S330/S331

.SUTO
Be smart. **Measure it.**

Display and Data Logger

Compact Version

S331
Display and Data Logger

Flex Version

S330	Display
S331	Display & Data Logger

IIoT

IIOT SUPPORT
Connection to S4M software

TOUCH SCREEN
5" large color LCD

WEB SERVER
Access from world wide

4G

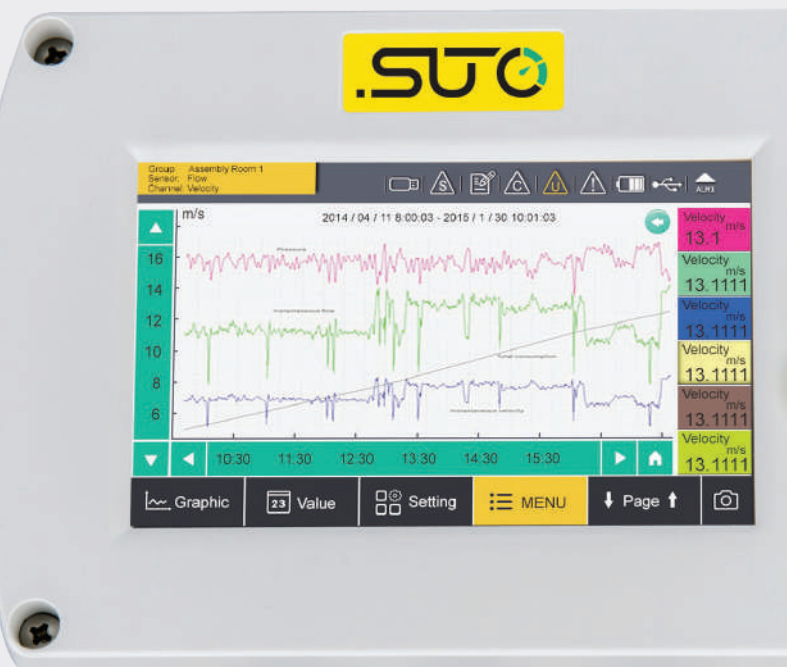**REMOTE CONNECTION**
4G Modem optional

VERSATILE CONNECTION
Up to 16 sensors inputs

TIGHT PROTECTION
IP65
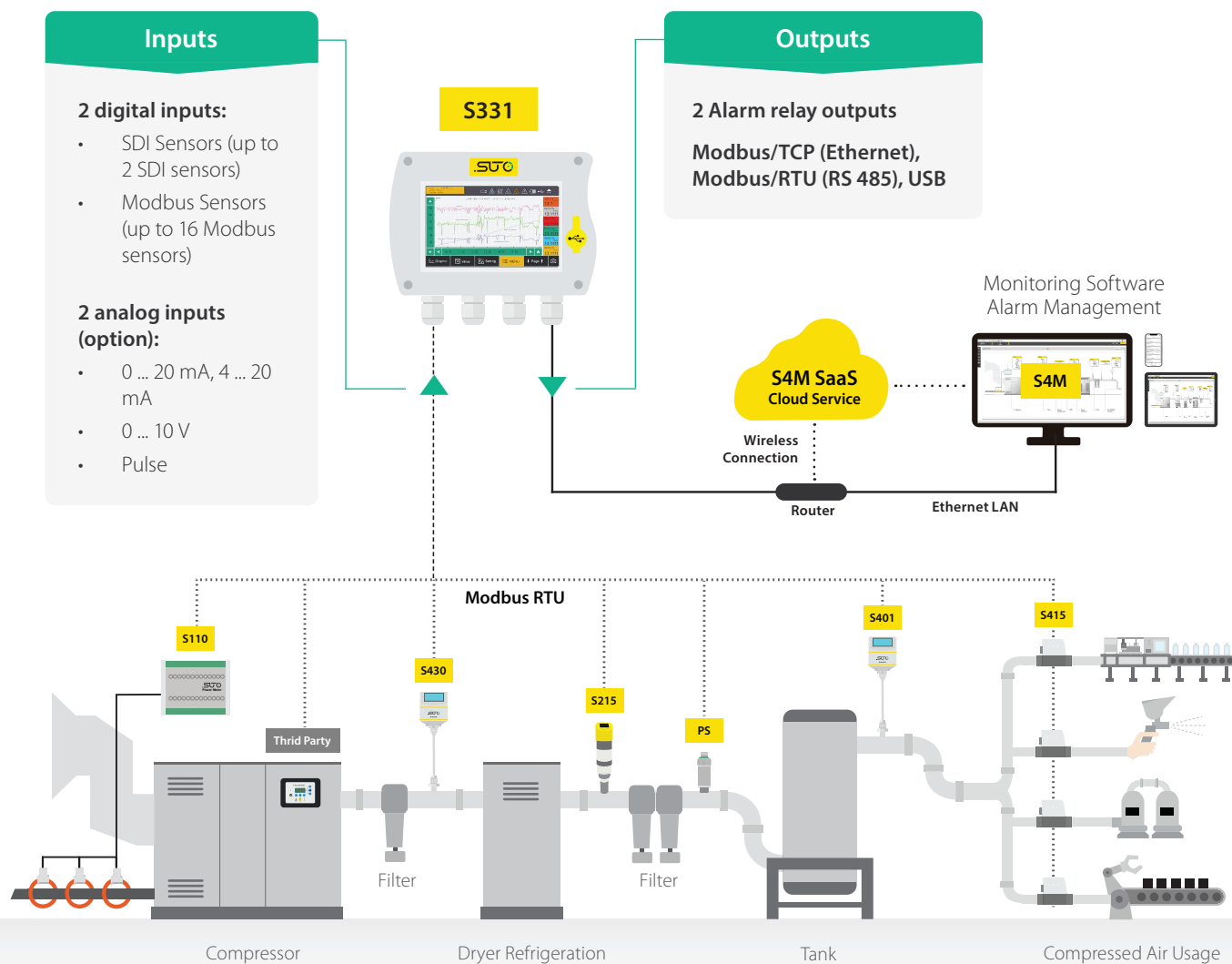
DATA LOGGER
100 million values

