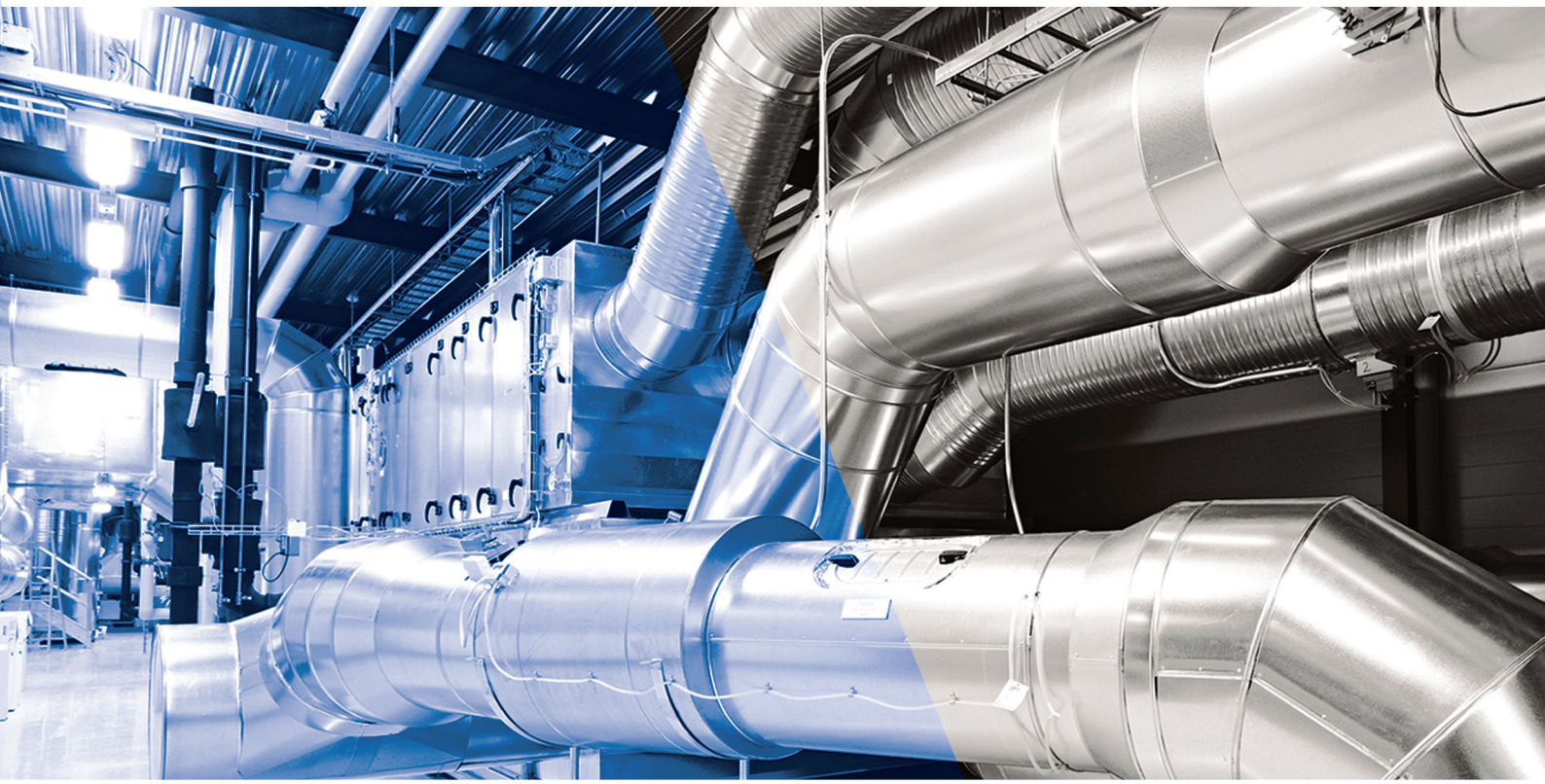
SENTERA
CONTROLS

# Product overview

## Your partner in HVAC control solutions



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## Sentera HVAC control solutions

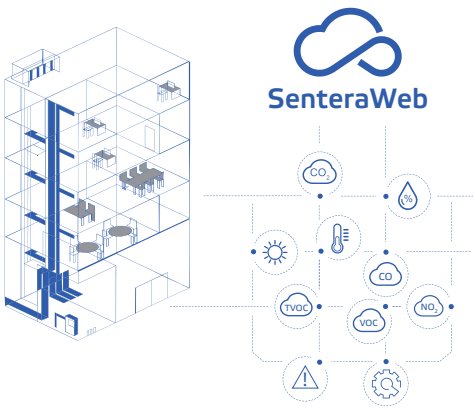
Our customers praise our HVAC control solutions because they are innovative and at the same time easy to use.

Sentera is a leading manufacturer of control solutions for HVAC and ventilation systems. The company started producing fan speed controllers in 1997. Over the next decades, the product range expanded with electric heater controllers, HVAC sensors, sensor controllers, power supply modules, and distribution boxes. Today, our product range covers different solutions to control AC and EC fan speed, both manually and demand-based.

Innovation is our drive! New technologies create new possibilities to increase ventilation systems' energy efficiency and performance. Sentera universal HVAC controllers communicate seamlessly with its HVAC sensors and fan speed controllers. They control airflows in function of your requirements. Our control solutions optimize your indoor air quality while realizing significant energy savings.

## Modbus communication

Modbus communication was developed to allow sensors, speed controllers and logic controllers to work together reliably in an industrial environment. Also in a building there is a great risk of interference for classic analogue (0-10 Volt) signals, especially in the case of long cables that are located in the vicinity of power cables. Modbus communication is much more stable and reliable compared to analogue signals. Cable lengths up to 1.000 m are possible. Thanks to the RS485 technology, Modbus is a robust and interference-resistant communication. Therefore, Modbus communication is a widely used standard, both in industrial and in HVAC applications. Since it is an open protocol, devices from different manufacturers can exchange information with each other via Modbus communication. It can be seen as a universal language. Sentera products also exchange information via Modbus communication. This makes it possible to make them work together in a simple way. Adjusting settings of Sentera devices can also be done easily via Modbus communication.




## SenteraWeb – your HVAC cloud platform

Via the Sentera Internet Gateway, your smart ventilation system can be connected to the SenteraWeb cloud platform.

The following functionalities become available with SenteraWeb: Data logging, alert tool, scheduler function, application specific firmware download, and remote monitoring to optimize maintenance.

Thanks to our exceptionally wide range of product groups, we can combine standard products and create a complete HVAC control solution, and supplement your ventilation system with single products! Single products and complete control solutions can be monitored and controlled via the internet.

## Power over Modbus or PoM

PoM stands for Power over Modbus. Sentera developed PoM to simplify wiring and connections. Sentera devices with PoM interconnect via one UTP cable with one RJ45 connector. Both power and communication are distributed via a standard UTP cable.

## HVAC controllers

| Short description | Power supply | Article code | Product picture |
|---|---|---|---|
| Universal HVAC controller with 5" multitouch capacitive TFT-LCD display. This controller requires dedicated firmware for a specific application. Up to 247 slave devices can be connected via Modbus communication. | 24 VDC, PoM | RDPUM |  |
| Universal HVAC controller for DIN rail mounting. This controller requires dedicated firmware for a specific application. Up to 247 slave devices can be connected via Modbus communication. | | DRPUM |  |
| AC fan speed controller for demand-based ventilation or simple local fan speed control. | 110—230 VAC / 50—60 Hz | RDCZ9-15-XX |  |
| EC fan speed controller for demand-based ventilation or simple local fan speed control. | | RDCV9-AD-XX | |
| Automatic fan speed controller for AC fans with single-phase motor | 85 - 305 VAC / 50 - 60 Hz | TCMF8-302DM |  |
| Fan speed controller for ceiling fans with single-phase motor. | | TCMF8-602DM | |
| Ceiling fan speed controller for AC fans with single-phase motor. | | TCMF8-302WF | |
| Automatic fan speed controller for AC fans with single-phase motor. | | TCMF8-602WF | |
| Automatic fan speed controller for AC fans with single-phase motor. | | TCMF8-302EW | |
| Destratification controller to regulate ceiling fans. | | TCMF8-602EW | |
| HVAC controller with two 0-10 Volt outputs to control EC fans. | 85 - 264 VAC, 50 / 60 Hz | ECMF8-AO -DM |  |
| HVAC controller with Wi-Fi gateway for EC fans. | | ECMF8-AO -WF | |
| HVAC controller with internet gateway for EC fans. | | ECMF8-AO -EW | |

## General information

Sentera HVAC sensors or transmitters measure temperature/relative humidity – $CO_2$ – air quality or TVOC - CO - LPG and ambient light. These parameters have a direct impact on the health, the well-being and the comfort of residents. The differential pressure sensors also measure air volume flow or air velocity. The sensor controllers can, in turn, directly control EC fans, AC fan speed controllers or damper actuators.

### Temperature sensors

| Short description | PT100 | PT500 | PT1000 | NTC | Modbus | Protection degree | Article code | Product picture |
|---|---|---|---|---|---|---|---|---|
| Passive temperature sensor for wall mounting. The platinum sensor element has a PTC of resistance. Any device with an input for 'passive temperature sensors' can read out the measured temperature. | ✓ | ✗ | ✗ | ✗ | ✗ | IP30 | ROTSN-P100 |  |
| | ✗ | ✓ | ✗ | ✗ | | | ROTSN-P500 | |
| | ✗ | ✗ | ✓ | ✗ | | | ROTSN-P1K0 | |
| Mechanical thermostat that controls temperatures between 0 and 40 °C. The requested temperature can be adjusted via the rotary knob. The output contact can switch loads up to 16 A. Ideal for heating or cooling applications in warehouses, greenhouses, stables, etc. The thermostat can be wall mounted and does not require any supply voltage. | ✗ | ✗ | ✗ | ✗ | ✗ | IP54 | IMRT-0/40 |  |
| Temperature sensor for air ducts. Available for 24 VDC PoM or 3,3 VDC PoM supply voltage. Choice between probe of 85 or 165 mm long. The measured temperature is transmitted via Modbus RTU - no analogue outputs available. | ✗ | ✗ | ✗ | ✗ | ✓ | IP65 | DTS-M-080 |  |
| | ✗ | ✗ | ✗ | ✗ | | | DTS-M-160 | |
| | ✗ | ✗ | ✗ | ✗ | | | DTS-L-080 | |
| | ✗ | ✗ | ✗ | ✗ | | | DTS-L-160 | |
| Passive temperature probe that measures temperature via a platinum sensor element. They are available with positive (PTC) or negative (NTC) temperature coefficient and with different cable or probe lengths. | ✓ | ✗ | ✗ | ✗ | ✗ | IP65 | FLTSN-P100-010 |  |
| | ✗ | ✓ | ✗ | ✗ | | | FLTSN-P500-010 | |
| | ✗ | ✓ | ✗ | ✗ | | | FSTSN-P500-010 | |
| | ✗ | ✓ | ✗ | ✗ | | | FLTSN-P500-040 | |
| | ✗ | ✗ | ✓ | ✗ | | | FLTSN-P1K0-010 | |
| | ✗ | ✗ | ✓ | ✗ | | | FLTSN-P1K0-040 | |
| | ✗ | ✗ | ✓ | ✗ | | | | |
| | ✗ | ✗ | ✗ | ✓ | | | FLTSN-N-3K3A1-010 | |
| | ✗ | ✗ | ✗ | ✓ | | | FLTSN-N-1K4A1-010 | |
| | ✗ | ✓ | ✗ | ✗ | | IP30 | TUTSN-P500-150 |  |
| | ✗ | ✓ | ✗ | | | | TUTSN-P500-250 | |
| | ✗ | ✗ | ✓ | ✗ | | | TUTSN-P1K0-150 | |
| | ✗ | ✗ | ✓ | ✗ | | | TUTSN-P1K0-250 | |
| Digital temperature sensor that measures the external temperature of metal fluid pipes via a copper contact plate. Available with 24 VDC PoM or 3,3 VDC PoM. The measured temperature is transmitted via Modbus RTU. No analogue outputs are available. | ✗ | ✗ | ✗ | ✗ | ✓ | IP65 | DTP-M |  |
| | ✗ | ✗ | ✗ | ✗ | | | DTP-L | |

| Supply voltages | |
|---|---|
| M | PoM (24 VDC via RJ45 connector) |
| L | PoM (3,3 VDC via RJ12 connector) |

## General information

Sentera HVAC sensors or transmitters measure temperature/relative humidity – $CO_2$ – air quality or TVOC - CO - LPG and ambient light. These parameters have a direct impact on the health, the well-being and the comfort of residents. The differential pressure sensors also measure air volume flow or air velocity. The sensor controllers can, in turn, directly control EC fans, AC fan speed controllers or damper actuators.

