# Communication to the 7th

Integration of the Thermal Mass Flow Meters and Controllers of the red-y smart and industrial series

| Analog Operation | Digital Operation | | | | Software Tools | |
|---|---|---|---|---|---|---|
| **analog** | **Modbus** | **PROFIBUS** PROCESS FIELD BUS | **PROFINET** INDUSTRIAL ETHERNET | **EtherCAT** | get **red-y** | NI LabVIEW NATIONAL INSTRUMENTS |
| **Analog signals** | **Modbus RTU** | **Profibus DP-V0/DP-V1** | **Profinet** | **EtherCAT** | **get red-y 5 software** | **LabVIEW VIs** |
| The devices offer the opportunity to read the measurement via the analog interface and specify a set value. | The Modbus RTU protocol facilitates a communication based on the Master/Slave principle and is widespread in measurement and control technology. As an open protocol it is the de-facto standard in the industry. | With over 40 million installed units at the end of 2011, Profibus is the most successful fieldbus in the world. The devices are certified for the protocol variants Profibus DP-V0 und DP-V1. | Profinet is an open industrial ethernet standard, developed by Siemens and the member companies of the Profibus user organization. Profinet can be seen as the direct successor to Profibus DP. | EtherCAT is an open industrial Ethernet standard, developed by Beckhoff and the EtherCAT Technology Group (ETG). | The free software get red-y offers efficient device management for devices. Besides displaying key information from devices, users can also view and modify various operating parameters. | LabVIEW from National Instruments offers engineers and scientists a rapid and cost-effective possibility for connecting measurement and control hardware. The virtual instruments (VI) allow easy read and write access to the devices. |
| **Specifications** | | | | | | |
| » Analog signals (input): 0..20 mA, 4..20 mA, 0..5 V, 1..5 V, 0..10 V, 2..10 V<br>» Analog signals (output): 0..20 mA, 4..20 mA, 0..5 V, 1..5 V, 0..10 V, 2..10 V<br>» Switch analog signals via get red-y software | » Power supply 24 Vdc (18 – 30 Vdc), 15 Vdc on request<br>» Addressing and configuration via get red-y software | » Transmission speed max. 12 MBaud<br>» Max. buslength: 1200m at 9,6 kBaud 1000m at 187 kBaud 100m at 12 MBaud<br>» Galvanic isolation 1000V<br>» Selectable device parameters: Flow, setpoint, etc. (30 parameters) | » Update time interface: 1 to 10 milliseconds typical<br>» Selectable device parameters (PDO), 25 inputs & 12 outputs<br>» Support for line, tree, star & ring topology<br>» Max. speed: 100 Mbps data communication (with copper)<br>» Full duplex transmission<br>» Fail safe mechanism to prevent accidental writes | » Update time interface: 0.11 milliseconds for 256 digital I/O<br>» Available device parameters (PDO), 25 inputs & 12 outputs<br>» Support for line, tree, star & ring topology<br>» Max. speed: 100 Mbps data communication (with copper)<br>» Full duplex transmission<br>» Fail safe mechanism to prevent accidental writes | » Display all key device information, e.g. reading, temperature, total, etc..<br>» Specify a setpoint for flow and pressure controllers<br>» Adjust the control speed<br>» Runs under Windows 10<br>» Plug & play with USB cable (PDM-U)<br>» Download the software at **www.voegtlin.com** | » Required software: – LabView 8.6 or higher – NI-VISA driver – NI-Serial driver<br>» Download the LABVIEW VIs at **www.voegtlin.com** |
| **Protocol** | | | | | | |
| – | Modbus RTU | Profibus (optional) | Profinet RT (optional) | EtherCAT (optional) | Modbus RTU | Modbus RTU, Profibus / analog signals |
| **HW interface** | | | | | | |
| Analog | RS-485 | RS-485 | Ethernet | Ethernet | – | – |
| **Device plug** | | | | | | |
| Sub D 9 pole (male) | Sub D 9 pole (male) | Sub D 9 pole (female) | 2 x RJ45 or 2 x M12 | 2 x RJ45 or 2 x M12 | – | – |
| **Accessories** | | | | | | |
| **PAC (Art.-No. 328-2164)** For use with analog setpoint and reading signals | **PDC (Art.-No. 328-2165)** For digital operation of meter/controller<br><br>For more cables and power supplies see datasheet ‹cable accessories for red-y smart series› | – | – | – | **PDM-U (Art.-No. 328-2180)** Communication cable USB/RS-485<br>**PSD** Plug-type power supply 24Vdc<br>For more cables and power supplies see datasheet ‹cable accessories for red-y smart series› | **PDM-U (Art.-No. 328-2180)** Communication cable USB/RS-485<br>**PSD** Plug-type power supply 24Vdc |
| **Information** | | | | | | |
| Operating instructions | www.modbus.org<br>Operating instructions Digital Communication | www.profibus.com<br>Operating instructions Digital Communication | www.profinet.com<br>Operating instructions Profinet | www.ethercat.org<br>Operating instructions EtherCAT | Data sheet get red-y software<br>Operating instructions get red-y software | www.ni.com<br>Operating instructions LabVIEW |

ISO 9001 swiss safety center certified system

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