Benefits

- ✅ Central unit of a compressed air monitoring system, collecting, recording and visualizing all measurement data
- ✅ High-resolution 5" color touch screen for easy operation and on-site data visualization
- ✅ Connect up to 16 Modbus/RTU sensors, 2 analog sensors and 2 SDI sensors to a single data logger
- ✅ Modbus/RTU and Modbus/TCP output for a seamless integration into existing monitoring and building management systems
- ✅ Alarm monitoring for all measurement channels with on-screen indication and 2 relay outputs

Plug and Play Data Logging – Process Visualization and Analysis

The S330/S331 Display and Data Logger provides an universal solution for displaying and recording all relevant parameter of a compressed air system, which includes flow, dew point, pressure, temperature, power consumption, compressor status, and so on.

The devices offer a powerful yet cost efficient data logger and display solution for optimal and reliable management and monitoring of your compressed air system.

Inputs

2 digital inputs:
- SDI Sensors (up to 2 SDI sensors)
- Modbus Sensors (up to 16 Modbus sensors)

2 analog inputs (option):
- 0 ... 20 mA, 4 ... 20 mA
- 0 ... 10 V
- Pulse

S331

Outputs

2 Alarm relay outputs

Modbus/TCP (Ethernet), Modbus/RTU (RS 485), USB

Monitoring Software
Alarm Management

S4M SaaS Cloud Service

S4M

Wireless Connection

Router   Ethernet LAN

Modbus RTU

S110   S430   S215   PS   S401   S415

Thrid Party

Compressor   Dryer Refrigeration   Filter   Tank   Compressed Air Usage

Remote Connection

By connecting a 4G/LTE modem to the designated M12 port, S330 / S331 can be monitored remotely through S4A software.

