




## Communication to the 5<sup>th</sup>

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

	Analog operation		Digital operation		Software tools		
	analog		MODBUSRTU				
	Analog signals		Modbus RTU	Profibus DP-V0/DP-V1		get red-y 5 software	LabVIEW VIs
	The devices of the <i>red-y smart series</i> offer the opportunity to read the measurement via the analog interface and specify a set value.		The <i>Modbus RTU</i> 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, <i>Profibus</i> is the most successful fieldbus in the world. The devices of the red-y smart series are certified for the protocol variants <i>Profibus DP-V0</i> und <i>DP-V1</i> .		The free software <i>get red-y</i> offers efficient device management for devices of the <i>red-y smart series</i> . Besides displaying key information from devices, users can also view and modify various operating parameters.	<i>LabVIEW</i> from National Instruments offers engineers and scientists a rapid and cost-effective possibility for connecting measurement and control hardware. The <i>virtual instruments</i> (VI) allow easy read and write access to the devices of the <i>red-y smart series</i> .
Specifications	<ul style="list-style-type: none"> <li>» Analog signals (input): 0..20 mA, 4..20 mA, 0..5 V, 1..5 V, 0..10 V, 2..10 V</li> <li>» Analog signals (output): 0..20 mA, 4..20 mA, 0..5 V, 1..5 V, 0..10 V, 2..10 V</li> <li>» Switch analog signals via <i>get red-y</i> software</li> </ul>		<ul style="list-style-type: none"> <li>» Power supply 24 Vdc (18 – 30 Vdc), 15 Vdc on request</li> <li>» Addressing and configuration via <i>get red-y</i> software</li> </ul>	<ul style="list-style-type: none"> <li>» Transmission speed max. 12 MBaud</li> <li>» Max. buslength: 1200m at 9,6 kBaud 1000m at 187 kBaud 100m at 12 MBaud</li> <li>» Galvanic isolation 1000V</li> <li>» Selectable device parameters: Flow, setpoint, etc. (30 parameter)</li> </ul>		<ul style="list-style-type: none"> <li>» Display all key device information, e.g. reading, temperature, total, etc..</li> <li>» Specify a setpoint for flow and pressure controllers</li> <li>» Adjust the control speed</li> <li>» Runs under Windows XP, Vista &amp; 7</li> <li>» Plug &amp; play with USB cable (PDM-U)</li> <li>» Download the free <i>get red-y</i> software at <a href="http://www.voegtlin.com">www.voegtlin.com</a></li> </ul>	<ul style="list-style-type: none"> <li>» Required software:                             <ul style="list-style-type: none"> <li>– LabView 8.6 or higher</li> <li>– NI-VISA driver</li> <li>– NI-Serial driver</li> </ul> </li> <li>» Download the <i>LABVIEW VIs</i> software at <a href="http://www.voegtlin.com">www.voegtlin.com</a></li> </ul>
Protocol	–		Modbus RTU	Profibus (optional connector)		Modbus RTU	Modbus RTU, Profibus / analog signals
HW interface	Analog		RS-485	RS-485		–	–
Device plug	Sub D 9 pole (male)		Sub D 9 pole (male)	Sub D 9 pole (female)		–	–
Accessories	<b>PAC (Art.-N° 328-2164)</b> For use with analog setpoint and reading signals		<b>PDC (Art.-N° 328-2165)</b> For digital operation of meter/controller	–		<b>PDM-U (Art.-N° 328-2169)</b> Communication cable USB/RS-485  <b>PSD</b> Plug-type power supply 24Vdc	<b>PDM-U (Art.-N° 328-2169)</b> Communication cable USB/RS-485  <b>PSD</b> Plug-type power supply 24Vdc
			For more cables and power supplies see datasheet <cable accessories for <i>red-y smart series</i> >		For more cables and power supplies see datasheet <cable accessories for <i>red-y smart series</i> >		
Information	Operating instructions <i>red-y smart series</i> part I		www.modbus.org Operating instructions <i>red-y smart series</i> part II	www.profibus.com Operating instructions <i>red-y smart series</i> part II		Data sheet <i>get red-y</i> software Operating instructions <i>get red-y</i> software	www.ni.com Operating instructions <i>LabVIEW</i>

