

Troubleshooting

Mass Flow Meters & Controllers red-y smart series

In the following table we have compiled fault symptoms, their possible causes and possible measures. If you do not recognize your fault symptom, or the proposed measures were not successful, please consult your sales partner.

If you have to remove the measuring or control device from the pipeline, please observe any flushing procedures and the relevant safety guidelines.

Error	Possible causes	Measures*
Output signal is larger than the setpoint	Valve is contaminated and cannot close fully	Flush the valve by repeated 'Valve 100%' open/close in the software under 'Signals'. Please consult your sales partner
	The setpoint and actual-value signals were set differently, ex. setpoint 0-20 mA / actual value 4-20 mA	Operate the device with the software. The setpoint and actual values can be changed in 'Signals'
Output signal is smaller than the setpoint	The gas supply is inadequate. The counter pressure is too high	Increase the inlet pressure. Check the valve voltage in the get red-y software. This must not be > 95%. (can be seen in the main menu 'Graph', above right)
Analog setpoint is not acquired	Incorrect electrical connection	Please check that the pin assignments are correct
	The control mode is set to 'Digital'	Change the control mode to 'Automatic' or 'Analog' in the 'Signals' window of the software
	Wrong analog signal	Operate the device with the software. The analog setpoint and actual values and the unit can be changed in 'Signals'
	Device is being simultaneously operated with the get red-y software; digital communication has priority	Close get red-y or change the control mode to 'Analog' in the 'Signals' window of the software
Analog output stays at 4 mA or 0/1 V	Low flow cutoff has been enabled	Change the low flow cutoff in the 'Signals' menu. Below this set value, the device displays shows zero flow
Output signal is 21.6 mA / 5.4 or 10.8 V (only with measuring devices)	Flow is too high (Overflow)	Reduce the flow rate. If necessary, the full scale can be extended on site. Please consult your sales partner
	Device is heavily contaminated	Please consult your sales partner
	Sensor faulty	Please consult your sales partner
Flow is shown despite setpoint zero	Valve is leaking, contaminated	Flush the valve by repeated 'Valve 100%' open/close in the software under 'Signals'. Please consult your sales partner
	Sensor contaminated	Please consult your sales partner
	The device is being operated with a different gas from its calibration	For multi-gas instruments, you can set the appropriate gas type with the software
	Offset due to mounting position	Particularly with small measurement ranges, heavy gases and gauge pressures > 5 bar, a zero-point offset can occur where the mounting position is vertical >> chimney effect. Where possible, mount the device horizontally
	'Power-up' setpoint is enabled	In this case the device controls to a defined setpoint as soon as it is powered with 24 V. Disable the 'power-up' setpoint or enter a setpoint value 0

* Measures with references to the software *get red-y* refer to the software version 4.8

Error	Possible causes	Measures*
No digital communication is possible	Several devices with the same address have been connected to a bus. During operation, the address of several devices was changed with the 'All address 247' button	Connect one device after another to the software and assign the device addresses
	The power-supply device is too weak to power several devices simultaneously	Use a power supply with a higher power rating (see datasheet 329-3010_ml_cablePSD.pdf 'Power Supply Devices'). Please consult your sales partner
	You are working with devices from different generations Serial number < 109'999 Smart 3 Serial number > 110'000 Smart 4	In mixed-mode operation, only the PDM-U digital cable with USB port can be used
	The USB port has not been assigned	Assign the correct COM port in the Device Manager on your computer. Warning: Please: no higher than 9!
	The baud rate has been changed	The software only works with a baud rate of 9600
	You are working with an interface converter that may require level matching	Refer to the connection diagram for the digital connection. Please consult your sales partner
	Faulty circuit board	Please consult your sales partner
No flow, despite the setpoint being above zero	The control mode is set incorrectly	Change the control mode to 'Automatic' in the 'Signals' menu
	There is no gas flow or pressure	Open the gas supply, or check the inlet and the outlet pressure
	The control parameters are not set correctly	You can reset the control parameters in the 'Graph' menu. As shipped from the factory, the parameters are already set Default settings: N = 2000 KP = 1000 Ki = 600 Kd = 0
After about 10 seconds, the controller 'clicks' at short intervals	There is no gas flow, although a setpoint is being applied	Ensure that gas can flow; check the inlet and outlet pressure
Control is unstable	Pressure controller is faulty, not suitable for the control range, or of poor quality	Use a dead volume after the pressure reducer as a buffer, or a suitable pressure reducer
	Process pressure fluctuates greatly	Use a buffer volume after the pressure reducer.
	Gas supply with pulsating pump	Use a dead volume after the pump as a buffer, or choose a pulsation-free pump.
	Outlet pressure too high	Check your process pressures before and after the device
	Dead volume is too small	Use a larger dead volume
	Power-supply device is faulty	Particularly in the case of devices with serial numbers < 109'999, unstable power supplies can result in malfunctions.
	Control parameters are not optimal	Correct the control parameters in the 'Graph' menu as follows: In the case of excessive overshoot: reduce Kp Too slow: increase Kp General oscillation: reduce Ki
	Contamination	Flush the valve by repeated 'Valve 100%' open/close in the software under 'Signals'. Please consult your sales partner
	Wrong flow direction	Please check the flow-direction indicator on the back of the body
Potential differences	Please refer to the 'Grounding' section in the guide	

Error	Possible causes	Measures*
Flow rate does not meet expectations	Leakage	Flow rate > than reference Leakage between measuring device and your reference Flow rate < than reference Leakage upstream of the measuring instrument
	Contamination	With contamination by PTFE tape, for example, it is possible that the flow divider is partially blocked. In this case the device displays more than the reference. Please consult your sales partner
	The device is being operated with a different gas	Connect the intended gas, or change the type of gas in the 'Calibration' menu
	Inlet pressure is too low	Check your inlet and outlet pressures
Device becomes very warm	There is a setpoint signal at the flow controller, although no gas is connected	Check the pressure in your gas supply Set the setpoint to zero or enable the 'detector behavior' in the software (default setting for new device)
Valve opens to 100% with each setpoint, no flow is displayed or the displayed flow remains constant	Sensor is faulty	Please consult your sales partner
Pulsating control after setpoint is applied	Wrong flow direction	Please note the flow-direction indicator on the back of the body