### Temperature, relative humidity

| Short description | 1 output | 3 outputs | Modbus | Protection degree | Article code | Product picture |
|---|---|---|---|---|---|---|
| Sensor controller for measuring/controlling temperature, relative humidity and ambient light level in rooms. For flush or surface mounting. Different supply voltages are possible. The controller has a single analogue output based on the measured values. All settings can be adjusted via Modbus RTU. | ✓ | ✗ | ✓ | IP30 | FCTHF<br>FCTHG<br>FCTH8 |  |
| Room transmitter for measuring temperature, relative humidity and ambient light level. For surface mounting. Different supply voltages are possible. Data are transmitted via 3 analogue outputs or Modbus RTU. All parameters are adjustable via Modbus RTU and different output types can be selected. | ✗ | ✓ | ✓ | IP30 | RSTHF-3<br>RSTHG-3<br>RSTHH-3 |  |
| | ✗ | ✗ | ✓ | | RSTHM-2 | |
| This room transmitter is identical to RSTHM-2 but additionally also measures wall temperature. | ✗ | ✗ | ✓ | | RWTHM-2 | |
| Sensor controller for measuring/controlling temperature, relative humidity and ambient light level. For surface mounting. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU. Different output types can be selected. | ✓ | ✗ | ✓ | | RCTHF-2<br>RCTHG-2<br>RCTHH-2 | |
| | ✗ | ✗ | ✓ | | RCTHM-2 | |
| Duct transmitter for measuring temperature and relative humidity. Different supply voltages are possible. Data are transmitted via 3 analogue outputs or via Modbus RTU. All parameters are settable via Modbus RTU and different output types can be selected. | ✗ | ✓ | ✓ | IP54 / IP20 | DSTHF-3<br>DSTHG-3 |  |
| | ✗ | ✗ | ✓ | | DSTHM-2 | |
| Sensor controller for measuring/controlling temperature and relative humidity in air ducts. Different supply voltages are possible. Data are transmitted via one analogue output or via Modbus RTU. All settings can be adjusted via Modbus RTU. Different output types can be selected. | ✓ | ✗ | ✓ | | DCTHF-2<br>DCTHG-2 | |
| | ✗ | ✗ | ✓ | | DCTHM-2 | |
| Outdoor transmitter for measuring temperature, relative humidity and ambient light level in harsh environments or outdoor applications. For surface mounting. Data are transmitted via Modbus RTU communication - no analogue outputs are available. | ✗ | ✗ | ✓ | IP65 | ODTHM |  |
| Outdoor controller for measuring/controlling temperature, relative humidity and ambient light level in harsh environments or outdoor applications. For surface mounting. Data are transmitted via Modbus RTU communication - no analogue outputs are available. | ✗ | ✗ | ✓ | | OCTHM-R |  |
| This adaptor box is necessary to connect an SWCSM sensor to a Sentera PoM network. It guarantees IP65 protection against ingress of water and dust. | ✗ | ✗ | ✓ | | ADPT-SWCSM |  |
| This sensor measures the soil water content and needs a 24 VDC supply voltage. All settings are adjustable via Modbus RTU communication. Typically this, type of sensor is used in agricultural applications to prevent overwatering. | ✗ | ✗ | ✓ | IP67 | SWCSM-075 |  |

| Supply voltages | | | |
|---|---|---|---|
| F | 24 VDC (4-wire connection) | H | PoM or 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) | 8 | 85—264 VAC |
| M | PoM (24 VDC via RJ45 connector) | | |

## Temperature, relative humidity & $CO_2$

| Short description | 1 output | 3 outputs | Modbus | Protection degree | Article code | Product picture |
|---|---|---|---|---|---|---|
| Sensor controller for measuring/controlling temperature, relative humidity, $CO_2$ and ambient light level in rooms. For flush or surface mounting. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU and different output types can be selected. Available with or without audible alarm. | ✓ | ✗ | ✓ | IP30 | FCMFF-R |  |
| | | | | | FCMFG-R | |
| | | | | | FCMF8-R | |
| Room transmitter for measuring temperature, relative humidity, $CO_2$ and ambient light level. For surface mounting. Different supply voltages are possible. Data are transmitted via 3 analogue outputs or Modbus RTU. All parameters are adjustable via Modbus RTU and different output types can be selected. Available with or without audible alarm. | ✗ | ✓ | ✓ | | RSMFF-3 |  |
| | | | | | RSMFG-3 | |
| | | | | | RSMFH-3 | |
| | ✗ | ✗ | ✓ | | RSMFM-3 | |
| Sensor controller for measuring/controlling temperature, relative humidity, $CO_2$ and ambient light level in rooms. For surface mounting. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU and different output types selected. | ✓ | ✗ | ✓ | | RCMFF-3 | |
| | | | | | RCMFG-3 | |
| | | | | | RCMFH-3 | |
| | ✗ | ✗ | ✓ | | RCMFM-3 | |
| Duct transmitter for measuring temperature, relative humidity and $CO_2$. Different supply voltages are possible. Data are transmitted via 3 analogue outputs or Modbus RTU. All parameters are settable via Modbus RTU and different output types can be selected. | ✗ | ✓ | ✓ | IP54 / IP20 | DSMHF-2R |  |
| | | | | | DSMHG-2R | |
| | ✗ | ✗ | ✓ | | DSMHM-2R | |
| Sensor controller for measuring/controlling temperature, relative humidity and $CO_2$ in air ducts. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU. Different output types can be selected. | ✓ | ✗ | ✓ | | DCMFF-2R | |
| | | | | | DCMFG-2R | |
| | ✗ | ✗ | ✓ | | DCMFM-2R | |
| Outdoor transmitter with a corrosion protective and ammonia resistant coating for measuring temperature, relative humidity, $CO_2$ and ambient light level in harsh environments or outdoor applications. For surface mounting. Data are transmitted via Modbus RTU - no analogue outputs available. | ✗ | ✗ | ✓ | IP65 | ODMHM-R |  |
| Outdoor transmitter for measuring temperature, relative humidity, $CO_2$ and ambient light level in harsh environments or outdoor applications. For surface mounting. Data are transmitted via Modbus RTU - no analogue outputs available. | ✗ | ✗ | ✓ | | ODMFM-R | |
| Outdoor controller for measuring/controlling temperature, relative humidity, $CO_2$ and ambient light level in harsh environments or outdoor applications. The enclosure allows for surface mounting. Data are transmitted via Modbus RTU - no analogue outputs available. | ✗ | ✗ | ✓ | | OCMFM-R |  |

| Supply voltages | | | |
|---|---|---|---|
| F | 24 VDC (4-wire connection) | H | PoM or 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) | 8 | 85—264 VAC |
| M | PoM (24 VDC via RJ45 connector) | | |

# HVAC transmitters and sensor controllers

## Temperature, relative humidity & TVOC

| Short description | 1 output | 3 outputs | Modbus | Protection degree | Article code | Product picture |
|---|---|---|---|---|---|---|
| Sensor controller for measuring/controlling temperature, relative humidity, TVOC and ambient light level in rooms. For flush or surface mounting. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU. Different output types can be selected. Available with or without audible alarm. | ✓ | ✗ | ✓ | IP30 | FCVCF-R |  |
| | | | | | FCVCG-R | |
| | | | | | FCVC8-R | |
| Room transmitter for measuring temperature, relative humidity, TVOC and ambient light level. For surface mounting. Different supply voltages are possible. Data are transmitted via 3 analogue outputs or Modbus RTU. All parameters are adjustable via Modbus RTU and different output types can be selected. Available with or without audible alarm. | ✗ | ✓ | ✓ | | RSVCF-R |  |
| | | | | | RSVCG-R | |
| | | | | | RSVCH-R | |
| | ✗ | ✗ | ✓ | | RSVCM-R | |
| Sensor controller for measuring/controlling temperature, relative humidity , TVOC and ambient light level in rooms. For surface mounting. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU. Different output types can be selected. | ✓ | ✗ | ✓ | | RCVCF-R | |
| | | | | | RCVCG-R | |
| | | | | | RCVCH-R | |
| | ✗ | ✗ | ✓ | | RCVCM-R | |
| Duct transmitter for measuring temperature, relative humidity and TVOC. Different supply voltages are possible. Data are transmitted via 3 analogue outputs or Modbus RTU. All parameters are settable via Modbus RTU and different output types can be selected. | ✗ | ✓ | ✓ | IP54 / IP20 | DSVCF-R |  |
| | | | | | DSVCG-R | |
| | ✗ | ✗ | ✓ | | DSVCM-R | |
| Sensor controller for measuring/controlling temperature, relative humidity and TVOC in air ducts. Different supply voltages are possible. Data are transmitted via one analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU. Different output types can be selected. | ✓ | ✗ | ✓ | | DCVCF-R | |
| | | | | | DCVCG-R | |
| | ✗ | ✗ | ✓ | | DCVCM-R | |
| Outdoor transmitter for measuring temperature, relative humidity, TVOC and ambient light level in harsh environments or outdoor applications. For surface mounting. Data are transmitted via Modbus RTU - no analogue outputs available. | ✗ | ✗ | ✓ | IP65 | ODVCM-R |  |
| Outdoor controller for measuring/controlling temperature, relative humidity, TVOC and ambient light level in harsh environments or outdoor applications. For surface mounting. Data are transmitted via Modbus RTU - no analogue outputs available. | | | | | OCVCM-R |  |

| Supply voltages | | | |
|---|---|---|---|
| F | 24 VDC (4-wire connection) | H | PoM or 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) | 8 | 85—264 VAC |
| M | PoM (24 VDC via RJ45 connector) | | |

## Temperature, relative humidity, CO & LPG

| Short description | 1 output | 3 outputs | Modbus | Protection degree | Article code | Product picture |
|---|---|---|---|---|---|---|
| A multi-purpose gas sensor ideal for parking garages. It measures temperature, relative humidity, CO, LPG and ambient light level in harsh environments or outdoor applications. Data are transmitted via Modbus RTU - no analogue outputs available. | ✗ | ✗ | ✓ | IP65 | SPRKM-R |  |

| Supply voltages | | | |
|---|---|---|---|
| F | 24 VDC (4-wire connection) | H | PoM or 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) | 8 | 85—264 VAC |
| M | PoM (24 VDC via RJ45 connector) | | |

## Air filter monitoring

| Short description | Power supply | Number of sensors | Wi-Fi | Ethernet | Built-in Internet Gateway | Protection degree | Article code | Product picture |
|---|---|---|---|---|---|---|---|---|
| Online observation of air filters; different versions include one or two differential pressure sensors to measure the pressure drop on both sides of the filter. Internet connection is based on the integrated Sentera Internet Gateway (SIG-M-2 or SIGWM) and the measurements can be observed in SenteraWeb. | 85 - 264 VAC, 50 / 60 Hz | 1 | ✓ | ✓ | ✓ | IP30 | FIM18-1K0-WF |  |
| | | 1 | ✓ | ✗ | ✓ | | FIM18-1K0-EW | |
| | | 2 | ✓ | ✓ | ✓ | | FIM28-1K0-WF |  |
| | | 2 | ✓ | ✗ | ✓ | | FIM28-1K0-EW | |

## Differential pressure switches

| Short description | 1 output | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| Differential pressure relay to detect overpressure, vacuum or differential pressure. The switching pressure setpoint can be adjusted via a scaled calibrated knob. Available in different ranges and with or without the PVC tubes already included. | ✓ | ✗ | IP54 | PSW-200 |  |
| | | | | PSW-200-PVC | |
| | | | | PSW-500 | |
| | | | | PSW-500-PVC | |

## Single differential pressure and/or air flow sensors

| Short description | 1 output | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| HPS transmitters measure differential pressure or air flow. In combination with PSET-PT* air velocity can be measured as well. Different ranges are available (from -125 up to 10.000 Pa) as well as different types of supply voltages. Data are transmitted via 1 analogue output or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | ✓ | ✓ | IP65 | HPS-F-LP |  |
| | ✗ | ✓ | | HPS-G-LP | |
| | ✓ | ✓ | | HPS-M-LP | |
| | ✓ | ✓ | | HPS-F-1K0-2 | |
| | ✗ | ✓ | | HPS-G-1K0-2 | |
| | ✓ | ✓ | | HPS-M-1K0-2 | |
| | ✓ | ✓ | | HPS-F-2K0-2 | |
| | ✗ | ✓ | | HPS-G-2K0-2 | |
| | ✓ | ✓ | | HPS-M-2K0-2 | |
| | ✗ | ✓ | | HPS-F-4K0-2 | |
| | ✓ | ✓ | | HPS-G-4K0-2 | |
| | ✗ | ✓ | | HPS-M-4K0-2 | |
| | ✓ | ✓ | | HPS-F-10K-2 | |
| | ✗ | ✓ | | HPS-G-10K-2 | |
| | ✓ | ✓ | | HPS-M-10K-2 | |
| DPS transmitters measure differential pressure or air flow. In combination with PSET-PT* air velocity can be measured as well. The display visualises the measurement. Different ranges are available (from -125 up to 10.000 Pa) as well as different types of supply voltages. Data are transmitted via 1 analogue output or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | ✓ | ✓ | | DPS-F-LP |  |
| | ✗ | ✓ | | DPS-G-LP | |
| | ✓ | ✓ | | DPS-M-LP | |
| | ✓ | ✓ | | DPS-F-1K0-2 | |
| | ✗ | ✓ | | DPS-G-1K0-2 | |
| | ✓ | ✓ | | DPS-M-1K0-2 | |
| | ✗ | ✓ | | DPS-F-2K0-2 | |
| | ✓ | ✓ | | DPS-G-2K0-2 | |
| | ✗ | ✓ | | DPS-M-2K0-2 | |
| | ✓ | ✓ | | DPS-F-4K0-2 | |
| | ✗ | ✓ | | DPS-G-4K0-2 | |
| | ✓ | ✓ | | DPS-M-4K0-2 | |
| | ✗ | ✓ | | DPS-F-10K-2 | |
| | ✓ | ✓ | | DPS-G-10K-2 | |
| | ✗ | ✓ | | DPS-M-10K-2 | |

| Supply voltages | |
|---|---|
| F | 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) |
| M | PoM (24 VDC via RJ45 connector) |

| Range | |
|---|---|
| 1K0 | 0-1.000 Pa |
| 2K0 | 0-2.000 Pa |
| 4K0 | 0-4.000 Pa |
| 10K | 0-10.000 Pa |
| LP | -125 Pa to 125 Pa |

