



# JUMO variTRON 500 – Automation System

## System overview

### Brief description

The central processing unit JUMO variTRON 500 along with the proven input and output modules (incl. controller module) form a complete system.

The central processing unit manages all configuration and parameter data of the complete system and provides a PLC acc. to IEC 61131-3 (CODESYS V3.5; as extra code). The PLC can be activated in different versions:

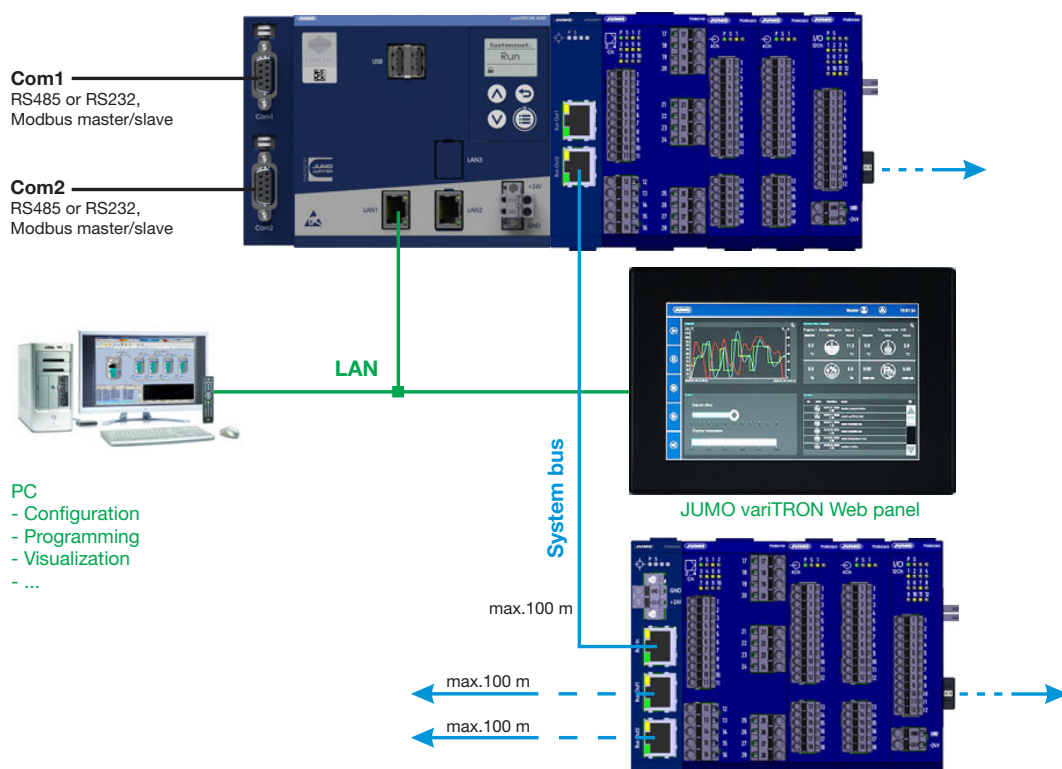
- CODESYS runtime system
- CODESYS runtime system incl. Remote TargetVisu
- CODESYS runtime system incl. WebVisu
- CODESYS runtime system incl. Remote TargetVisu and WebVisu

For visualization, commercially available panels are used which support CODESYS Remote TargetVisu or WebVisu functionality. The visualization is also possible via web browser. Visualizations have to be implemented with CODESYS resources.

A convenient setup program is used for configuration. JUMO standard functions for CODESYS are provided in libraries (as of system version x) and can be individually integrated into the customer application.

### Features

- Quick wiring of operating voltage and system bus provided by simple module connection principle
- Flexible connection technology due to removable terminal strips with Push-In technology
- Modular device and function concept
- Web panels (705070) with capacitive or resistive touch screen in different sizes
- Universal analog inputs
- Reliable, independent PID controllers with autotuning function
- Integrated PLC acc. to IEC 61 131-3 (option)



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705002

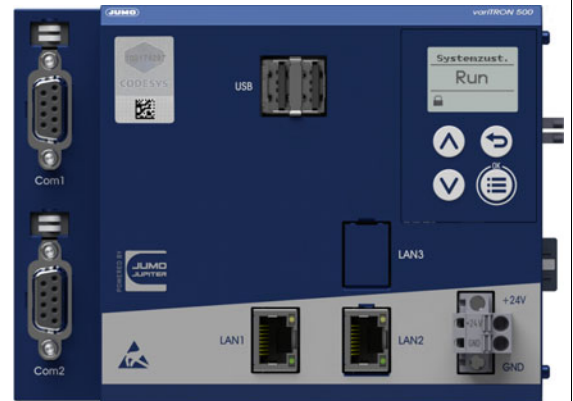
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## Central processing unit