The S331 Display and Data Logger is used to gather and collect measurement data of various field devices. It acts as the central unit where all measurement data is safely stored and visualized. The digital communication outputs are not making it a display and data logger, but also a gateway to connect to IIoT services, as well as to connect it to modern software solutions
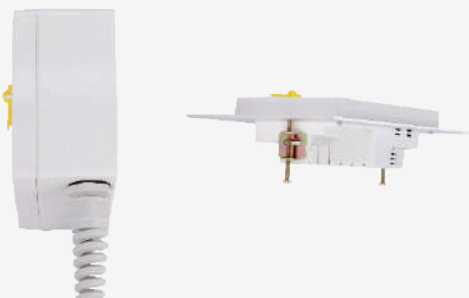
Compact Version

92mm · 173 mm · 120 mm · 145 mm

Flex Version

306 mm · 139 mm · 200 mm · 225 mm

Supply and Glands

- 10 W sensor supply
- 4 cable glands
- 5" high-resolution graphic display

Installation Options

The S330 / S331 Compact Version comes in a compact design which can be panel mounted or ordered with a wall casing.

Supply and Glands

- 50 W sensor supply
- 8 cable glands
- 5" high-resolution graphic display

Installation Options

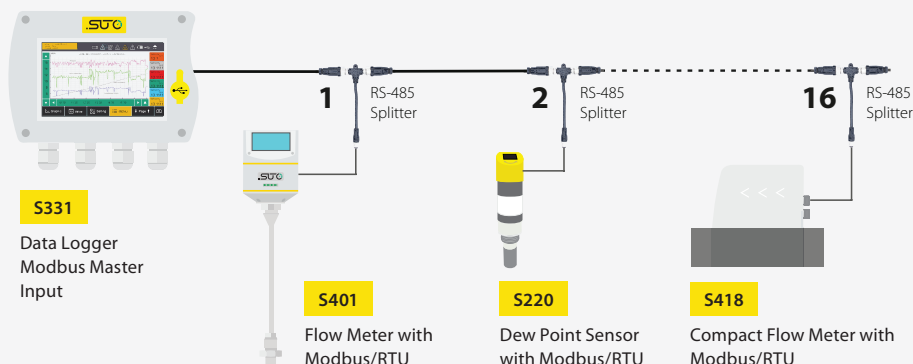The S330 / S331 Flex Version comes in a rugged wall casing and offers a bigger power supply to the sensors.

Connecting All Compressed Air Devices

SUTO Modbus/RTU Sensor Input

1

The S330 / S331 includes digital inputs for SUTO SDI sensors and Modbus/RTU sensors. To connect the Modbus/RTU sensors properly on an RS 485 bus system, it's recommended to daisy-chain the sensors to one of the inputs. For this purpose, SUTO offers a RS 485 splitter to simplify the connection.

Through this method, users can add up to 16 sensors to the master input, making it most versatile and allowing to monitor whole plants with a single data logger. (Additional power supplies for field devices might be necessary)
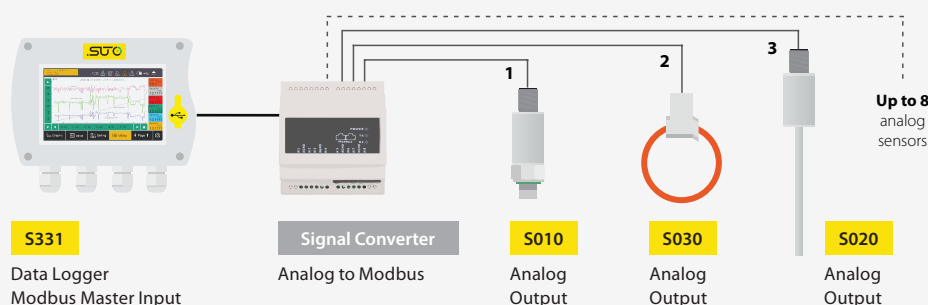
1 RS-485 Splitter   **2** RS-485 Splitter   **16** RS-485 Splitter

S331
Data Logger
Modbus Master
Input

S401
Flow Meter with
Modbus/RTU

S220
Dew Point Sensor
with Modbus/RTU

S418
Compact Flow Meter with
Modbus/RTU

Analog Sensor Input

2

The S330 / S331 can be equipped with an analog input option, allowing to connect 0/4... 20 mA, 0...10 V and pulse signals from field sensors. If more analog sensors need to be connected, a Analog-Modbus/RTU converter module can be easily connected, allowing to connect additionally 8 analog sensors.