## Double differential pressure and/or air flow sensors

| Short description | 2 outputs | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| HPD transmitters can measure differential pressure or air flow in 2 different locations simultaneously. Therefore, they have 2 inputs. In combination with PSET-PT* air velocity can be measured as well. Different ranges are available, from 1.000 to 10.000 Pa. The measured values are transmitted via 2 analogue outputs or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | ✓ | ✓ | IP65 | HPD-F-1K0 |  |
| | | | | HPD-G-1K0 | |
| | | | | HPD-F-2K0 | |
| | | | | HPD-G-2K0 | |
| | | | | HPD-F-4K0 | |
| | | | | HPD-G-4K0 | |
| | | | | HPD-F-10K | |
| | | | | HPD-G-10K | |
| DPD transmitters can measure differential pressure or air flow in 2 different locations simultaneously. Therefore, they have 2 inputs. In combination with PSET-PT* air velocity can be measured as well. The display visualises the measured values. Different ranges are available, from 1.000 to 10.000 Pa. The measured values are transmitted via 2 analogue outputs or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | | | | DPD-F-1K0 |  |
| | | | | DPD-G-1K0 | |
| | | | | DPD-F-2K0 | |
| | | | | DPD-G-2K0 | |
| | | | | DPD-F-4K0 | |
| | | | | DPD-G-4K0 | |
| | | | | DPD-F-10K | |
| | | | | DPD-G-10K | |

| Supply voltages | |
|---|---|
| F | 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) |

| Range | |
|---|---|
| 1K0 | 0-1.000 Pa |
| 2K0 | 0-2.000 Pa |
| 10K | 0-10.000 Pa |

## Basic differential pressure and/or air flow sensors

| Short description | 1 output | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| SPS transmitters measure differential pressure or air flow. The measured value is transmitted via 1 analogue output or Modbus RTU. Available for 2.000 and 6.000 Pa. Settings can be adjusted via Modbus RTU or jumpers on the PCB. | ✓ | ✓ | IP65 | SPS-G-2K0<br>SPS-G-6K0 |  |

| Supply voltages | |
|---|---|
| G | 24 VAC / 24 VDC (3-wire connection) |

| Range | |
|---|---|
| 2K0 | 0-2.000 Pa |
| 6K0 | 0-6.000 Pa |

## Differential pressure and/or air flow controllers for fans

| Short description | 1 output | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| HPSP controllers regulate differential pressure or air flow for fans. In combination with PSET-PT* air velocity can be regulated as well. Different ranges are available (from -125 up to 10.000 Pa) as well as different types of supply voltages. Data are transmitted via 1 analogue output or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | ✓ | ✓ | IP65 | HPSPF-LP |  |
| | | | | HPSPG-LP | |
| | ✗ | ✓ | | HPSPM-LP | |
| | ✓ | ✓ | | HPSPF-1K0-2 | |
| | | | | HPSPG-1K0-2 | |
| | | | | HPSPF-2K0-2 | |
| | | | | HPSPG-2K0-2 | |
| | | | | HPSPF-4K0-2 | |
| | | | | HPSPG-4K0-2 | |
| | | | | HPSPF-10K-2 | |
| | | | | HPSPG-10K-2 | |
| DPSP controllers have a LED display and regulate differential pressure or air flow for fans. In combination with PSET-PT* air velocity can be regulated as well. Different ranges are available (from -125 up to 10.000 Pa), as well as different types of supply voltages. Data are transmitted via 1 analogue output or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | ✓ | ✓ | | DPSPF-LP |  |
| | | | | DPSPG-LP | |
| | ✗ | ✓ | | DPSPM-LP | |
| | ✓ | ✓ | | DPSPF-1K0-2 | |
| | | | | DPSPG-1K0-2 | |
| | | | | DPSPF-2K0-2 | |
| | | | | DPSPG-2K0-2 | |
| | | | | DPSPF-4K0-2 | |
| | | | | DPSPG-4K0-2 | |
| | | | | DPSPF-10K-2 | |
| | | | | DPSPG-10K-2 | |

| Supply voltages | |
|---|---|
| F | 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) |
| M | PoM (24 VDC via RJ45 connector) |

| Range | |
|---|---|
| 1K0 | 0-1.000 Pa |
| 2K0 | 0-2.000 Pa |
| 4K0 | 0-4.000 Pa |
| 10K | 0-10.000 Pa |
| LP | -125 Pa to 125 Pa |

## Differential pressure and/or air flow controllers for dampers

| Short description | 1 output | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| HPSA controllers regulate differential pressure or air flow for damper actuators. In combination with PSET-PT* air velocity can be regulated as well. Different ranges are available (for 1.000 and 2.000 Pa), as well as different types of supply voltages. Data are transmitted via 1 analogue output or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | ✓ | ✓ | IP65 | HPSAF-1K0-2 |  |
| | | | | HPSAG-1K0-2 | |
| | | | | HPSAF-2K0-2 | |
| | | | | HPSAG-2K0-2 | |
| DPSA controllers have a LED display and regulate differential pressure or air flow for damper actuators. In combination with PSET-PT* air velocity can be regulated as well. Different ranges are available (for 1.000 and 2.000 Pa), as well as different types of supply voltages. Data are transmitted via 1 analogue output or Modbus RTU. Different output types can be selected and all settings can be adjusted via Modbus RTU. | | | | DPSAF-1K0-2 |  |
| | | | | DPSAG-1K0-2 | |
| | | | | DPSAF-2K0-2 | |
| | | | | DPSAG-2K0-2 | |

| Supply voltages | |
|---|---|
| F | 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) |

| Range | |
|---|---|
| 1K0 | 0-1.000 Pa |
| 2K0 | 0-2.000 Pa |

## Dual setpoint differential pressure and/or air flow controllers for fans

| Short description | 1 output | Modbus | Protection degree | Article code | Product pictures |
|---|---|---|---|---|---|
| SPS2 controllers for fans have 2 setpoints. They regulate differential pressure and air flow. Different types of supply voltage are available and the output type can be selected. One of both setpoints can be activated via the dry contact input. Data are transmitted via the analogue output or Modbus RTU. All settings can be adjusted via Modbus RTU. Available in the range between 0 and 6.000 Pa. | ✓ | ✓ | IP65 | SPS2F-2K0<br>SPS2G-2K0<br>SPS2F-6K0<br>SPS2G-6K0 |  |

| Supply voltages | |
|---|---|
| F | 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) |

| Range | |
|---|---|
| 2K0 | 0-2.000 Pa |
| 6K0 | 0-6.000 Pa |

## Accessories

| Short description | Article code | Product pictures |
|---|---|---|
| Set for measuring differential pressure or air flow, existing of 2 PVC nozzles and 2 PVC tubes for connecting a differential pressure sensor or controller to a ductwork system. Its maximum working pressure is 10.000 Pa. | PSET-PVC-200 |  |
| Set for measuring differential pressure or air flow, existing of 2 aluminium nozzles and 2 PVC tubes for connecting a differential pressure sensor or controller to a ductwork system. Its maximum working pressure is 10.000 Pa. | PSET-QF-200 |  |
| Pitot tube connection set for measuring air flow or air velocity in combination with a differential pressure sensor. It exists of 1 plastic probe (150mm) and 2 PVC tubes (2m). Its maximum working pressure is 10.000 Pa and can be used for air ducts with a diameter of 100-300mm. | PSET-PTS-200 |  |
| Pitot tube connection set for measuring air flow or air velocity in combination with a differential pressure sensor. It exists of 1 plastic probe (250mm) and 2 PVC tubes (2m). Its maximum working pressure is 10.000 Pa and can be used for air ducts with a diameter of 150-500mm. | PSET-PTL-200 |  |
| Roll of flexible, transparent PVC tube (L 100 m). Typically used in HVAC applications to connect pressure transmitters to air ducts. Its maximum working pressure is 10.000 Pa. | TUBE-PVC |  |
| Wall mounting bracket for DTS sensors. | AWP-10-13-13 |  |
| All-weather protection cover for outdoor sensors or differential pressure sensors. | DTS-MB-BK-ASM |  |

## General information

Electronic fan speed controllers provide infinitely variable speed control for single-phase or three-phase voltage controllable motors. Typically, they are used to control AC fans or pumps in HVAC applications. They use phase angle control - TRIAC technology - to reduce the motor voltage and to regulate the fan speed. Thanks to this technology, these fan speed controllers are completely silent. Depending on the motor type, some additional motor noise at low speed might occur.

### Manual motor control

| Short description | Surface mounting | Inset mounting | Modbus RTU | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|
| Residential electronic fan speed controllers that regulate fan speed from high to low (SDX-DT), from low to high (SDY-DT) or both (SDX-DM). Designed for single-phase voltage controllable motors with a maximum current of 3 A. The enclosure allows inset mounting or surface mounting. The new SDX / SDY series are microprocessor controlled to guarantee accurate motor control and to minimise motor noise. Phase angle control - Triac technology - is used to vary the motor voltage and to regulate the motor speed. | ✓ | ✓ | ✗ | 1,5 A | SDX-1-15-DT |  |
| | | | | 3 A | SDX-1-30-DT | |
| | | | | 1,5 A | SDY-1-15-DT | |
| | | | | 3 A | SDY-1-30-DT | |
| | | | ✓ | 1,5 A | SDX-1-15-DM | |
| | | | | 2,5 A | SDX-1-25-DM | |
| Residential electronic fan speed controllers that regulate fan speed from high to low (MTX / LTX) or from low to high (MTY / LTY). Designed for single-phase voltage controllable motors with a maximum current of 4 A. Their enclosure can be used for inset mounting or surface mounting. Available with LED indicator (LTX / LTY) or without LED indicator (MTX / MTY). Phase angle control - Triac technology - is used to vary the motor voltage and to regulate the motor speed. | ✓ | ✓ | ✗ | 0,5 A | MTX-0-05-AT |  |
| | | | | 1,5 A | MTX-0-15-AT | |
| | | | | 2,5 A | MTX-0-25-AT | |
| | ✓ | ✗ | | 4 A | MTX-0-40-AT | |
| | ✓ | ✓ | | 0,5 A | LTX-0-05-AT | |
| | | | | 1,5 A | LTX-0-15-AT | |
| | | | | 2,5 A | LTX-0-25-AT | |
| | ✓ | ✗ | | 4 A | LTX-0-40-AT | |
| | ✓ | ✓ | | 0,5 A | MTY-0-05-AT | |
| | | | | 1,5 A | MTY-0-15-AT | |
| | | | | 2,5 A | MTY-0-25-AT | |
| | ✓ | ✗ | | 4 A | MTY-0-40-AT | |
| | ✓ | ✓ | | 0,5 A | LTY-0-05-AT | |
| | | | | 1,5 A | LTY-0-15-AT | |
| | | | | 2,5 A | LTY-0-25-AT | |
| | ✓ | ✗ | | 4 A | LTY-0-40-AT | |
| Electronic AC fan speed controllers (Triac technology) for single-phase voltage controllable motors with a maximum current of 10 A. The minimum speed (and maximum speed : ITRS only ) is adjustable via an internal trimmer. There are two start-up modes: kick start and soft start. The motor can be activated or deactivated via the integrated ON-OFF switch (or via the digital input: ITRS only). The TK monitoring function (ITRS only) deactivates the motor in case of overheating. The alarm output indicates motor problems (ITRS only). | ✓ | ✗ | ✗ | 1,5 A | ITR-9-15-DT |  |
| | | | | 3 A | ITR-9-30-DT | |
| | | | | 5 A | ITR-9-50-DT | |
| | | | | 6 A | ITR-9-60-DT | |
| | | | | 10 A | ITR-9100-DT | |
| | | | | 1,5 A | ITRS-9-15-DT | |
| | | | | 3 A | ITRS-9-30-DT | |
| | | | | 5 A | ITRS-9-50-DT | |
| | | | | 6 A | ITRS-9-60-DT | |
| | | | | 10 A | ITRS-9100-DT | |
| Electronic fan speed controllers with an extra light switch. They control single-phase voltage controllable motors with a maximum current of 10 A. They control fan speed by varying the motor voltage via phase angle control - Triac technology. The minimum and maximum speed can be adjusted via internal trimmers. Kick start or soft start acceleration can be selected via a jumper. | ✓ | ✗ | ✗ | 6 A | SLM-0-60-AT |  |
| | | | | 10 A | SLM-0100-AT | |
| Electronic fan speed controller (Triac technology) for single-phase voltage controllable motors with a maximum current of 2,5 A. The minimum and maximum speed can be adjusted via Modbus RTU. The motor voltage is regulated via the 3-button keyboard. Kick start or soft start acceleration can be selected via Modbus RTU. | DIN rail mounting | DIN rail mounting | ✓ | 2,5 A | DRE-1-25-DT |  |

