

T 6493 EN

TROVIS 6493 Compact Controller

TROVIS 6400 Automation System



Application

For panel mounting (front frame 48 x 96 mm/1.89 x 3.78 inch)

Digital controller to automate industrial and process plants for general and more complex control tasks. Suitable for control of continuous, on/off or pulsing final control elements (pneumatic actuators with i/p positioners, additional electric actuators, electric heating systems, refrigerating machines etc.)

By setting the functions and parameters, the controller can be adapted to a control task quickly.

The controller settings are saved in a non-volatile memory, even when the power supply fails.

Special features

- Configuration using the controller keys or the TROVIS-VIEW 4 software
- Two analog inputs with filtering, root extraction, function generation and signal monitoring
- One binary input with selectable function
- Two relay outputs for on/off or three-step output or limit alarms
- One transistor output for fault alarms
- Infrared interface for configuration
- Plug-on screw terminals
- Degree of protection (front) IP 65
- Two internal set points and one external set point (fixed set point control and follow-up control)
- Set point ramp and output ramp
- Control signal limitation
- Linking of input variables (addition, subtraction)
- Operation with code number or control key locking by binary input



Fig. 1: TROVIS 6493 Compact Controller

Inputs and outputs (Fig. 2)

Two analog inputs

One input is used for the controlled variable. The second input can be used for the external set point, disturbance variable, position feedback of an actuator or as an input for differential control. Both inputs can be configured as:

- 0 to 20 mA, 4 to 20 mA
- 0 to 10 V, 2 to 10 V
- Resistance thermometers Pt 100, Pt 1000, Ni 100, Ni 1000
- Potentiometer 1 k Ω

One binary input

The binary input is activated by a voltage signal (4 to 31 V DC) and can be used as follows:

- Activation of the constant output value (e.g. for enabling control)
- Set point switchover
- Start the set point ramp or output ramp
- Manual/automatic switchover
- Locking the control signal
- Activation of the relay outputs
- Control key locking

One analog output

The controller output is issued at the analog output by default. Optionally, an input signal (e.g. controlled variable, external set point) or error signal can be issued. The output can be configured as:

- 0 to 20 mA, 4 to 20 mA
- 0 to 10 V, 2 to 10 V

Two relay outputs

The relays are double-throw contacts and can be used either as on/off outputs, three-step outputs or for status and limit alarms.

One transistor output

The isolated transistor output issues the collective fault alarm. If an internal fault exists or the configured signal monitoring of the inputs responds, the externally connected voltage signal (3 to 50 V DC, max. 30 mA) is generated.

One supply output

The supply output can be used to supply a voltage (20 V DC, max. 45 mA) to either a two-wire transmitter or the binary input.

