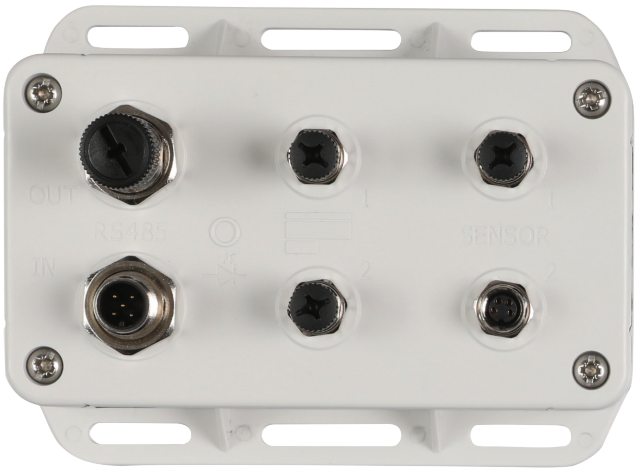


Frese MODBUS System

MODBUS communication for the entire OPTIMA Compact valve series

ROBUST
COMPACT
FLEXIBLE

Frese MODBUS System

Frese MODBUS System provides a complete package solution for Modbus enabled dynamic valves

Frese's quest for simplified and compact digital valve solutions continues with Modbus enabling for the full range of the well-known OPTIMA Compact.

Frese MODBUS System consists of a universal Modbus converter box, which connects our dynamic balancing valves with the central management system.

The converter box can operate two actuators as well as two active sensors for temperature, pressure, humidity, CO2 or any other parameter. This minimizes the required cabling of the Modbus daisy-chain, making it perfect where space is a central issue.

Simplifying complex systems is always a main goal for Frese, and this system is no exception. All components are built with easy installation in mind. Cabling between converter box, actuator and sensors is made easy and flawless with prefabricated cables with standard M8 and M12 connectors, and the converter box can be placed in a convenient location.

Frese MODBUS System allows the customer to operate all valve sizes in one Modbus communications protocol, thus simplifying the digital installation process.

With just one converter box and one Modbus protocol for all our valves this truly is a one-stop solution.

Pressure Independent Balancing and Control

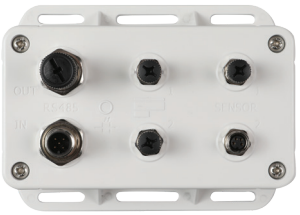
Pressure independent balancing and control is an innovative, energy saving alternative to traditional hydronic balancing and control methods that use separate static balancing valves, differential pressure control valves and two port control valves.

A system with pressure independent balancing and control valves provides efficient and accurate flow limitation, differential pressure control and temperature control. This ensures that the design flow conditions are realised irrespective of pressure fluctuations in the system. Also at part load conditions the required flows are available in all terminal units.

A hydronic system designed and fitted with pressure independent balancing and control valves offers many advantages over traditionally designed, static systems.

These advantages include a simplified system design, ease of selection, system flexibility and a minimised commissioning process. The major benefit is the significant energy saving benefits that can be achieved through maximising Delta T and eliminating overflows in the system.

Technical Data



Frese MODBUS System Converter

- Suitable for two actuators and two active sensors
- Proctection Class IP54

Technical Data

Frese MODBUS System Actuators

DN10-DN32

- Halogen free cable, incl. M8 connector, 1 m or 3 m
- Extension cables available

DN40-DN50

- Pre-fabricated cables available for installation
- Protection class IP54

DN50-DN200

- Pre-fabricated cables available for installation
- Protection class IP54

DN250-DN300

- Special actuator requirements can be accommodated with the Frese MODBUS System - please contact Frese