# Variable fan speed controllers

## Manual motor control

| Short description | Surface mounting | Inset mounting | Modbus RTU | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|
| Electronic fan speed controllers (Triac technology) for single-phase voltage controllable motors with a maximum current of 2,5 A. The minimum speed can be adjusted via an internal trimmer. High to low (DRX) of low to high (DRY). | DIN rail mounting | DIN rail mounting | ✗ | 1,5 A | DRX-1-15-AT |  |
| | | | | 2,5 A | DRX-1-25-AT | |
| | | | | 1,5 A | DRY-1-15-AT | |
| | | | | 2,5 A | DRY-1-25-AT | |
| Electronic fan speed controllers (Triac technology) for 120 VAC voltage controllable motors with a maximum current of 6 A. The output voltage towards the motor can be manually regulated via the central knob from minimum (adjusted via an internal trimmer) to maximum. | ✓ | ✗ | ✗ | 1,5 A | USX-7-15-DT |  |
| | | | | 3 A | USX-7-30-DT | |
| | | | | 6 A | USX-7-60-DT | |

## Analogue input motor control

| Short description | Supply voltage | Surface mounting | DIN rail mounting | Modbus RTU | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|
| EVS(S)1 series are electronic fan speed controllers (Triac technology) with analogue input. They regulate the speed of single-phase voltage controllable motors with a maximum current of 10 A. The minimum and maximum speed is adjustable via trimmers. The motor voltage can be regulated via the analogue input or via Modbus RTU. Kick start or soft start acceleration and the operating mode can be selected via Modbus RTU. The TK monitoring function deactivates the motor in case of overheating (EVSS1 only). A remote start/stop command can be generated via the digital input (EVSS1 only). | 230 VAC / 50—60 Hz | ✓ | ✗ | ✓ | 1,5 A | EVS-1-15-DM |  |
| | | | | | 3 A | EVS-1-30-DM | |
| | | | | | 6 A | EVS-1-60-DM | |
| | | | | | 10 A | EVS-1100-DM | |
| | 230 VAC / 50—60 Hz | ✓ | ✗ | ✓ | 1,5 A | EVSS1-15-DM | |
| | | | | | 3 A | EVSS1-30-DM | |
| | | | | | 6 A | EVSS1-60-DM | |
| | | | | | 10 A | EVSS1100-DM | |
| MVS(S)1 series are electronic fan speed controllers (Triac technology) with analogue input. They regulate the speed of single-phase voltage controllable motors with a maximum current of 10 A. The minimum and maximum speed is adjustable via trimmers. The motor voltage can be regulated via the analogue input or via Modbus RTU. Kick start or soft start acceleration and the operating mode can be selected via Modbus RTU. The TK monitoring function deactivates the motor in case of overheating (MVSS1 only). A remote start/stop command can be generated via the digital input (MVSS1 only). | 230 VAC / 50—60 Hz | ✗ | ✓ | ✓ | 1,5 A | MVS-1-15CDM |  |
| | | | | | 3 A | MVS-1-30CDM | |
| | | | | | 6 A | MVS-1-60CDM | |
| | | | | | 10 A | MVS-1100CDM | |
| | 230 VAC / 50—60 Hz | ✗ | ✓ | ✓ | 1,5 A | MVSS1-15CDM | |
| | | | | | 3 A | MVSS1-30CDM | |
| | | | | | 6 A | MVSS1-60CDM | |
| | | | | | 10 A | MVSS1100CDM | |
| Electronic fan speed controllers (Triac technology) with analogue input. They control three-phase voltage controllable motors with a maximum current of 6 A. The minimum and maximum speed is adjustable via trimmers. The motor volltage can be regulated via the analogue input or via Modbus RTU. Kick start or soft start acceleration and the operating mode can be selected via Modbus RTU. The TK monitoring function protects motors against overheating. A remote start/stop command can be generated via the digital input. | 3x 400 VAC / 50 Hz | ✗ | ✓ | ✓ | 3 A | TVSS5-30CDT |  |
| | | | | | 6 A | TVSS5-60CDT | |

| Temperature based motor control | | | | | | |
|---|---|---|---|---|---|---|
| **Short description** | **Supply volgate** | **Surface mounting** | **Modbus RTU** | **Maximum load [A]** | **Article code** | **Product pictures** |
| Electronic (Triac technology) 'plug & play' grow room fan speed controller for single phase motors. The maximum motor current is 6 A. The AC fan speed is controlled automatically based on the measured temperature. Once the measured temperature goes beyond the desired temperature setpoint (15 – 35 °C), the exhaust fan accelerates towards full speed until the measured temperature falls below the setpoint. | 230 VAC / 50—60 Hz | ✓ | ✗ | 6 A | GTE-1-60-DT |  |
| Electronic (Triac technology) 'plug & play' grow room fan speed controller for single phase motors. The maximum motor current is 6 A. The AC fan speed is controlled automatically based on the measured temperature. Once the measured temperature goes beyond the desired temperature setpoint (5 – 35 °C), the exhaust fan accelerates towards full speed until the measured temperature falls below the setpoint. | 230 VAC / 50—60 Hz | ✓ | ✗ | 6 A | GTE21-60-DT | |
| Electronic (Triac technology) grow room fan speed controller for single phase motors. The maximum motor current is 6 A. The AC fan speed is controlled automatically based on the measured temperature (optional PT500 temperature probe is required). Once the measured temperature goes beyond the desired temperature setpoint (GTE-1: 15 – 35 °C / GTE21: 5 – 35 °C), the exhaust fan accelerates towards full speed until the measured temperature falls below the setpoint. | 230 VAC / 50—60 Hz | ✓ | ✓ | 6 A | GTE-1-60-DM |  |
| | | | | | GTE21-60-DM | |
| Electronic (Triac technology) 'plug & play' grow room fan speed and electric heater controller. The combined maximum motor current is 3 A or 6 A. It can control electric heating elements up to 16 A (3,5 kW). The fan speed increases as the temperature rises. The electric heater is activated when the ambient temperature drops below the set temperature. The requested temperature can be set in the range of 21-35 °C. The high and low fan speed level can be adjusted via two potentiometers. The ambient temperature is measured via the integrated temperature probe. | 230 VAC / 50—60 Hz | ✓ | ✗ | 3 A | GTEE1-30-DT |  |
| | | | | 6 A | GTEE1-60-DT | |

## General information

Transformer fan speed controllers control the speed of electric motors in steps. This stepped speed control is caused by the autotransformer technology they are built on. Thanks to this technology, they generate a motor voltage with a perfect sinusoidal shape. This results in an exceptionally quiet motor operation and extended service life. Autotransformers are electrical transformers with a single coil. Their different voltage taps enable reduced voltages. A special impregnated coating reduces the electrical noise from the autotransformers. However, the typical humming noise caused by the transformer technology might be noticeable in more quiet surroundings.

Transformer fan speed controllers are cost-efficient and have proven to be very reliable and robust. They are very easy to install and do not require any configuration.

Some transformer fan speed controllers have an integrated rotary switch to manually adjust the fan speed. Other variants can be controlled remotely via Modbus RTU or via an analogue control signal.

**Single-phase motor controls 115-230 VAC - Modbus RTU motor control**

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| Transformer fan speed controllers for single-phase voltage controllable motors. The supply voltage is in the range of 115 - 230 VAC. They control AC fan speed by varying the motor voltage in steps. The requested fan speed can be adjusted manually or automatically via Modbus RTU communication. In combination with a Sentera HVAC sensor, demand-based ventilation control is possible. | ✗ | ✓ | ✓ | ✓ | ✓ | 1,5 A | RTVS8-15L22 |  |
| | | | | | | 2,5 A | RTVS8-25L22 | |
| | | | | | | 3,5 A | RTVS8-35L22 | |
| | | | | | | 5 A | RTVS8-50L22 | |
| | | | | | | 7,5 A | RTVS8-75L22 | |

## Single-phase motor controls 230 VAC - Manual control for AC fans

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller. They control single phase voltage controllable motors with a maximum current of 20 A. The AC fan speed is regulated in steps by varying the motor voltage. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. The fan speed is regulated in 5 steps via the rotary switch. This switch also has an OFF position. The enclosure allows for surface mounting in indoor environments (IP54). | ✗ | ✗ | ✗ | ✗ | ✗ | 0,8 A | STR-1-08L22 |  |
| | | | | | | 1 A | STR-1-10L10 | |
| | | | | | | 1,5 A | STR-1-15L22 | |
| | | | | | | 2,2 A | STR-1-22L22 | |
| | | | | | | 3,5 A | STR-1-35L22 | |
| | | | | | | 5 A | STR-1-50L22 | |
| | | | | | | 7,5 A | STR-1-75L22 | |
| | | | | | | 10 A | STR-1100L22 |  |
| | | | | | | 13 A | STR-1130L22 | |
| | | | | | | 16 A | STR-1160L20 | |
| | | | | | | 20 A | STR-1200L20 | |
| 5-step fan speed controller with TK monitoring function. This function deactivates the motor in case of overheating. They control single-phase voltage controllable motors with a maximum current of 20 A. The AC fan speed is regulated by varying the motor voltage in steps. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. The fan speed is selected via the 5-step rotary switch. This switch also has an OFF position. The enclosure allows for surface mounting in indoor environments (IP54). | ✗ | ✓ | ✗ | ✗ | ✗ | 1,5 A | STRS1-15L22 |  |
| | | | | | | 2,2 A | STRS1-22L22 | |
| | | | | | | 2,5 A | STRS1-25L22 | |
| | | | | | | 3,5 A | STRS1-35L22 | |
| | | | | | | 5 A | STRS1-50L22 | |
| | | | | | | 7,5 A | STRS1-75L22 | |
| | | | | | | 10 A | STRS1100L22 |  |
| | | | | | | 13 A | STRS1130L22 | |
| | | | | | | 16 A | STRS1160L20 | |
| | | | | | | 20 A | STRS1200L20 | |
| Remotely controlled 5-step fan speed controller. They are controlled via an external switch or control device. They control single phase voltage controllable motors with a maximum current of 7,5 A. The AC fan speed is regulated by varying the motor voltage in steps. We recommend the combination with the 3-step control switch type SMT-1-30-4C. | ✓ | ✗ | ✗ | ✗ | ✗ | 1,5 A | RTR-1-15L22 |  |
| | | | | | | 2,5 A | RTR-1-25L22 | |
| | | | | | | 3,5 A | RTR-1-35L22 | |
| | | | | | | 5 A | RTR-1-50L22 | |
| | | | | | | 7,5 A | RTR-1-75L22 | |
| 5-step fan speed controller with emergency button to activate smoke extraction (full speed). They control the speed of single phase voltage controllable motors with a maximum current of 7,5 A. The AC fan speed is regulated by varying the motor voltage in steps. The smoke extraction can also be activated via the digital input. | ✗ | ✗ | ✗ | ✗ | ✗ | 3,5 A | SER-1-35L22 |  |
| | | | | | | 5 A | SER-1-50L22 | |
| | | | | | | 7,5 A | SER-1-75L22 | |
| 5-step fan speed controller with day-night function. Two optimal motor speeds can be selected. The integrated change-over input makes it possible to select one of these optimal motor speeds. A clock, thermostat or switch can be connected to the change-over input. Single-phase voltage controllable motors with a maximum current of 13 A can be controlled. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. | ✓ | ✗ | ✓ | ✗ | ✗ | 1,5 A | SC2-1-15L25 |  |
| | | | | | | 2,5 A | SC2-1-25L25 | |
| | | | | | | 3,5 A | SC2-1-35L25 | |
| | | | | | | 5 A | SC2-1-50L25 | |
| | | | | | | 7,5 A | SC2-1-75L25 | |
| 5-step fan speed controller with day-night function and TK monitoring function. Two optimal motor speeds can be selected. The integrated change-over input makes it possible to select one of these optimal motor speeds. A clock, thermostat or switch can be connected to the change-over input. The TK monitoring function protects the motor in case of overheating. Single-phase voltage controllable motors with a maximum current of 13 A can be controlled. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. | ✓ | ✓ | ✓ | ✓ | ✓ | 1,5 A | SC2A1-15L25 | |
| | | | | | | 2,5 A | SC2A1-25L25 | |
| | | | | | | 3,5 A | SC2A1-35L25 | |
| | | | | | | 5 A | SC2A1-50L25 | |
| | | | | | | 7,5 A | SC2A1-75L25 | |