This makes the S330 / S331 most versatile and offers the possibility to connect existing field hardware and sensors seamlessly into the monitoring system.
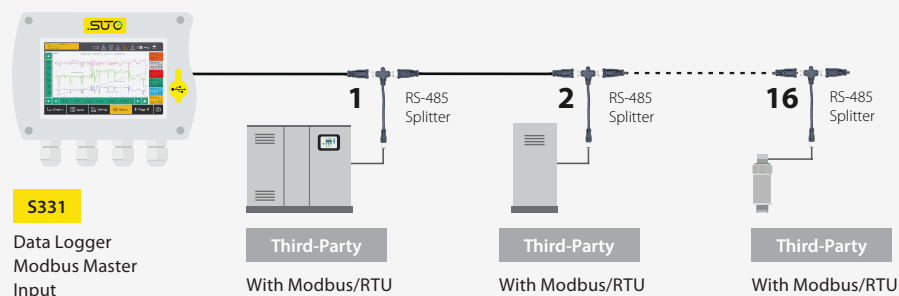
1   **2**   **3**   **Up to 8** analog sensors

S331
Data Logger
Modbus Master Input

Signal Converter
Analog to Modbus

S010
Analog
Output

S030
Analog
Output

S020
Analog
Output

Third-Party Sensor and Field Device Support

3

By relying on the industry standard protocol Modbus/RTU, the S330 / S331 does support third-party sensors to be easily integrated into the monitoring system. Field devices can be easily set up using the configuration software, allowing to add third-party sensor within seconds.

Of course, all connected sensor data can be logged to the internal memory, used for virtual channel calculations and real-time values are forwarded to connected software and monitoring solutions.
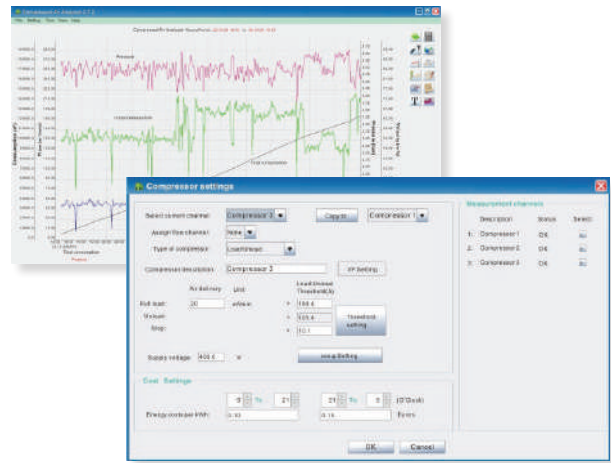
1 RS-485 Splitter   **2** RS-485 Splitter   **16** RS-485 Splitter

S331
Data Logger
Modbus Master
Input

Third-Party
With Modbus/RTU

Third-Party
With Modbus/RTU

Third-Party
With Modbus/RTU

Data Analysis

Through the free SUTO S4A software recordings are downloaded to the PC via USB, LAN or wirelessly using the LTE/4G Modem. The basic analysis can be done in S4A.

For more sophisticated compressor analysis, the SUTO CAA software (incl. in S551) offers many advanced features such as:

- Performance statistics of compressors (efficiency, air delivery, load/unload cycles)
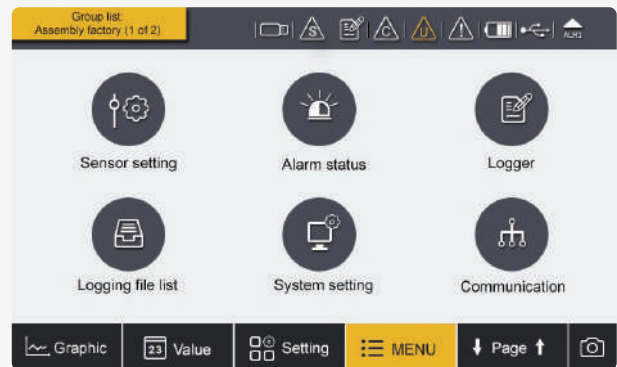- Leakage analysis
- Report generation and more...

Comparisons with baseline measurements from last year or last month help to identify system changes.

