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WiPS DR300 and DR301 Master/Remote Transceivers

Features

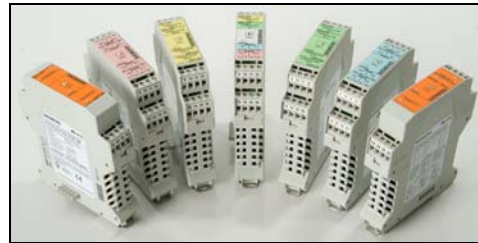
A Siemens WiPS¹ wireless network with DR300 and DR301 Master/Remote transceivers and analog, digital, and pulse I/O Expansion Modules can include:

- Modular, DIN-rail mount transceivers, shown here, and I/O Expansion Modules, shown at right
- 1 Master transceiver and up to 254 Remote, store-and-forward transceivers
- Up to 8, WiPS 200 Series I/O modules per DR300 Remote transceiver on a common power and signal bus
- Addressable I/O process data for transfer to MODBUS or DF1 registers in a controller, PLC, PC, or equivalent device
- WiPS-Link² or DIP switch configuration - see photo below right
- Available remote diagnostics via second port on transceivers and Terminal Window in WiPS-Link
- Dry contact RF LINK diagnostic output, as well as voltage output for testing received signal strength (RSSI)



Description

WiPS transceivers are integrated receivers/transmitters. They allow a master controller, PLC, PC or equivalent device to poll remote transceivers and wirelessly extract analog, digital, and pulse process data and status values. Remote I/O is accessed using MODBUS RTU or Allen-Bradley DF1 protocol by reading from and writing to registers in each separately addressed remote transceiver. These locations are accessed through the master transceiver connected to the polling device.



Transceivers employ Frequency Hopping Spread Spectrum (FHSS) technology and operate in the 902-928 MHz ISM³ band for a license-free, interference-free link between remote devices and the control room. A WiPS wireless network is ideal for moving numerous I/O signals within high interference environments without costly cable and conduit runs.

Typical Applications

- SCADA
- PLC/RTU extensions
- Pump Controls
- Tank level/pressure/temperature monitoring
- Water/wastewater
- Petrochemical

DR300 Transceiver
Configuration DIP
Switches



Transceiver Ordering Information

Description	Order Number
1. DR300 Transceiver	TGX:16347-330
2. DR301 Transceiver	TGX:16347-331

¹ WiPS – Wireless Process Solutions

² Windows-based configuration software

³ Industrial, Scientific, and Medical

Transceiver Specifications

I/O Interface

Protocols.....	MODBUS RTU or Allen-Bradley DF1 half-duplex
Interface.....	RS-232 and RS-485/422 (2-wire or 4-wire half-duplex)
Baud Rates.....	300 to 38,400 baud
Data Format.....	Asynchronous – seven (7) data bits, even parity or eight (8) data bits, no parity; 1 stop bit
Flow Control	RTS/CTS or None

Communications

Transmit Power	1 Watt (30 dBm)
Frequency.....	902 to 928 MHz, license-free ISM band
Range	
In Plant, Obstructed	600 to 1000 feet (180 to 305m)
Line of Sight, Omni ⁴ Antenna	4 to 5 miles (6 to 8 km)
Line of Sight, Yagi ⁵ Antenna.....	20+ miles (32+ km)
Channel Hopping.....	FHSS, 256 channels
Bit Error Rates.....	10 ^{e-6} BER at -106 dBm without error correction
Receiver Sensitivity	< -110 dBm
Antenna Connector	MCX, female
Transceiver ID	16-bit coding of each transceiver group (i.e. wireless network)
FCC ID (USA).....	IA9FHOEM900
ISC (Canada)	1338104550A

General and Environmental

Voltage Input	9 to 30 Vdc
Power Consumption	2.5W average; 4.1W peak
Reverse Polarity and Surge Protection	yes
Wiring Connections	
RS232	DB9 female
RS485/422	Screw-type terminals; 12-24 AWG (3.3-0.23 mm ²)
Mounting.....	35mm DIN-rail
Dimensions (L x W x H).....	3.9" x 0.88" x 4.5" (99 mm x 22.5 mm x 114.5 mm)
Case Material	Plastic
Weight	5.5 oz (175 grams)
Temperature	-40° to 70°C (-40° to 158°F)
Environmental Rating	NEMA 1 (equivalent to IP30)
Approvals.....	Class I, Div. 2, Groups A,B,C,D; UL and CSA
LED Indicators.....	RF – glows solid when RF link is established TX – flashes when data is being transmitted RX – flashes when data is being received

Contact Information

Visit the Siemens Internet site (<http://www2.sea.siemens.com/Products/Process-Instrumentation/Wireless-Solutions/Wireless+Solutions.htm>) or telephone: 800-365-8766 for additional details.

Siemens sales representatives are available to provide sales and application support. For your Siemens office, visit <http://www2.sea.siemens.com/Products/Process-Instrumentation/Support/Customer-Support.htm>.

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⁴ Omni – Omnidirectional antenna with a circular radiation pattern

⁵ Yagi – Directional antenna with a narrow, concentrated radiation pattern