# Transformer fan speed controllers

## Single-phase motor controls 230 VAC - Manual control for AC fans

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller with day-night function. Two optimal motor speeds can be selected. The integrated change-over input makes it possible to select one of these optimal motor speeds. A clock, thermostat or switch can be connected to the change-over input. Single-phase voltage controllable motors with a maximum current of 13 A can be controlled. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. | ✓ | ✗ | ✓ | ✗ | ✗ | 11 A | SC2-1100L25 |  |
| | | | | | | 13 A | SC2-1130L25 | |
| Two optimal motor speeds can be selected. The integrated change-over input makes it possible to select one of these optimal motor speeds. A clock, thermostat or switch can be connected to the change-over input. The TK monitoring function protects the motor in case of overheating. Single-phase voltage controllable motors with a maximum current of 13 A can be controlled. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. | | ✓ | ✓ | ✓ | ✓ | 11 A | SC2A1100L25 | |
| | | | | | | 13 A | SC2A1130L25 | |
| Transformer fan speed controller. They control single phase voltage controllable motors with a maximum current of 20 A. The fan speed is regulated in steps by varying the motor voltage. Their TK monitoring function protects the motor against overheating. The digital input can be used for remote start-stop commands. After a power failure, the motor will automatically restart. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. The enclosure allows surface mounting in indoor environments (IP54). | ✓ | ✓ | ✓ | ✓ | ✓ | 1,5 A | STRA1-15L22 |  |
| | | | | | | 2,5 A | STRA1-25L22 | |
| | | | | | | 3,5 A | STRA1-35L22 | |
| | | | | | | 5 A | STRA1-50L22 | |
| | | | | | | 7,5 A | STRA1-75L22 | |
| | | | | | | 10 A | STRA1100L22 |  |
| | | | | | | 13 A | STRA1130L22 | |
| | | | | | | 16 A | STRA1160L20 | |
| | | | | | | 20 A | STRA1200L20 | |
| Transformer fan speed controller. An air flow sensor or pressure relay is required to detect the airflow. The output is activated simultaneously with the fan. In case air flow is not detected within 60 seconds after the motor is started, the gas valve output is deactivated. Local safety regulations often dictate that gas can only be supplied after the kitchen hood exhaust fan above the stove has been activated. Their TK monitoring function protects the motor against overheating. They control single phase voltage controllable motors up to 13 A. After a power failure, the motor will automatically restart. | ✓ | ✓ | ✗ | ✗ | ✓ | 3,5 A | SFPR1-35L22 |  |
| | | | | | | 5 A | SFPR1-50L22 | |
| | | | | | | 7,5 A | SFPR1-75L22 | |
| | | | | | | 10 A | SFPR1100L22 |  |
| | | | | | | 13 A | SFPR1130L22 | |

| Single-phase motor controls 230 VAC - Modbus RTU motor control | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
| Transformer fan speed controllers for single-phase voltage controllable motors. The supply voltage is 230 VAC. They control AC fan speed by varying the motor voltage in steps. The requested fan speed can be adjusted manually or automatically via Modbus RTU communication. In combination with a Sentera HVAC sensor, demand-based ventilation control is possible. | ✗ | ✓ | ✓ | ✓ | ✓ | 1,5 A | RTVS1-15L22 |  |
| | | | | | | 2,5 A | RTVS1-25L22 | |
| | | | | | | 3,5 A | RTVS1-35L22 | |
| | | | | | | 5 A | RTVS1-50L22 | |
| | | | | | | 7,5 A | RTVS1-75L22 | |

| Single-phase motor controls 230 VAC - Analogue input motor control | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Short description** | **ON/OFF via external switch** | **Thermal motor protection (TK) input?** | **NC/NO contacts** | **Alarm output** | **Auto restart after power failure?** | **Maximum load [A]** | **Article code** | **Product pictures** |
| 5-step fan speed controller with 0-10 Volt analogue input. They control single-phase voltage controllable motors with a maximum current of 13 A. The fan speed is regulated by varying the motor voltage in steps. These 5 steps are selected via the analogue control signal (0-10 VDC). The TK monitoring function protects the motor against overheating. The enclosure allows for surface mounting in indoor environments (IP54). | ✗ | ✓ | ✗ | ✗ | ✓ | 1,5 A | STVS1-15L22 |  |
| | | | | | | 2,5 A | STVS1-25L22 | |
| | | | | | | 3,5 A | STVS1-35L22 | |
| | | | | | | 5 A | STVS1-50L22 | |
| | | | | | | 7,5 A | STVS1-75L22 | |
| | | | | | | 10 A | STVS1100L22 |  |
| | | | | | | 13 A | STVS1130L22 | |

## Single-phase motor controls 230 VAC - Temperature based motor control

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller for warm air heaters. These are transformer fan speed controllers with temperature input. The unregulated output can control an external valve for hot water supply. They control the motor in function of the measured temperature. The temperature setpoint can be adjusted via the potentiometer. The fan speed can be manually selected via the rotary switch – 5 different speed selections. In automatic mode fan speed is adjusted in function of the measured temperature. The controllers have a plastic enclosure. | × | × | × | × | × | 2,5 A | GTH-1-25L22 |  |
| | | | | | | 5 A | GTH-1-50L22 | |
| 5-step fan speed controller for warm air heaters. These are transformer fan speed controllers with temperature input. The unregulated output can control an external valve for hot water supply. They control the motor in function of the measured temperature. The temperature setpoint can be adjusted via the potentiometer. The fan speed can be manually selected via the rotary switch – 5 different speed selections. In automatic mode fan speed is adjusted in function of the measured temperature. They also feature Modbus RTU communication. The controllers have a metal enclosure. | × | × | × | × | × | 7,5 A | GTH21-75L22 |  |
| | | | | | | 10 A | GTH21100L22 | |
| Prewired 5-step fan speed controller. Two AC fans with single-phase motor and an electric heating element can be connected via the Euro sockets. When the ambient temperature is below the set temperature, the fan(s) run at minimum speed and the heater is activated. When the ambient temperature climbs above the set temperature, the electric heater is deactivated and the fan speed will increase in steps. The ambient temperature is measured via the already wired PT500 probe. The setpoint temperature can be adjusted via the potentiometer on the front panel. High and low fan speed can be adjusted via the two rotary switches. The supply voltage is 230 VAC. | × | × | × | × | × | 3,5 A | GTTE1-35L22 |  |
| | | | | | | 7,5 A | GTTE1-75L22 | |
| The GTT-1 transformer fan speed controllers regulate the speed of single phase voltage controllable motors by varying the output voltage in function of the measured temperature. They control the fan speed either in automatic or manual mode. Automatic mode features a control algorythm for cooling and allows you to control the speed in five steps according to the measurement of the integrated flying lead temperature sensor. In manual mode, it is possible to select one of the indicated fan speed positions via the integrated control switch. This control switch has 7 positions: OFF - Automatic mode - 5 different speed selections for manual mode. The controllers up to 7,5 A are available in plastic enclosure, while the models above 7,5 A are available in a metal enclosure. | × | × | × | × | × | 3,5 A | GTT-1-35L22 |  |
| | | | | | | 5 A | GTT-1-50L22 | |
| | | | | | | 7,5 A | GTT-1-75L22 | |
| | | | | | | 12 A | GTT-1120L22 |  |

| Single-phase motor controls 230 VAC - Motor control with day-week timer | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
| 5-step fan speed controller with keyboard interface and built-in calendar and TK monitoring function. They can switch between two optimal motor speeds. They control single phase voltage controllable motors with a maximum current of 13 A. The fan speed is regulated in steps by varying the motor voltage. The TK monitoring function protects the motor against overheating. After a power failure, the motor will automatically restart. The enclosure allows for surface mounting in indoor environments (IP54). | ✓ | ✓ | ✓ | ✓ | ✗ | 1,5 A | ST2R1-15L25 |  |
| | | | | | | 2,5 A | ST2R1-25L25 | |
| | | | | | | 3,5 A | ST2R1-35L25 | |
| | | | | | | 5 A | ST2R1-50L25 | |
| | | | | | | 7,5 A | ST2R1-75L25 | |
| | | | | | | 10 A | ST2R1100L25 |  |
| | | | | | | 13 A | ST2R1130L25 | |

## Three-phase motor controls 230 VAC - Manual control for AC fans

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller. Control type: manual switch with 5 positions. They control AC fan speed by varying the motor voltage in steps. All models have a metal enclosure. | ✕ | ✕ | ✕ | ✕ | ✕ | 3,5 A | STR-3-35L10 |  |
| | | | | | | 5 A | STR-3-50L10 | |
| | | | | | | 7,5 A | STR-3-75L10 | |
| | | | | | | 10 A | STR-3100L10 | |
| | | | | | | 13 A | STR-3130L10 | |

# Transformer fan speed controllers

## Three-phase motor controls 400 VAC - Manual control for AC fans

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller for 400V motors. They control three phase voltage controllable motors with a maximum current of 14 A. The AC fan speed is regulated in steps by varying the motor voltage. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. The fan speed is regulated in 5 steps via the rotary switch. This switch also has an OFF position. The enclosure allows for surface mounting in indoor environments (IP54). | ✗ | ✗ | ✗ | ✗ | ✗ | 1,5 A | STR-4-15L40 |  |
| | | | | | | 2,5 A | STR-4-25L40 | |
| | | | | | | 4 A | STR-4-40L40 | |
| | | | | | | 6 A | STR-4-60L40 | |
| | | | | | | 8 A | STR-4-80L40 | |
| | | | | | | 11 A | STR-4110L40 | |
| | | | | | | 14 A | STR-4140L50 | |
| 5-step fan speed controller for 400V motors with TK monitoring function. This function deactivates the motor in case of overheating. They control three-phase voltage controllable motors with a maximum current of 14 A. The AC fan speed is regulated by varying the motor voltage in steps. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. The fan speed is selected via the 5-step rotary switch. This switch also has an OFF position. The enclosure allows for surface mounting in indoor environments (IP54). | ✗ | ✓ | ✗ | ✗ | ✗ | 1,2 A | STRS4-12L40 |  |
| | | | | | | 1,5 A | STRS4-15L40 |  |
| | | | | | | 2,5 A | STRS4-25L40 | |
| | | | | | | 4 A | STRS4-40L40 | |
| | | | | | | 6 A | STRS4-60L40 | |
| | | | | | | 8 A | STRS4-80L40 | |
| | | | | | | 11 A | STRS4110L40 | |
| | | | | | | 14 A | STRS4140L50 | |
| 5-step fan speed controller with day-night function for 400V motors. Two optimal motor speeds can be selected. The integrated change-over input makes it possible to select one of these optimal motor speeds. A clock, thermostat or switch can be connected to the change-over input. The TK monitoring function protects the motor in case of overheating.Three-phase voltage controllable motors with a maximum current of 11 A can be controlled. The perfect sinusoidal shape of the motor voltage guarantees a quiet motor operation. | ✓ | ✗ | ✓ | ✓ | ✓ | 1,5 A | SC2A4-15L55 |  |
| | | | | | | 2,5 A | SC2A4-25L55 | |
| | | | | | | 4 A | SC2A4-40L55 | |
| | | | | | | 6 A | SC2A4-60L55 | |
| | | | | | | 8 A | SC2A4-80L55 | |
| | | | | | | 11 A | SC2A4110L55 | |
| 5-step fan speed controller for with keyboard interface and built-in calendar and TK monitoring function 400V motors.They can switch between two optimal motor speeds. They control three phase voltage controllable motors with a maximum current of 11 A. The fan speed is regulated in steps by varying the motor voltage. The TK monitoring function protects the motor against overheating. After a power failure, the motor will automatically restart. The enclosure allows for surface mounting in indoor environments (IP54). | ✓ | ✓ | ✓ | ✓ | ✗ | 1,5 A | ST2R4-15L55 |  |
| | | | | | | 2,5 A | ST2R4-25L55 | |
| | | | | | | 4 A | ST2R4-40L55 | |
| | | | | | | 6 A | ST2R4-60L55 | |
| | | | | | | 8 A | ST2R4-80L55 | |
| | | | | | | 11 A | ST2R4110L55 | |
| 5-step fan speed controller with digital input (remote ON-OFF), alarm output, unregulated output and TK monitoring function for 400V motors. They control three phase voltage controllable motors with a maximum current of 14 A. The fan speed is regulated in steps by varying the motor voltage. Their TK monitoring function protects the motor against overheating. The digital input can be used for remote start-stop commands. After a power failure, the motor will automatically restart. The output voltage with perfect sinusoidal shape, guarantees quiet motor operation. The enclosure allows for surface mounting in indoor environments (IP54). | ✓ | ✓ | ✓ | ✓ | ✓ | 1,5 A | STRA4-15L40 |  |
| | | | | | | 2,5 A | STRA4-25L40 | |
| | | | | | | 4 A | STRA4-40L40 | |
| | | | | | | 6 A | STRA4-60L40 | |
| | | | | | | 8 A | STRA4-80L40 | |
| | | | | | | 11 A | STRA4110L40 | |
| | | | | | | 14 A | STRA4140L50 | |
| 5-step fan speed controller with built-in relay to control a gas valve. This is the perfect controller for industrial kitchen hoods. An air flow sensor or pressure relay is required to detect the airflow. The output is activated simultaneously with the fan. In case air flow is not detected within 60 seconds after the motor is started, the gas valve output is deactivated. Local safety regulations often dictate that gas can only be supplied after the kitchen hood exhaust fan above the stove has been activated. Their TK monitoring function protects the motor against overheating. They control three phase voltage controllable motors up to 8 A. After a power failure, the motor will automatically restart. | ✓ | ✓ | ✗ | ✗ | ✓ | 1,5 A | SFPR4-15L40 |  |
| | | | | | | 2,5 A | SFPR4-25L40 | |
| | | | | | | 4 A | SFPR4-40L40 | |
| | | | | | | 6 A | SFPR4-60L40 | |
| | | | | | | 8 A | SFPR4-80L40 | |

## Three-phase motor controls 400 VAC - Manual control for AC fans

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller with a built-in thermomagnetic circuit breaker. This provides protection against overload. They control three phase 400 V voltage controllable motors with a maximum current of 11 A. The AC fan speed is regulated in steps by varying the motor voltage. The digital input can be used for remote start-stop commands. After a power failure, the motor will restart automatically. The output voltage with perfect sinusoidal shape, guarantees quiet motor operation. The metal enclosure allows for surface mounting in indoor environments (IP54). | ✓ | × | ✓ | ✓ | ✓ | 1,5 A | STTA4-15L40 |  |
| | | | | | | 2,5 A | STTA4-25L40 | |
| | | | | | | 4 A | STTA4-40L40 | |
| | | | | | | 6 A | STTA4-60L40 | |
| | | | | | | 8 A | STTA4-80L40 | |
| | | | | | | 11 A | STTA4110L40 | |

## Three-phase motor controls 400 VAC - Analogue input motor control

| Short description | ON/OFF via external switch | Thermal motor protection (TK) input? | NC/NO contacts | Alarm output | Auto restart after power failure? | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| 5-step fan speed controller with 0-10 Volt analogue input. They control three phase voltage controllable motors with a maximum current of 11 A. The fan speed is regulated by varying the motor voltage in steps. These 5 steps are selected via the analogue control signal (0-10 VDC). The TK monitoring function protects the motor against overheating. The enclosure allows for surface mounting in indoor environments (IP54). | × | ✓ | × | × | × | 1,5 A | STVS4-15L40 |  |
| | | | | | | 2,5 A | STVS4-25L40 | |
| | | | | | | 4 A | STVS4-40L40 | |
| | | | | | | 6 A | STVS4-60L40 | |
| | | | | | | 8 A | STVS4-80L40 | |
| | | | | | | 11 A | STVS4110L40 | |

## General information

Variable frequency drives provide infinitely variable speed control. Typically, they are used to control AC fans or pumps in HVAC applications. These frequency inverters can control various motor types: single phase AC motors, IE2, IE3 and IE4 induction motors, AC permanent magnet motors, brushless DC motors, synchronous reluctance motors, etc. They use IGBT technology to vary both motor voltage and frequency via pulse width modulation. This results in very precise and efficient motor control. Thanks to the integrated macros, configuration remains easy. Pump mode makes energy-efficient pump control possible. Fan mode (incl. fire operation) makes air handling a breeze, ideal for simple HVAC systems.