### JUMO variTRON 500 – 705002

#### CPU

- Quad Core CPU 800 MHz
- RAM 1024 MB, battery-backed
- eMMC 8 GB (flexible allocation between system data and application data)
- Real-time clock
- Process mapping for all connected input/output modules (including controller modules)
- Display and keys to display the system status
- 2 USB host interfaces
- OPC UA server (in conjunction with PLC)
- 9 program generators (in conjunction with PLC, as of system version x)
- 2 field bus interfaces (as of system version 3)
- PROFINET IO controller (in conjunction with PLC)
- Plug and Play when replacing input/output modules
- The central processing unit operates at a voltage supply of DC 24 V and supplies the connected input/output modules and, if necessary, the router module 705041
- Dimensions (W × H × D): 135 mm × 101 mm × 101.5 mm (without connection elements)



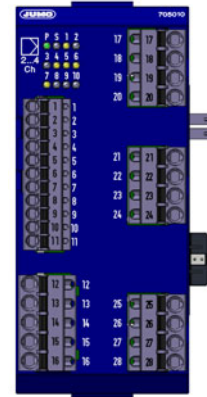
For further information: Refer to data sheet 705002

## Input/output modules

### Multichannel controller module – 705010



- 2-channel PID controller with relay output or logic output to control solid-state relays
- Up to 4 PID controller channels can be activated (cascadable)
- 2 universal analog inputs, 2 digital inputs (DC 0/24 V) and 2 digital outputs (relay or logic DC 0/15 V)
- Supported measuring elements: Thermocouples, RTD temperature probes, resistance transmitters, resistance/potentiometers, or standard signals (current or voltage)
- The analog inputs are galvanically isolated from each other.
- 3 expansion slots for expansion to up to 4 universal analog inputs, 8 digital inputs, 3 analog outputs, or 8 digital outputs
- Supported controller types: Two-state controller, three-state controller, modulating controller, continuous controller, or continuous controller with integrated actuator controller
- Customer-specific linearization possible by using a formula
- Limit value monitoring function
- 4 formulae for math and logic functions (option)
- 1 counter input up to 10 kHz
- The module operates independently (configurable) which means the control task is carried out even if the central processing unit or the higherranking system malfunctions
- If the controller is replaced during service work the new controller (identical type) is automatically configured
- Dimensions (W × H × D): 45 mm × 103.6 mm × 101.5 mm (without connection elements)



For further information: Refer to data sheet 705010

### Relay module 4-channel – 705015



- 4 relay outputs controlled via the system bus by digital signals
- Each relay is equipped with a changeover contact AC 230 V / 3 A
- Separate terminal strip per relay output
- Automatic configuration after the module insert has been exchanged during service work
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)

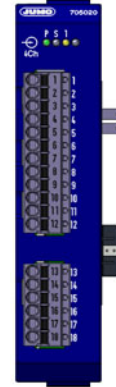


For further information: Refer to data sheet 705015

### Analog input module 4-channel – 705020



- 4 universal analog inputs
- Supported measuring elements: Thermocouples, RTD temperature probes, resistance transmitters, resistance/potentiometers, or standard signals (current or voltage)
- The analog inputs are galvanically isolated from each other
- Customer-specific linearization possible by using a formula or up to 45 pairs of values
- Limit value monitoring function
- A digital input (DC 0/24 V) is additionally provided
- Automatic configuration after the module insert has been exchanged during service work
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)



For further information: Refer to data sheet 705020

### Analog input module 8-channel – 705021



- 8 analog inputs for RTD temperature probes Pt100, Pt500, or Pt1000 in 2-wire circuit
- The analog inputs are not galvanically isolated from each other
- Limit value monitoring function
- A digital input (DC 0/24 V) is additionally provided
- Automatic configuration after the module insert has been exchanged during service work
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)



For further information: Refer to data sheet 705021

### Analog output module 4-channel – 705025



- 4 separately configurable analog outputs 0(2) to 10 V or 0(4) to 20 mA
- Analog outputs galvanically isolated from each other
- Configurable behavior in case of an error, e.g. acc. to NAMUR recommendation NE 43
- Automatic configuration after the module insert has been exchanged during service work
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)

