Expansion Modules

SITRANS RD300

Operating Instructions • 09/2018

SITRANS

SIEMENS

Safety Guidelines: Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.
Qualified Personnel: This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

Unit Repair and Excluded Liability:

- The user is responsible for all changes and repairs made to the device by the user or the user's agent.
- All new components are to be provided by Siemens Milltronics Process Instruments.
- Restrict repair to faulty components only.
- Do not reuse faulty components.

WARNING: Cardboard shipping package provides limited humidity and moisture protection. This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

Note: Always use product in accordance with specifications.

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- For a selection of Siemens Milltronics level measurement manuals, go to: **www. siemens.com/processautomation**. Under Process Instrumentation, select *Level Measurement* and then go to the manual archive listed under the product family.

- For a selection of Siemens Milltronics weighing manuals, go to: **www. siemens.com/processautomation**. Under Weighing Technology, select *Continuous Weighing Systems* and then go to the manual archive listed under the product family.

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INTRODUCTION

These external expansion modules add functionality to any SITRANS RD300 meter in the field. They can be added at any time and are easy-to-install.

Add a 4-relay expansion module and/or up to two I/O modules. The dual-input SITRANS RD300 models may also add an additional two (2) analog outputs. The menu items for these modules do not appear until the module is connected, simplifying the basic menu.

The relay module consists of four 3-amp Form A (SPST) relays. The analog output module consists of two 4-20 mA outputs. Both are configured for functions similar to the onboard outputs.

The I/O module has four digital inputs and four digital outputs per module. External digital inputs can function similarly to the front panel function keys. They can be configured to trigger certain events (i.e. acknowledge/reset alarms, reset max and/or min values, disable/enable all output relays, and hold current relay states), provide direct menu access point, or mimic front panel keys. Digital outputs can be used to remotely monitor the SITRANS RD300 alarm relay output states, or the states of a variety of actions and functions executed by the meter.

RS-232 or RS-422/485 communications modules are also available; refer to the accessories section for ordering details.

SPECIFICATIONS

Except where noted all specifications apply to operation at +25°C.

General (applicable to all models)

POWER	Meter M-LINK connection
CABLE	Standard CAT5e cable; provided with module. *Note: To ensure optimum performance use only supplied cables.*
CONNECTORS	RJ45; identical and interchangeable Removable screw terminal blocks that accept 12 to 22 AWG wire.
TIGHTENING TORQUE	Screw terminal connectors: 5 lb-in (0.56 Nm)
ENCLOSURE	ABS-94HB material, UL94HB (Flame-Class Rating)
OVERALL DIMENSIONS	2.286" x .924" x 3.624" (W x H x D) 58.06 mm x 23.47 mm x 92.05 mm (W x H x D)

4-Relay Expansion Module

RELAYS	Four Form A (SPST); Rated 3 A @ 30 VDC and 125/250 VAC for resistive loads 1/14 HP @ 125/250 VAC for inductive loads.
WEIGHT	2.4 oz (68 g)

Dual Isolated 4-20 mA Output Module

The dual isolated 4-20 mA output module is only compatible with dual-input SITRANS RD300 models.

ACCURACY	± 0.1% of span ± 0.004 mA		
SCALING RANGE	3.000 to 23.000 mA for any display range		
TEMPERATURE DRIFT	0.4 µA/°C max from 0 to 65°C ambient, 0.8 µA/°C max from -40 to 0°C ambient *Note: Analog output drift is separate from input drift.*		
OUTPUT LOOP RESISTANCE	Power supply	Minimum	Maximum
	24 VDC	10 Ω	700 Ω
	35 VDC (external)	100 Ω	1200 Ω
WEIGHT	1.8 oz (51 g)		

Digital Input & Output Expansion Module

CHANNELS	4 digital inputs & 4 digital outputs per module
SYSTEM	Up to 2 modules for a total of 8 inputs & 8 outputs *Note: The jumper located between the RJ45 connectors must be removed on the second module in order for the system to recognize it as module #2.*
DIGITAL INPUT LOGIC HIGH	3 to 5 VDC
DIGITAL INPUT LOGIC LOW	0 to 1.25 VDC
DIGITAL OUTPUT LOGIC HIGH	3.1 to 3.3 VDC
DIGITAL OUTPUT LOGIC LOW	0 to 0.4 VDC
SOURCE CURRENT	10 mA maximum output current
SINK CURRENT	1.5 mA minimum input current
+5 V TERMINAL	To be used as pull-up for digital inputs only. Connect normally open pushbuttons across +5 V & DI1-4.  **WARNING: DO NOT use +5 V terminal (pin 1) to power external devices.**
WEIGHT	2.2 oz (62 g)

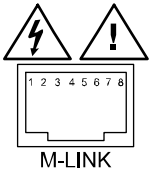
INSTALLATION

There is no need to remove the expansion module from its case to complete the installation, wiring, or setup of the unit.

WARNING: Do not connect or disconnect the expansion module with the power on!

Expansion Module Connections

The expansion modules are connected to the meter using a CAT5e cable provided with each module.



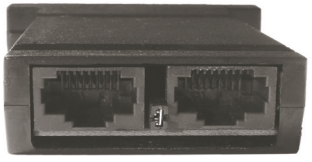
M-Link Connector Location on the Meter

WARNING: Do not connect any equipment other than Siemens's expansion modules, cables, or meters to the RJ45 M-LINK connector. Otherwise damage will occur to the equipment and the meter.

The two RJ45 connectors on the expansion modules are identical and interchangeable; they are used to connect additional modules to the system.

Note: The dual analog output module must be connected, via the M-Link connector, to the RD300 and each analog output being used must be wired to and powered by a separate DC supply than the one powering the RD300 in order to be recognized.

Note: The jumper located between the RJ45 connectors of the I/O module must be removed on the second digital I/O module in order for the system to recognize it as module #2.

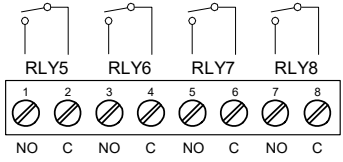


Jumper Location

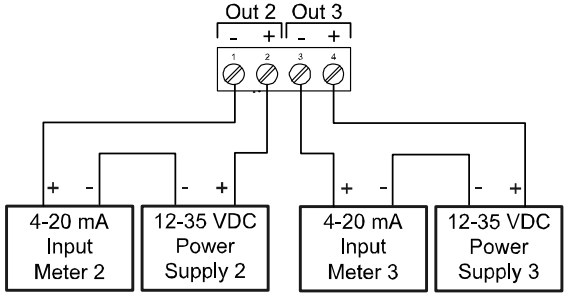
Terminal Block Connections

All connections are made to removable screw terminal connectors located at the front of the module.

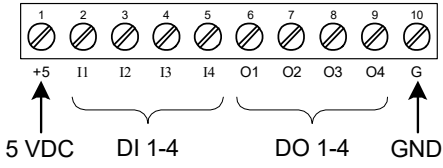
CAUTION: Use copper wire with 60°C or 60/75°C insulation for all line voltage connections. Observe all safety regulations. Electrical wiring should be performed in accordance with all applicable national, state, and local codes to prevent damage to the meter and ensure personnel safety.



External Relays Module Connections



Dual Analog Output Module Connections



Digital I/O Module Connections

Notes

For more information

www.siemens.com/level
www.siemens.com/weighing

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