**Speed control for single phase motors - 230 VAC supply**

| Short description | Power supply | Motor voltage | IP20 | IP66 | Control switches | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| Frequency inverters with single phase 230 VAC power supply for single phase 230 VAC motors. The following motor types can be controlled: Permanent Split Magnet or PSC motors and shaded-pole motors. All VFD's have built in a PI control, EMC filter class C1, brake chopper and Modbus RTU. They are available in IP20 or IP66 enclosure. | 1x 230 VAC | 1x 230 VAC | ✓ | ✗ | ✗ | 0,37 kW / 4,3 A | FI-E11043E2 |  |
| | | | | | | 0,75 kW / 7 A | FI-E11070E2 | |
| | | | | | | 1,1 kW / 10,5 A | FI-E11105E2 | |
| | 1x 230 VAC | 1x 230 VAC | ✗ | ✓ | ✗ | 0,37 kW / 4,3 A | FI-E11043E6-19 |  |
| | | | | | | 0,75 kW / 7 A | FI-E11070E6-19 | |
| | | | | | | 1,1 kW / 10,5 A | FI-E11105E6-19 | |
| | 1x 230 VAC | 1x 230 VAC | ✗ | ✓ | ✓ | 0,37 kW / 4,3 A | FISE11043E6-19 |  |
| | | | | | | 0,75 kW / 7 A | FISE11070E6-19 | |
| | | | | | | 1,1 kW / 10,5 A | FISE11105E6-19 | |

| Speed control for three-phase 230 VAC motors - 230 VAC supply | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Short description** | **Power supply** | **Motor voltage** | **IP20** | **IP66** | **Control switches** | **Maximum load [A]** | **Article code** | **Product pictures** |
| Frequency inverters with single phase 230 VAC power supply for three phase 230 VAC motors. The following three phase motor types can be controlled: IE2, IE3 and IE4 induction motors, AC permanent magnet motors, brushless DC motors and synchronous reluctance motors. All VFDs have built in PI control, EMC filter class C1, brake chopper and Modbus RTU. They are available in a IP20 or IP66 enclosure. | 1x 230 VAC | 3x 230 VAC | ✓ | ✗ | ✗ | 0,37 kW / 2,3 A | FI-E13023E2 |  |
| | | | | | | 0,75 kW / 4,3 A | FI-E13043E2 | |
| | | | | | | 1,5 kW / 7 A | FI-E13070E2 | |
| | | | | | | 2,2 kW / 10,5 A | FI-E13105E2 | |
| | 1x 230 VAC | 3x 230 VAC | ✗ | ✓ | ✗ | 0,37 kW / 2,3 A | FI-E13023E6-19 |  |
| | | | | | | 0,75 kW / 4,3 A | FI-E13043E6-19 | |
| | | | | | | 1,5 kW / 7 A | FI-E13070E6-19 | |
| | | | | | | 2,2 kW / 10,5 A | FI-E13105E6-19 | |
| | | | | | | 4,0 kW / 15,3 A | FI-E13153E6-19 | |
| | 1x 230 VAC | 3x 230 VAC | ✗ | ✓ | ✓ | 0,37 kW / 2,3 A | FISE13023E6-19 |  |
| | | | | | | 0,75 kW / 4,3 A | FISE13043E6-19 | |
| | | | | | | 1,5 kW / 7 A | FISE13070E6-19 | |
| | | | | | | 2,2 kW / 10,5 A | FISE13105E6-19 | |
| | | | | | | 4,0 kW / 15,3 A | FISE13153E6-19 | |

## Speed control for three-phase 230 VAC motors - three-phase 230 VAC supply

| Short descriptions | Power supply | Motor voltage | IP20 | IP66 | Control switches | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|---|---|---|
| Frequency inverters with three phase 230 VAC power supply for three phase 230 VAC motors. The following motor types can be controlled: IE2, IE3 and IE4 induction motors, AC permanent magnet motors, brushless DC motors and synchronous reluctance motors. All VFDs have built in PI control, EMC filter class C1, brake chopper and Modbus RTU. They are available in a IP20 or IP66 enclosure. | 3x 230 VAC | 3x 230 VAC | ✓ | ✗ | ✗ | 1,5 kW / 7 A | FI-E33070E2 |  |
| | | | | | | 2,2 kW / 10,5 A | FI-E33105E2 | |
| | | | | | | 4,0 kW / 18 A | FI-E33180E2 | |
| | | | | | | 5,5 kW / 24 A | FI-E33240E2 | |
| | | | | | | 7,5 kW / 30 A | FI-E33300E2 | |
| | | | | | | 11 kW / 46 A | FI-E33460E2 | |
| | 3x 230 VAC | 3x 230 VAC | ✗ | ✓ | ✗ | 1,5 kW / 7 A | FI-E33070E6-19 |  |
| | | | | | | 2,2 kW / 10,5 A | FI-E33105E6-19 | |
| | | | | | | 4,0 kW / 18 A | FI-E33180E6-19 | |
| | | | | | | 5,5 kW / 24 A | FI-E33240E6-19 | |
| | | | | | | 7,5 kW / 30 A | FI-E33300E6-19 | |
| | | | | | | 11 kW / 46 A | FI-E33460E6-19 | |
| | 3x 230 VAC | 3x 230 VAC | ✗ | | ✓ | 1,5 kW / 7 A | FISE33070E6-19 |  |
| | | | | | | 2,2 kW / 10,5 A | FISE33105E6-19 | |
| | | | | | | 4,0 kW / 18 A | FISE33180E6-19 | |
| | | | | | | 5,5 kW / 24 A | FISE33240E6-19 | |
| | | | | | | 7,5 kW / 30 A | FISE33300E6-19 | |
| | | | | | | 11 kW / 46 A | FISE33460E6-19 | |

| Speed control for three-phase 400 VAC motors - three-phase 400 VAC supply | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Short description** | **Power supply** | **Motor voltage** | **IP20** | **IP66** | **Control swithes** | **Maximum load [A]** | **Article code** | **Product pictures** |
| Frequency inverters with three phase 400 VAC power supply for three phase 400 VAC motors. The following motor types can be controlled: IE2, IE3 and IE4 induction motors, AC permanent magnet motors, brushless DC motors and synchronous reluctance motors. All VFDs have built in PI control, EMC filter class C1, brake chopper and Modbus RTU. They are available in a IP20 or IP66 enclosure. | 3x 400 VAC | 3x 400 VAC | ✓ | ✗ | ✗ | 0,37 kW / 1,2 A | FI-E44012E2 |  |
| | | | | | | 0,75 kW / 2,2 A | FI-E44022E2 | |
| | | | | | | 1,5 kW / 4,1 A | FI-E44041E2 | |
| | | | | | | 2,2 kW / 5,8 A | FI-E44058E2 | |
| | | | | | | 4,0 kW / 9,5 A | FI-E44095E2 | |
| | | | | | | 5,5 kW / 14 A | FI-E44140E2 | |
| | | | | | | 7,5 kW / 18 A | FI-E44180E2 | |
| | | | | | | 11 kW / 24 A | FI-E44240E2 | |
| | | | | | | 15 kW / 30 A | FI-E44300E2 | |
| | | | | | | 18,5 kW / 39 A | FI-E44390E2 | |
| | | | | | | 22 kW / 46 A | FI-E44460E2 | |
| | 3x 400 VAC | 3x 400 VAC | ✗ | ✓ | ✗ | 0,37 kW / 1,2 A | FI-E44012E6-19 |  |
| | | | | | | 0,75 kW / 2,2 A | FI-E44022E6-19 | |
| | | | | | | 1,5 kW / 4,1 A | FI-E44041E6-19 | |
| | | | | | | 2,2 kW / 5,8 A | FI-E44058E6-19 | |
| | | | | | | 4,0 kW / 9,5 A | FI-E44095E6-19 | |
| | | | | | | 5,5 kW / 14 A | FI-E44140E6-19 | |
| | | | | | | 7,5 kW / 18 A | FI-E44180E6-19 | |
| | | | | | | 11 kW / 24 A | FI-E44240E6-19 | |
| | | | | | | 15 kW / 30 A | FI-E44300E6-19 | |
| | | | | | | 18,5 kW / 39 A | FI-E44390E6-19 | |
| | | | | | | 22 kW / 46 A | FI-E44460E6-19 | |
| | 3x 400 VAC | 3x 400 VAC | ✗ | ✓ | ✓ | 0,37 kW / 1,2 A | FISE44012E6-19 |  |
| | | | | | | 0,75 kW / 2,2 A | FISE44022E6-19 | |
| | | | | | | 1,5 kW / 4,1 A | FISE44041E6-19 | |
| | | | | | | 2,2 kW / 5,8 A | FISE44058E6-19 | |
| | | | | | | 4,0 kW / 9,5 A | FISE44095E6-19 | |
| | | | | | | 5,5 kW / 14 A | FISE44140E6-19 | |
| | | | | | | 7,5 kW / 18 A | FISE44180E6-19 | |
| | | | | | | 11 kW / 24 A | FISE44240E6-19 | |
| | | | | | | 15 kW / 30 A | FISE44300E6-19 | |
| | | | | | | 18,5 kW / 39 A | FISE44390E6-19 | |
| | | | | | | 22 kW / 46 A | FISE44460E6-19 | |

| Fan speed controller for single phase motors - 230 VAC supply | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Short description** | **Power supply** | **Motor voltage** | **IP54** | **Control switches** | **Maximum load [A]** | **Article code** | **Product pictures** |
| The VFSC9 series are AC choppers. They control single phase motors with a maximum current of 2,5 A. The fan speed is controlled by varying the motor voltage via Pulse Width Modulation - IGBT technology. They have an integrated EMC filter class B and Modbus RTU communication. No configuration is required - easy to use! | 1x 110—240 VAC / 50—60 Hz | 1x 110—240 VAC / 50—60 Hz | ✓ | ✓ | 600 W / 2,5 A | VFSC9-25-FP |  |
| | | | | ✗ | 600 W / 2,5 A | VFSC9-25-FC |  |

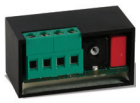
## Accessories for frequency inverters

| Short description | Protection degree | Article code | Product pictures |
|---|---|---|---|
| Adapter to connect Invertek frequency inverter (FI-E and FISE series) to a Sentera Modbus RTU network. The Invertek RS485 communication is converted into Modbus RTU communication. This makes it possible for the Sentera HVAC controllers to control the Invertek frequency inverters via Modbus RTU. | IP30 | ADPT-3SM-F |  |
| Commissioning tool to simplify the setup of your frequency inverter. The Optistick allows for the copying, backup and restoring of parameters of your frequency inverter. It also provides a wireless Bluetooth interface to a smartphone with IOS or Android OS. | | FI-OPTISTICK |  |
| This PC connection kit creates a direct connection from the PC USB port to the drive RJ45 communication connection for use with Invertek OptiTools Studio software. | | FI-OPT-CON-USB |  |

## General information

Control switches and potentiometers control EC fans, AC fan speed controllers or damper actuators. They generate an analogue control signal, e.g. 0-10 VDC, 0-20 mA or 0-100 % PWM. Control switches divide the analogue control signal into steps. The potentiometers generate an infinitely variable control signal. We also offer control switches for 3-speed AC fans with a single-phase motor.