Technical Data

OPTIMA Compact PICV

DN10 – DN32

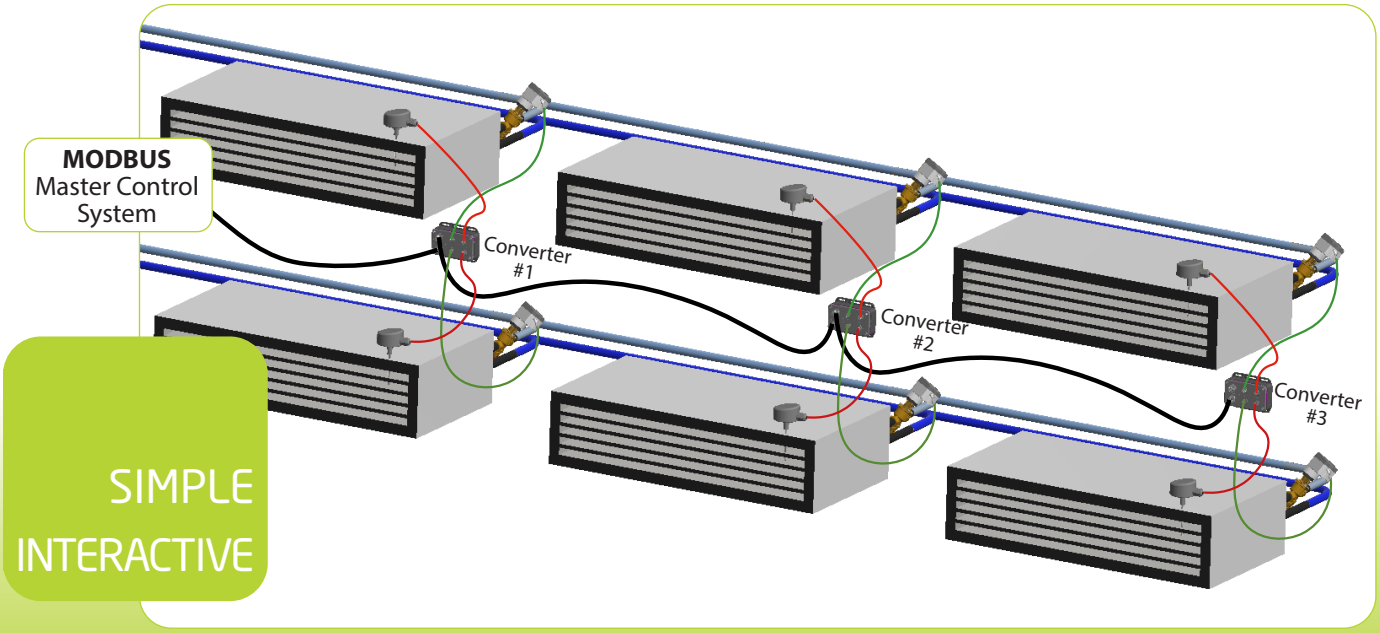
- Max. Differential Pressure: 800 kPa
- Valve Housing: DZR Brass
  Pressure Class: PN25
- Connections: Threaded

DN40 – DN50

- Max. Differential Pressure: 800 kPa
- Valve Housing: Ductile Iron
- Pressure Class: PN25
- Connections: Threaded

DN50 – DN300

- Max. Differential Pressure: 800 kPa
- Valve Housing: GJL-250 / GJS-400
- Pressure Class: PN16 / PN25
- Connections: Flanged



SIMPLE
INTERACTIVE

Function

Frese MODBUS RTU RS485 based System can be used to control 2 (0-10V) actuators and 2 temperature sensors. Both actuators and sensors are delivered with cables and connectors to plug directly into the Modbus converter.

The Frese MODBUS System Converter can operate 2 terminal units with an actuator and a temperature sensor for each unit, and is connected in a daisy chain connection from the main control system.

The Frese MODBUS System Converter can be used in connection with OPTIMA Compact valves in all sizes, combined with the relevant standard 0-10V actuators, and is therefore a standardized and a very flexible solution for Modbus control.

Power Supply Setup

The power consumption increases with the size of the valve and actuator. Therefore the number of Frese MODBUS System Converters in a daisy chain depend on the valve dimension.

DC power is recommended as AC power reduces the total numbers of consumers in the daisy chain.

Technical Data

Temperature Sensor for Frese MODBUS System

- 4-20 mA
- Halogen free cable incl. M8 connector, 3 m
- Suitable for direct mounting in air ducts and sensor pockets

Technical Data

Cables for Frese MODBUS System

- Halogen free cable incl. M8 connector, 5 m for DN 40-DN300 actuators
- Halogen free extension cable incl. M8 connector, 5 m extension cable for sensor and actuators

We create **VALUE** for our customers with **STATE OF THE ART** design:

ROBUST

- ✓ Prefabricated plug-in halogen free cables
- ✓ High protection class of full system (IP54) means that the actuator can be installed in all directions and still be dust and waterproof
- ✓ High EMC reliability of sensors and no requirements for cable length

SIMPLE

- ✓ Easy to install with Phoenix connectors on all cables
- ✓ Valve and actuator can be installed in one process
- ✓ Same register setup for ALL valve sizes eases programming in the BMS
- ✓ One control box for all valve sizes simplifies installation and operation
- ✓ Visual indication of actuator position via LCD display (DN10-DN32)

FLEXIBLE

- ✓ Hundreds of valves can be fully opened for flushing with a single mouse click in the BMS
- ✓ Each converter box can control two actuators and two sensors, which minimises cabling

COMPACT

- ✓ Complete package solution
- ✓ The converter box allows for smaller actuators, which are easier to install in cramped spaces
- ✓ Cable connections and address setting can be done at a more convenient location
- ✓ Superior flow control due to full stroke modulation at all presettings

INTERACTIVE

- ✓ Insight in historical data via BMS
- ✓ Predictive maintenance since all valves can be monitored remotely
- ✓ Status on valve position available via BMS
- ✓ Alarms in case of short circuits, error message on valve or actuator etc.
- ✓ Valves can be set remotely, so there is no need to visit the FCU or to remove the actuator

KNOWLEDGE

QUALITY

INNOVATION

MANUFACTURING EXCELLENCE

CUSTOMER FOCUS

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