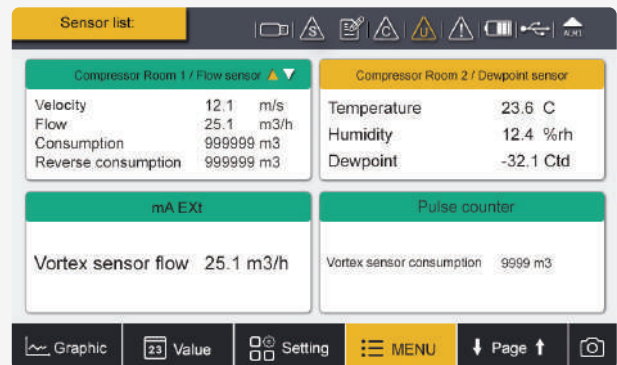# On-Site Configuration and Data

User Friendly Handling

The S330 / S331 comes with a high resolution 5" color touch screen interface making the operation as simple as possible.

Sensor Data Overview

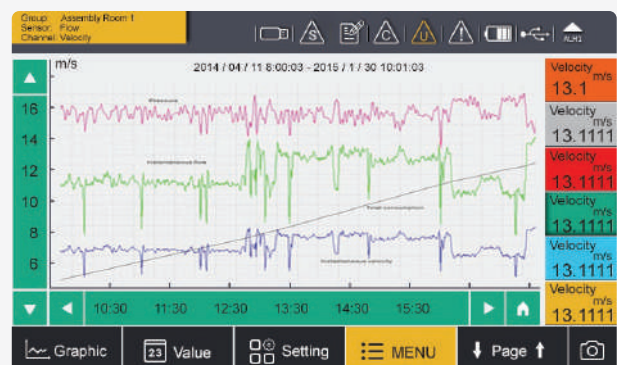Up to 4 sensors can be viewed on one page and through page scrolling further sensors can be displayed.

This makes it easy to monitor different sensors at the same time.

Graphic Charts for Quick Analysis

Select which channels you want to view or analyze and the built in graphic analyzer will help you identify problems immediately.

For detailed analysis we recommend using SUTO S4A software.

S330/S331 Display and Data Logger

Technical Data

Signal / Interface & Supply

Data logger

Storage	Internal, 100 million values
Sampling rate	Optional >=1s, Max 59 mm: 59 ss

Input signals

Digital input	2 x SDI sensors 16 x RS-485 Modbus RTU Sensors 2 x 0 ... 20 mA / 4 ... 20 mA / 0 ... 10V
Analog input	2 x 0/4 ... 20 mA; 2 x 0 ... 10 V; 2 x pulse
Pulse input	100 Hz maximum; 28 V, 10 mA

Output signals

Analog / Pulse output	4 ... 20 mA signal and pulse signal of sensors can be looped through the display by using the connection board
Alarm output	2 relays, 230 VAC, 3 A, NC

Field bus Interface

Protocol	Modbus/TCP (Ethernet), Modbus/RTU (RS 485)

Electrical data

Power supply	Compact version	100 ... 240 VAC, 20 VA (option, A1663) 18 ... 30 VDC, 20 W (option, A1664)
	Flex version	85 ... 305 VAC, 60 W (option, A1676) 18 ... 30 VDC, 60 W (option, A1677)
Sensor supply		24V, 10W (Compact version) 24V, 50W (Flex version)

Data interface

Connection	Modbus/TCP (Ethernet), Modbus/RTU (RS 485), USB

General data

Configuration

PC Software	S4C-Display software

Display

Integrated	Size: 5" high-resolution graphic display Resolution: 800 x 480 pixels touch screen

Material

Housing	PC + ABS (Compact version) PC (Flex version)

Miscellaneous

Electrical connection	Screw-Terminal connectors
Protection class	IP65
Approvals	CE
Housing	Panel or wall mounting
Dimensions	See dimensional drawing
Cable entry diameter	4.5 ... 8 mm
Cable	Supply: AWG 12 ... AWG 24, 0.2 ... 2.5 mm^2; Signals: AWG 16 ... AWG 28, 0.14 ... 1.5 mm^2
Weight	0.52 kg (Compact version) 2.12 kg (Flex version)

Operating conditions

Ambient temperature	0 ... +50°C
Ambient humidity	<90 %
Storage temperature	-20 ... +70°C
Transport temperature	-20 ... +60°C

S330/S331 Display and Data Logger

Ordering

Please use the following tables to assist in placing your order with our sales staff.

