RXD	RS-232 Receive input
RTS	Handshaking output for modem control.
GND	Logic ground
Maximum Output Load (TXD/RTS)	3k Ω, 1,000pf
Minimum Output Voltage Swing	± 5V
Output Short Circuit Protection	±15mA
Port Status LED	Green LED is illuminated when active for TXD, RXD, and RTS.
Cable Options	D2-DSCBL USB-RS232 with D2-DSCBL FA-CABKIT FA-ISOCON for converting RS-232 to isolated RS-485



6-pin RJ12 Female Modular Connector

Pin #	Signal	
1	GND	Logic Ground
2	+5V	210 mA Maximum
3	RXD	RS-232 Input
4	TXD	RS-232 Output
5	RTS	Request To Send
6	GND	Logic Ground

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes. ***Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.***

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-844-4200.

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RS Status Indicators

PWR	Green LED is backlit when power is on
RUN	Green LED is backlit to indicate when CPU has valid project file with RS configured.
CPU	Red LED is backlit during power reset, power down, or watch-dog time-out.

Removable Terminal Block Specifications

Part Number	P3-RS485CON
Number of Positions	3 Screw Terminals
Pitch	5mm
Wire Range	28–12 AWG Solid Conductor 30–12 AWG Stranded Conductor
Screw Driver Width	1/8 inch (3.175 mm) Maximum
Screw Size	M2.5
Screw Torque	4.5 lb·in (0.51 N·m)

General Specifications

Surrounding Air Temperature	0° to 60°C (32° to 140°F)
Storage Temperature	-20º to 70ºC (-4º to 158ºF)
Humidity	5 to 95% (non-condensing)
Altitude	2,000 meters max
Pollution Degree	2
Environmental Air	No corrosive gases permitted
Vibration	IEC 60068-2-6 (Test Fc)
Shock	IEC 60068-2-27 (Test Ea)
Heat Dissipation	3.81 W
Overvoltage Category	II
Enclosure Type	Open Equipment
Module Location	Controller Slot in a remote base in a Productivity2000 system
Weight	158g (5.6 oz)
Agency Approvals	UL 61010-1 and UL 61010-2-201 File E139594, Canada and USA CE (EN 61131-2 EMC, EN 61010-1 and EN 61010-2-201 Safety)*

*Meets EMC and Safety requirements. See the D.O.C. for details.

IMPORTANT!

Hot-Swapping Information

Note: This device cannot be Hot-Swapped