### Bathroom exhaust fan timer

| Short description | Article code | Product pictures |
|---|---|---|
| Delayed off timer to control AC fans and lights simultaneously in toilets or bathrooms. The fan is switched off after a set time when the lighting is switched off.. | VTR-1-V2 |  |

## 3-step control switch for single phase motors

| Short description | Maximum load | Article code | Product pictures |
|---|---|---|---|
| Control switch without OFF-position for 3-speed AC fans. It transfers the supplied 230 VAC to one of the three terminal blocks. This makes it possible to adjust fan speed in 3 steps. The contacts ratings are 10 A (resistive loads) or 3 A (inductive loads). The enclosure allows for inset mounting (IP44) or surface mounting (IP54). | 3 A | SMT-1-30-3B |  |
| Control switch for 3-speed fans. It has an OFF position. It transfers the supplied 230 VAC to one of the three terminal blocks. This makes it possible to adjust the fan speed in 3 steps. The contacts ratings are 10 A (resistive loads) or 3 A (inductive loads). The enclosure allows for inset mounting (IP44) or surface mounting (IP54). | | SMT-1-30-4C |  |
| 3-speed ceiling fan switch with OFF position. This capacitor regulator controls single-phase motors with a maximum current of 1 A or a maximum power of 150 W. The supply voltage is 230 VAC. The enclosure allows for inset mounting (IP44) or surface mounting (IP54). | 1 A | ECA-1-10-AC | |

## 3-step control switch for EC motors or damper actuators

| Short description | Output | Article code | Product pictures |
|---|---|---|---|
| 3-step control switch for EC fans or damper actuators. It can also remotely control AC fan speed controllers or frequency inverters. The supply voltage is 10 VDC. The output signal of positions 1 and 2 can be adjusted in the range of 1 – 10 VDC via internal trimmers. The output signal of position 3 always equals the supplied voltage: 10 VDC. There is no OFF-position. The splash-proof enclosure allows for inset mounting (IP44) or surface mounting (IP54). | 1—10 VDC, 1—10 VDC, 10 VDC | SMT-D-3P-AL |  |
| 3-step control switch with OFF-position for EC fans or damper actuators. It can also remotely control AC fan speed controllers or frequency inverters. The supply voltage is 10 VDC. In the OFF-position or position 0, the output signal is 0 VDC. The output signal of positions 1 and 2 can be adjusted in the range of 1 – 10 VDC via internal trimmers. The output signal of position 3 always equals the supplied voltage: 10 VDC. The splash-proof enclosure allows for inset mounting (IP44) or surface mounting (IP54). | 0, 1—10 VDC, 1—10 VDC, 10 VDC | SMT-D-4P-AL |  |
| 3-step control switch with OFF-position for EC fans or damper actuators. It can also remotely control AC fan speed controllers or frequency inverters. The supply voltage is 10 VDC. In the OFF-position or position 0, the output signal is 0 VDC. The output signal at position 1 can be adjusted in the range of 3 - 7 VDC, at position 2 in the range of 5 - 9 VDC via internal trimmers. The output signal of position 3 always equals the supplied voltage: 10 VDC. The splash-proof enclosure allows for inset mounting (IP44) or surface mounting (IP54). | 0, 3—7 VDC, 5—9 VDC, 10 VDC | SMT-D-4P-EM | |

## Potentiometers for stepless EC fan speed control

| Short description | Off position | Modbus RTU | Dry contact | Output(s) | Article code | Product pictures |
|---|---|---|---|---|---|---|
| Potentiometer to control EC fans or damper actuators. It can also remotely control AC fan speed controllers or frequency inverters. The supply voltage must be in the range of 5—24 VDC. | ✓ | ✗ | ✗ | 0—100% Us / 0—20 mA / PWM | SDP-E0US-AT |  |
| | ✗ | ✗ | ✗ | | SDP-E0US-BT | |
| | ✗ | | ✓ | | SDP-E0US-DC | |
| Potentiometers with Modbus RTU communication to control fan speed or dampers in ventilation systems. The required supply voltage is 24 VDC. | ✗ | ✓ | ✗ | 0—10 VDC / 0—20 mA / PWM | SDP-M010-AT | |
| | ✓ | | ✗ | | SDP-M010-BT | |
| | ✗ | | ✓ | | SDP-M010-DC | |
| Potentiometers to control EC fans or damper actuators. The required supply voltage is in the range of 3—15 VDC. | ✓ | ✗ | ✗ | 10—100 % Vin | MTP-D010-AT |  |
| | ✗ | | ✗ | | MTP-D010-BT | |
| | | | ✓ | | MTP-D010-DC | |
| | ✓ | | ✗ | 0—10 VDC | MTP-G010-AT | |
| Potentiometers with Modbus RTU communication to control fan speed or dampers in ventilation systems. The required supply voltage is 230 VAC. | ✓ | ✓ | ✗ | 0—10 VDC / 0—20 mA / PWM | SPV-8-010-PM |  |
| | | | ✓ | | SPV-8-010-CP | |
| Controllers with Modbus RTU communication for water air coolers or hot water air heaters with EC fans. They are used for cooling and heating. The temperature setpoint can be steplessly adjusted via the potentiometer. Fan speed can be manually selected via the rotary switch with 7 positions (Automatic, 5 manual steps and OFF). | ✓ | ✓ | ✗ | 0—6 VDC / 0—10 VDC | ECH-8-DM |  |
| Controller and monitoring device for Modbus RTU fans with DCI interface (EBM-Papst protocol). Modbus RTU/ DCI interface (DCI Gen. 1) is used to configure, control and monitor up to 20 fans. Fans featuring the EBM-Papst Modbus/DCI interface are addressed automatically. | ✓ | ✓ | ✗ | Modbus/DCI | SPVL8-010-EP |  |
| 230 VAC potentiometers to manually control EC fans or AC fan speed controllers. | ✗ | ✗ | ✗ | 1—10 VDC | MTV-1-010-NA |  |
| 230 VAC potentiometer with LED indication to control EC fans or AC fan speed controller | ✓ | ✗ | ✗ | 0—10 VDC | LTV-1-010-NA |  |
| 230 VAC potentiometer to control EC fans, AC fan speed controllers or damper actuators. | ✗ | ✗ | ✓ | 1—10 VDC / 2—20 mA / 10-100 % PWM | MTV-1-010-CP |  |
| | ✓ | | ✗ | | MTV-1-010-PM | |
| EC fan potentiometer intended for the US market. It controls EC fans, AC fan speed controllers or damper actuators. | ✓ | ✗ | ✗ | 0—10 VDC / 0—20 mA / PWM | USV-8-010-PA |  |
| 10 KOhm potentiometer to control fan speed or dampers in ventilation systems. | ✓ | ✗ | ✓ | 0—10 kΩ / 0— Vin | SDP-X10K-NA |  |
| | ✓ | ✗ | ✓ | 0—10 kΩ / 0—Vin | MTP-X10K-NA |  |
| | ✓ | ✗ | ✓ | 0—10 kΩ / 0—Vin | USP-X10K-NA |  |
| Electronic circuit board with a 10 kΩ trimmer to set EC fan speed. | ✗ | ✗ | ✗ | 0—10 kΩ / 0—Vin | PTV-X05.0 |  |
| | | | | | PTV-X10.0 | |

## General information

Power supplies for HVAC controllers and HVAC sensors. 24 VDC, 12 VAC or 24 VAC are commonly used supply voltages in the HVAC industry. Switching power supplies are highly efficient and can handle a wide input voltage range. They generate a stable 24 VDC supply voltage. Their overload protection increases the safety of your electrical installation. The safety transformers are basic linear power supplies for 12 VAC or 24 VAC.

**Switch mode power supplies - 24 VDC**

| Short description | IP65 | IP20 | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|---|---|
| Power supply with terminal blocks and a RJ45 socket in a IP65 enclosure for surface mounting. | ✓ | ✗ | 40 W (1,67 A @ 24 VDC) | SEPS8-24-40 |  |
| Power supply with terminal blocks and a RJ45 socket in a IP20 enclosure for DIN rail mounting. | ✗ | ✓ | 40 W (1,67 A @ 24 VDC) | DRPS8-24-40 |  |
| Power supply with terminal blocks in a IP20 enclosure for DIN rail mounting. | ✗ | ✓ | 36 W (1,5 A @ 24 VDC) | DHDR8-24/36 |  |

| Safety transformers - 12 / 24 VAC | | | | | |
|---|---|---|---|---|---|
| **Short description** | **IP30** | **IP20** | **Output** | **Article code** | **Product pictures** |
| This is a single-phase safety transformer for DIN rail mounting. It provides safe electrical isolation between the input and output voltage. It is short-circuit and overload protected with a built-in PTC in the primary winding. The primary voltage is 230 VAC. | ✓ | ✗ | 12 VAC / 25 VA | SATD1-12-25 |  |
| | | | 12 VAC / 40 VA | SATD1-12-40 | |
| | | | 12 VAC / 63 VA | SATD1-12-63 | |
| | | | 24 VAC / 25 VA | SATD1-24-25 | |
| | | | 24 VAC / 40 VA | SATD1-24-40 | |
| | | | 24 VAC / 63 VA | SATD1-24-63 | |

## General information

Controllers for electric heating elements up to 15 kW. Electric heating elements convert electricity into warm air. This warm air can be used to heat a room or a building. Time-proportional control - TRIAC technology - is used to control the heating element.

**Electric heating element controllers**

| Short description | Input voltage | Maximum load | Article code | Product pictures |
|---|---|---|---|---|
| This is a controller for electric heating elements. It controls single-phase 230 VAC or two-phase 400 VAC electric heating elements. An optional PT500 temperature probe can be connected to measure the ambient temperature. | 1x 110—240 VAC<br>2x 400—415 VAC | 3,2 kW (230 VAC)<br>6 kW (400 VAC) | AH2C1-6 |  |
| | | | AH2C1-6-500 |  |
| This is a slave device to control electric heating elements. It must be connected to a master unit - AH2C1 series. | 1x 110—240 VAC<br>2x 400—415 VAC | 3,2 kW (230 VAC)<br>6 kW (400 VAC) | AH2A1-6 |  |
| This is a controller for electric heating elements. It controls three-phase 400 VAC electric heating elements. | 3x 380—440 VAC | 15 kW (22 A @ 3x 400 VAC) | EH3C4-15 |  |
| This is a slave device to control electric heating elements. It must be connected to a master unit - EH3C4-15 series. | 3x 380—440 VAC | | EH3A4-15 |  |

## General information

Sentera products can be monitored or configured via Modbus RTU communication. Sentera configuration software is included in the 3SMCenter software suite - download is available on our website. We advise using the CNVT-USB-RS485 converter to connect Sentera products to your computer. In case no computer is available, the SENSISTANT configurator can be used to monitor or configure Sentera products.

**Configuration tools**

| Short description | Article code | Product pictures |
|---|---|---|
| This set contains a self-powered USB to Modbus RTU converter and an USB-A to USB-A cable (length 0,5 m). | CNVT-USB-RS485-SET |  |
| This is a self-powered USB to Modbus RTU converter. It connects to a computer USB port via a USB-A cable with male connectors at both sides (not included). | CNVT-USB-RS485-V2 |  |
| Configuration tool for Sentera Modbus RTU devices. | SENSISTANT-1.0 |  |
| This set contains the Sensistant configuration tool for Sentera Modbus RTU devices, a power supply and cables to configure -F or -G products. | SENSISTANT-SET-F | |
| This set contains the Sensistant configuration tool for Sentera Modbus RTU devices, a power supply and cables to configure -M products | SENSISTANT-SET-M | |

## General information

These alarm modules generate visual (and audible) alarms. They indicate failures or alerts coming from installations in less accessible places. They show and tell whethe your ventilation system is still working properly or not.

**Alarm and monitoring tools**

| Short description | IP65 | IP30 | Buzzer | Article code | Product pictures |
|---|---|---|---|---|---|
| This HVAC alarm signalling unit generates visual and audible alarms. It indicates failures or alerts coming from installations in less accessible places. | ✓ | ✕ | ✕ | ALR -M1 |  |
| Flush or surface mount alarm units that can generate visual notifications via the green, yellow or red LED. Typically, they are used to indicate the status of fans, installed in less accessible places. Some versions also have a buzzer to generate audible alerts. The units are controlled via Modbus RTU communication. The enclosure allows for surface mounting or flush mounting. It offers an IP30 protection against ingress of dust. | ✕ | ✓ | ✕ | ALFCF |  |
| | ✕ | ✓ | ✕ | ALFCG | |
| | ✕ | ✓ | ✕ | ALFC8 | |
| | ✕ | ✓ | ✓ | ALFBF | |
| | ✕ | ✓ | ✓ | ALFBG | |
| | ✕ | ✓ | ✓ | ALFB8 | |

| Supply voltages | |
|---|---|
| F | 24 VDC (4-wire connection) |
| G | 24 VAC / 24 VDC (3-wire connection) |
| M | PoM (24 VDC via RJ45 connector) |
| 8 | 85—264 VAC |

## General information

These converters are a gateway between the Sentera Modbus RTU network and analogue (0-10 Volt) or logical control signals. They make it possible to integrate external devices in a Sentera control solution. They convert Modbus RTU communication to digital or analogue inputs / outputs.