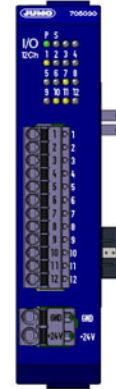


For further information: Refer to data sheet 705025

### Digital input/output module 12-channel – 705030

I/O  
12

- 12 channels, that can each be configured as digital input (DC 0/24 V) or digital output (DC 0/24 V, 500 mA)
- Supply of external voltage through terminal at the front
- Automatic configuration after the module insert has been exchanged during service work
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)

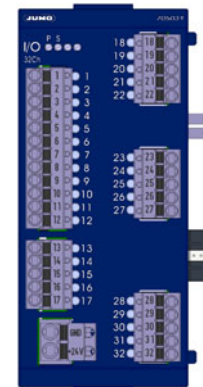


For further information: Refer to data sheet 705030

### Digital input/output module 32-channel – 705031

I/O  
32

- Compatible with JUMO variTRON as of system version 3
- 17 digital inputs (DC 0/24 V)
- Up to 15 additional digital outputs (DC 0/24 V) or digital inputs (DC 0/24 V, 500 mA) as options
- Supply of external voltage through terminal at the front
- Automatic configuration after the module insert has been exchanged during service work
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)



For further information: Refer to data sheet 705031

### Thyristor power controller TYA 20x – 70906x



- Various device versions for single-phase operation, for operation in a three-phase economy circuit, and for a complete three-phase operation
- Integration into the automation system via EtherCAT or PROFIBUS
- Access to various process values of the power controller



For further information: Refer to data sheet 709061, 709062, 709063

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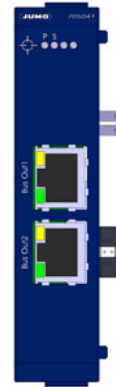


## Special modules

### Router module 2-port – 705041



- Compatible with JUMO variTRON as of system version 3
- Decentralized module assignment supported
- Arrangement on DIN rail (lateral system bus input and output)
- 2 RJ45 system bus connections at the front (2 × Bus Out), galvanically isolated
- Up to 100 m distance between 2 router modules
- Up to 30 router modules are possible
- No configuration of the router module required
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)

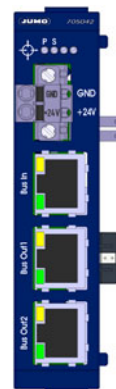


For further information: Refer to data sheet 705041

### Router module 3-port – 705042



- Compatible with JUMO variTRON as of system version 3
- Decentralized module assignment supported
- First module on an additional DIN rail for connecting further modules
- 3 RJ45 system bus connections at the front (1 × Bus In, 2 × Bus Out), galvanically isolated
- Up to 100 m distance between 2 router modules
- Up to 30 router modules are possible
- The router module operates at a voltage supply of DC 24 V and supplies the connected input/output modules
- No configuration of the router module required
- For applications such as Hot Connect, for example, the address of the router module can be set by rotary coding switches
- Dimensions (W × H × D): 22.5 mm × 103.6 mm × 101.5 mm (without connection elements)



For further information: Refer to data sheet 705042



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## Panels

### JUMO variTRON web panels – 705070

HMI

Various versions:

- TFT color screen
- Up to 16 million colours
- Touch operation, resistive or capacitive
- Multi-touch operation (capacitive), also with gloves
- Screen sizes (diagonal) from 10.9 cm (4.3") to 54.6 cm (21.5")
- Screen resolutions from 480 × 272 to 1920 × 1080
- Panel mounting or variable fastening
- Connection to the central processing unit via Ethernet interface
- Voltage supply DC 24 V or PoE
- Versions for food industry



For further information: Refer to data sheet 705070

## Power supply units

### Power supply units 24 V – 705090



- Voltage supply AC 100 to 240 V
- 150 % peak load capability (for typical 4 s)
- Minimum current inrush
- Floating DC-OK relay contact
- Efficiency up to 93.5 %
- Active power factor correction (PFC)
- Active filter against mains transients
- Quick connection due to spring terminals
- Dimensions (W × H × D):  
 705090/05-33: 40 mm × 130.5 mm × 121.5 mm  
 705090/10-33: 60 mm × 130.5 mm × 121.5 mm



For further information: Refer to data sheet 705090