S330 / S331 Display and Data Logger (Compact Version)

Order No.	Description
D500 0333	S330 Display, Compact Panel Version, 2 x SDI & 16 x Modbus/RTU input, Ethernet, RS-485, USB-C, 2 Alarm relays, 10 Watt sensor supply, S4A Software
D500 0331	S331 Display and Data Logger, Compact Panel Version, 2 x SDI & 16 x Modbus/RTU input, Ethernet, RS-485, USB-C, 2 Alarm relays, 10 Watt sensor supply, S4A Software
Analog input	
A1672	No analog input
A1662	2 analog inputs 0/4 … 20 mA, 0 … 10 V + 2 pulse inputs
Power supply (must choose one option)	
A1663	Power Supply AC, Input: 100 … 240 VAC / 50/60 Hz / 20 VA, 10 Watt sensor supply
A1664	Power Supply DC, Input: 18 … 30 VDC / 20 W, 10 Watt sensor supply
Wall casing	
A1673	No wall casing, panel mount
A1665	Wall casing with 4 cable glands
A1667	Wall casing with 3 cable glands + Ethernet
A1675	Wall casing with 3 cable glands + M12 connector for 4G modem (A554 0131 + A1670)

S331 Display and Data Logger (Flex Version)

Order No.	Description
D500 0335	S331 Display and Data Logger, Flex Version with Wall Casing, 2 x SDI & 16 x Modbus/RTU input, M12-4G modem connection, Ethernet, RS-485, USB-C, 2 Alarm relays, 50 Watt sensor supply, S4A Software
Analog input	
A1672	No analog input
A1662	2 analog inputs 0/4 … 20 mA, 0 … 10 V & 2 pulse inputs
Power supply (must choose one option)	
A1676	Power supply AC, Input: 85 … 305 VAC / 50/60 Hz / 60 W, 50 Watt sensor supply
A1677	Power supply DC, Input: 18 … 30 VDC / 60 W, 50 Watt sensor supply

S330 / S331 Accessories

Order No.	Description
Cables	
A553 0104	Sensor cable 5 m with M12 connector, open ends, 5 pole, AWG 24 (0.2 mm^2)
A553 0105	Sensor cable 10 m with M12 connector, open ends, 5 pole, AWG 24 (0.2 mm^2)
A553 0165	Sensor cable, 5 pole, AWG 24 (0.2 mm2), 50 m reel
A553 0166	Sensor cable, 5 pole, AWG 24 (0.2 mm2), 100 m reel
A553 0167	RS-485 (modbus) cable, 4 pole twisted pairs with shield, AWG 24 (0.2 mm2), 50 m reel
A553 0168	RS-485 (modbus) cable, 4 pole twisted pairs with shield, AWG 24 (0.2 mm2), 100 m reel
A554 3310	M12-Splitter, for Modbus Daisy chain wiring, including 2 x M12 plug
C219 0055	M12 connector with RS-485 termination resistor (120 Ω), for Modbus daisy chain termination
A553 0161	M12 male to M8 female converter cable for M12-Splitter
A553 0106	AC Power cable with mains plug, 1.8 m
A553 0143	USB-C Cable, USB-A to USB-C, 1.5 m (one included in S330/S331)
Converters and gateways*	
A554 0011	RS-485 repeater
A554 0331	RS-485 / USB converter
4G Modem for remote connection	
A1670	USB 4G dongle, including S4A software, excl. SIM card
A554 0131	USB 4G dongle wall casing, with 2m cable and M12 connector
Software	
M599 2031	S4M Software
Others	
D554 0031	8-channel current input module, 0 … 20 mA, Modbus/RTU
A554 0007	Power supply, wall mountable, input: 85 … 264 VAC 50/60 Hz, output: 24 VDC, 15 W
A554 0009	Power supply for DIN rail, input: 85 … 264 VAC 50/60 Hz, output: 24 VDC, 60 W
A554 3311	Line filter for EMC protection

Ordering Example

Example	S331 Display and Data Logger, Flex version, No anlaog inputs, 85… 305 VAC supply
Order Code	D500 0335.A1672.A1676

* Please contact our customer service for further converter/ gateway options

www.augustindonesiajaya.com   **sales@augustindonesiajaya.com**