**Converters**

| Short description | IP20 | IP65 | Article code | Product pictures |
|---|---|---|---|---|
| Relay output module for Modbus networks. It has 2 C/O relays with a normally open and normally closed contact. The relay status can be controlled via Modbus RTU. Each relay has a switching capacity of 5 A (resistive) at a voltage of 220 VDC / 250 VAC. The DIN rail enclosure. | ✓ | ✗ | DRM-M-02 |  |
| Relay output module for Modbus networks. It has 4 C/O relays with a normally open and normally closed contact. The relay status can be controlled via Modbus RTU. Each relay has a switching capacity of 5 A (resistive) at a voltage of 220 VDC / 250 VAC. The DIN rail enclosure | ✓ | ✗ | DRM-M-04 |  |
| Input-Output module for Modbus RTU networks. It has 4 digital inputs and 4 digital outputs. The digital outputs are activated via a Modbus RTU register. The status of the digital inputs is transferred into Modbus RTU registers. The supply voltage is 24 VDC PoM. This means that both Modbus RTU communication and the supply voltage can be connected via the RJ45 socket. The DIN rail enclosure offers an IP20 protection degree against ingress of dust and moisture. | ✓ | ✗ | DIO-M-D4 |  |
| Input-Output module for Modbus RTU networks. It has 4 digital inputs and 2 relay outputs. The relay outputs are activated via a Modbus RTU register. The status of the digital inputs is transferred into Modbus RTU registers. The supply voltage is 24 VDC PoM. This means that both Modbus RTU communication and the supply voltage can be connected via the RJ45 socket. The DIN rail enclosure offers an IP20 protection degree against ingress of dust and moisture. | ✓ | ✗ | DIO-M-R2 |  |
| Modbus RTU output module with 3 analogue outputs. They convert the value of a Modbus Holding Register into an analogue output signal. The default output type is 0-10 VDC. If necessary, a different output type can be selected: 0—10 VDC / 0—20 mA / 0-100 % PWM. The supply voltage is 24 VDC PoM. This means that both Modbus RTU communication and the power supply can be connected via one RJ45 connector. This module needs a master unit, such as the Sentera DRPU, BMS system or another Modbus master module that is able to write a value in the DDACM Modbus Holding registers. | ✓ | ✗ | DDACM-03 |  |
| Modbus RTU output module with 3 analogue outputs. These outputs are galvanically separated from the Modbus RTU communication (input). They convert the value of a Modbus Holding Register into an analogue output signal. The default output type is 0-10 VDC. If necessary, a different output type can be selected: 0—10 VDC / 0—20 mA / 0-100 % PWM. The supply voltage is 24 VDC PoM. This means that both Modbus RTU communication and the power supply can be connected via one RJ45 connector. This module needs a master unit, such as the Sentera DRPU, BMS system or another Modbus master module that is able to write a value in the DDACM Modbus Holding registers. | | | DDACM-I3 |  |
| This Modbus RTU I/O module has 8 analogue inputs. The input type can be adjusted via Modbus RTU. 4 of these inputs can be set to the type: 0-10 VDC / 0-20 mA / 0-100% PWM. The 4 other inputs can be set to the type: 0-10 VDC / 0-20 mA. The analogue input signals are transferred into Modbus RTU Input registers. The power supply is 24 VDC PoM. This means that both power supply and Modbus RTU communication are connected via the RJ45 socket. This module can be DIN rail mounted in an electrical cabinet. | ✓ | ✗ | DADCM-08 |  |
| Modbus RTU I/O module has 4 temperature probe inputs and 4 analogue inputs. The incoming signals of the temperature probes and the analogue inputs are transferred into Modbus RTU Input registers. The power supply is 24 VDC PoM. This means that both power supply and Modbus RTU communication are connected via the RJ45 socket. PT500 or PT1000 temperature probes can be connected via the 4 temperature inputs. The type of the 4 analogue inputs can be selected via Modbus RTU: 0-10 VDC / 0-20 mA / 0-100% PWM. The default input type for the 4 analogue inputs is 0-10 VDC. This module can be DIN rail mounted in an electrical cabinet. | ✓ | ✗ | DADCM-44 | |
| Modbus RTU output module with 1 analogue output. It converts the value of a Modbus Holding Register into an analogue output signal. The default output type is 0-10 VDC. If necessary, a different output type can be selected: 0—10 VDC / 0—20 mA / 0-100 % PWM. The supply voltage is 24 VDC. Modbus RTU communication and the power supply can be connected via the RJ45 socket or via the terminal block. This module needs a master unit, such as the Sentera DRPU, BMS system or another Modbus master module that is able to write a value in its Modbus Holding registers. It can be wall-mounted. The enclosure offers an IP65 protection against ingress of dirt and water. | ✗ | ✓ | MDACM1 |  |

## General information

Modbus RTU and power distribution boxes simplify wiring. They distribute Modbus RTU communication and 24 VDC power supply. All devices are connected via RJ45 connectors to minimise wiring errors. For larger networks, repeaters can be used to reinforce the communication and to make longer network cables possible.

**Adapters, distribution boxes and Power supplies with repeaters for Modbus RTU**

| Short description | IP20 | IP30 | IP65 | Article code | Product pictures |
|---|---|---|---|---|---|
| RJ45 to terminal block adapter for Modbus RTU networks. This adapter is useful to add Sentera products with a terminal block to a Modbus RTU network using RJ45 connectors. It simplifies wiring and guarantees reliable contacts. | ✗ | ✓ | ✗ | ADPT-1RJ-TB |  |
| Terminal block to RJ45 adapter for Modbus RTU networks. The terminal block is connected to 3 RJ45 sockets. This adapter distributes 24 Volt supply voltage and Modbus RTU communication. It helps to minimise branches in the Modbus RTU network lines. This adapter is useful to add Sentera products with a terminal block to a Modbus RTU network using RJ45 connectors. It simplifies wiring and guarantees reliable contacts. | ✗ | ✓ | ✗ | ADPT-3RJ-TB |  |
| Modbus RTU distribution box with six RJ45 sockets. It distributes Modbus RTU communication and 24 VDC power supply between the connected devices. It is used to interconnect Sentera devices. Via the Sentera PoM connection, both Modbus RTU communication and 24 VDC power supply are distributed via a single UTP cable through a RJ45 connector. These six RJ45 sockets are internally connected (parallel connection). The plastic enclosure offers an IP65 protection against ingress of dust and water. It can be wall mounted. | ✗ | ✗ | ✓ | MDB-M-6 |  |
| Distribution box for Modbus RTU communication and supply voltage. It can be used to interconnect Sentera devices. It has 10 channels for 24 VDC powered devices and 12 channels for 3,3 VDC powered devices. Modbus RTU communication and 24 VDC supply voltage is transmitted via the RJ45 sockets. Modbus RTU communication and 3,3 VDC supply voltage is transmitted via the RJ12 sockets. An external power supply is required. The maximum distributed current is 1,5 A (combined maximum current consumption of the connected 3,3 VDC and 24 VDC devices). The enclosure offers an IP20 protection against ingress of dust. It can be installed on a DIN rail, preferably in an electrical cabinet. The DLDBM22 version converts 24 VDC on the RJ45 sockets to 3,3 VDC on the RJ12 sockets. | ✓ | ✗ | ✗ | DMDBM22 |  |
| | ✓ | ✗ | ✗ | DLDBM22 | |
| DIN rail mounted power supply with built-in Modbus RTU repeater. The 24 VDC switch mode power supply offers protection against short ciruit, overload and overvoltage. The maximum load is 900 mA or 20 W. The 24 VDC supply is only available via the output channel. All devices can be connected via terminal blocks or via the RJ45 connectors. The Modbus RTU communication of both channels is reinforced by the built-in half-duplex line repeater. The supply voltage is in the range of 85 to 264 VAC (50-60 Hz). This device can be mounted on a DIN rail. The enclosure offers an IP20 protection against ingress of dust. | ✓ | ✗ | ✗ | DPOM8-24-20 |  |
| 24 VDC power supply with built-in Modbus RTU repeater. The switching power supply offers protection against short ciruit, overload and overvoltage. The maximum load is 900 mA or 20 W. Both 24 VDC channels are galvanically separated. The load can be connected via PoM - both 24 VDC and Modbus RTU communication are connected via a RJ45 connector. The Modbus RTU communication of both channels is reinforced by the built-in half-duplex line repeater. The supply voltage is in the range of 85 to 264 VAC (50-60 Hz). The enclosure can be surface mounted and offers an IP30 protection against ingress of dust. | ✗ | ✓ | ✗ | PDM-8-MB |  |

## General information

Internet gateways facilitate the set-up of your Sentera network. They allow you to connect your HVAC sensors to SenteraWeb and monitor or control them remotely. You can log data and receive alarms. Define different users and create your personal dashboard. IoT for Sentera products!

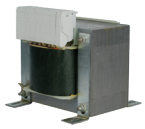
**Sentera internet gateways**

| Short description | IP20 | IP54 | Article code | Product pictures |
|---|---|---|---|---|
| DIN-rail gateway to connect Sentera devices to SenteraWeb - the online HVAC platform. It can be connected via an Ethernet cable or via a Wi-Fi network. The supply voltage is 24 VDC PoM. | ✓ | ✗ | DIG-M-2 |  |
| Gateway to connect Sentera devices to SenteraWeb - the online HVAC platform. It can be connected via an Ethernet cable or via a Wi-Fi network. The supply voltage is 24 VDC PoM. | ✗ | ✓ | SIG-M-2 |  |
| DIN-rail gateway to connect Sentera devices to SenteraWeb - the online HVAC platform. It can be connected via a Wi-Fi network. The supply voltage is 24 VDC PoM. | ✓ | ✗ | DIGWM |  |
| Gateway to connect Sentera devices to SenteraWeb - the online HVAC platform. It can be connected via a Wi-Fi network. The supply voltage is 24 VDC PoM | ✗ | ✓ | SIGWM |  |

## General information

Autotransformers are electrical transformers with a single coil. Via their different voltage taps, reduced voltages are available. The single winding of an autotransformer acts both as primary and secondary winding. This results in a smaller and lighter construction compared to classical dual-winding transformers. Autotransformers are integrated in Sentera transformer fan speed controllers. You can also use them as a separate component into applications that require a voltage reduction. Sentera has its own production line for autotransformers to guarantee optimal quality.

**230 VAC autotransformers**

| Short description | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|
| High quality 230 V autotransformer with compact design. The robust mounting brackets simplify switchboard mounting. It is resin encapsulated to minimise the noise and to protect it against corrosion. | 1,5 A | ATR-1-15L25 |  |
| | 2,5 A | ATR-1-25L25 | |
| | 3,5 A | ATR-1-35L25 | |
| | 5 A | ATR-1-50L25 | |
| | 7,5 A | ATR-1-75L25 | |
| | 10 A | ATR-1100L25 | |
| | 13 A | ATR-1130L25 | |
| | 16 A | ATR-1160L25 | |
| | 20 A | ATR-1200L25 | |

## 400 VAC autotransformers

| Short description | Maximum load [A] | Article code | Product pictures |
|---|---|---|---|
| High quality 400 V autotransformer with compact design. The robust mounting brackets simplify switchboard mounting. It is resin encapsulated to minimise the noise and to protect it against corrosion. | 1,5 A | ATR-4-15L50 |  |
| | 2,5 A | ATR-4-25L50 | |
| | 4 A | ATR-4-40L50 | |
| | 6 A | ATR-4-60L50 | |
| | 8 A | ATR-4-80L50 | |
| | 11 A | ATR-4110L50 | |
| | 14 A | ATR-4140L50 | |

## General information

Switch disconnectors are typically used as motor maintenance or repair switches. They can also act as enclosed main switches for individual electrical loads. Padlocks can be connected in the OFF position. This provides a vital safety function: the no-voltage state is visible and it is impossible to switch on. Direct switching of motor currents is possible.

**Maintenance and safety switches**

| Protection degree | Operational current | Operational power 400 VAC | Poles | Extra NO contacts | Extra NC contacts | Article code | Product picture |
|---|---|---|---|---|---|---|---|
| IP65 | 20 A | 2,2 kW | 2 | – | – | EME5-20-2100 |  |
| | 20 A | 3 kW | 2 | 1 | 1 | EME5-20-2111 | |
| | 20 A | 3,7 kW | 4 | – | – | EME5-20-4100 | |
| | 20 A | 5,5 kW | 4 | 1 | 1 | EME5-20-4111 | |
| | 40 A | 15 kW | 4 | 1 | 1 | EME5-40-4111 | |
| | 63 A | 30 kW | 4 | 1 | 1 | EME5-63-4111 | |

## General information

Actuator-powered dampers or motorised dampers offer accurate control possibilities for the fresh air supply in each room separately. The damper positions can be controlled manually, demand-based or via a BMS system. These dampers are available with a built-in HVAC sensor and automatically control the fresh air supply. Their damper blades are positioned automatically based on the measured temperature, humidity, CO2 or TVOC value.

**Circular motorised dampers**

| Short description | Diameter | Article code | Product pictures |
|---|---|---|---|
| Circular damper with built-in actuator for ducts with 125 mm diameter. The damper blade position can be set via a 0-10 V signal or via Modbus RTU communication. The minimum and maximum position can be adjusted via Modbus RTU communication. | 125 mm | ACT-H-125 |  |
| | 160 mm | ACT-H-160 | |
| Circular motorised damper with built-in differential pressure controller. Fits into standard air ducts with a diameter of 125 mm. The damper blade position is automatically adjusted to maintain differential pressure, air volume flow or air velocity constant at the desired setpoint. The setpoint, minimum and maximum damper blade position and all other settings can be adjusted via Modbus RTU communication. The damper blade offers a class 4 airtightness (EN1751). The airtightness of the enclosure is class D (EN1751). It can control air flows with a velocity between 0 to 10 m/s. The supply voltage is 24 VDC, PoM. | 125 mm | ACDPH-125 |  |
| | 160 mm | ACDPH-160 | |

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