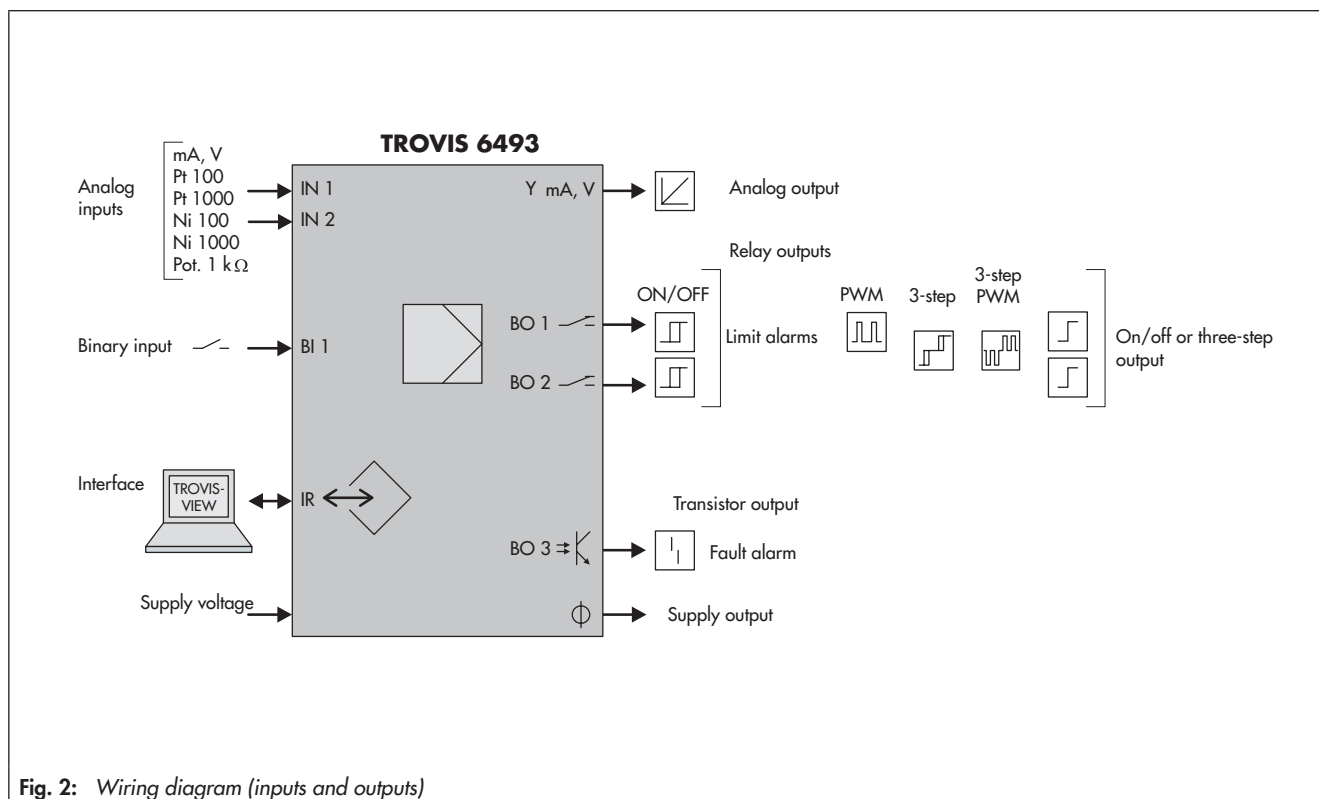


Fig. 2: Wiring diagram (inputs and outputs)

Operation (Fig. 3)

The controller is operated using six keys whose functions depend on the selected level.

Operating level

After the compact controller is switched on, it runs in automatic mode. The display shows the operating level with the controlled variable and set point readings. The selector key (8) can be used to switch the reading on the bottom row of the display (2): internal set point W or W2, external set point WE, manipulated variable Y or error signal Xd%. The internal set points W and W2 can be changed by pressing the cursor keys (4 and 5).

Setup and parameter levels

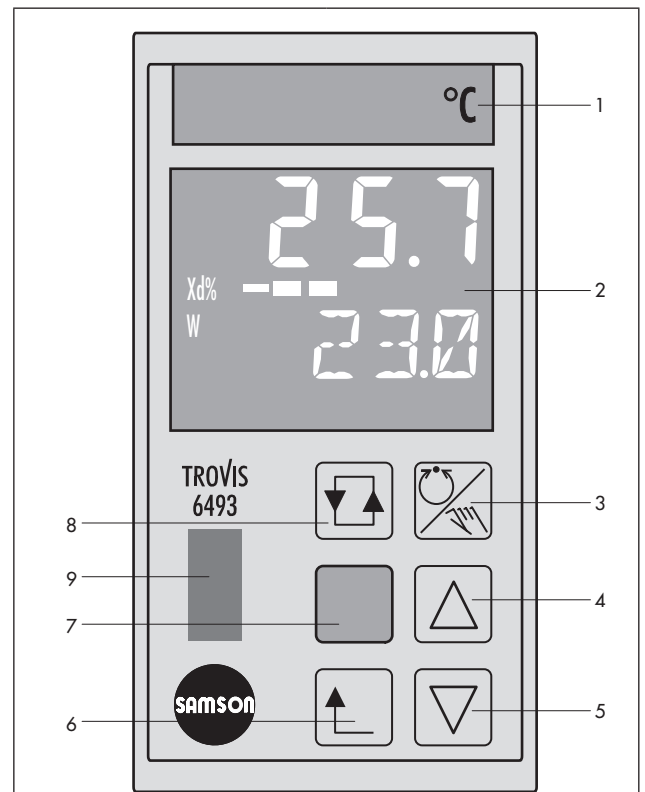
Press the enter key (7) to access the setup and parameter levels. In these levels, the compact controller is adapted to its control task by configuring the functions and setting the parameters. The functions are arranged in hierarchical levels. The cursor keys (4 and 5) are used to navigate to levels, sub-levels, functions and parameters and the enter key (7) to open them. Changes to settings are confirmed by pressing the enter key (7). The user can return at any time to the next level by pressing the escape key (6). The functions blocks, parameters and calibration values can be protected by a key code against unauthorized access.

TROVIS-VIEW 4 Software

The infrared interface (Fig. 4) at the front allows the compact controller to be configured and operated using SAMSON's TROVIS-VIEW 4 software installed on a computer.

The TROVIS-VIEW software can be downloaded free of charge from our website (► www.samson.de > Services > Software > TROVIS-VIEW). The software can also be supplied on a CD-ROM on request (order no. 6661, configuration ID 2938759). Refer to the Data Sheet ► T 6661 for details on the system requirements.

The compact controller can communicate with a PC over its infrared interface on the front of the controller next to the yellow enter key. An infrared adapter (order no. 8864-0900) is required for data transmission between the serial RS-232 interface on the PC and infrared interface on the controller. A bracket (order no. 1400-9769) ensures that the adapter is properly aligned in front of the controller. The infrared adapter can be connected to the USB port of the computer using the USB/RS-232 adapter (order no. 8812-2001).



- | | |
|--|---|
| 1 Label (exchangeable) | 5 Cursor key (decrease, scroll backwards) |
| 2 Display | 6 Escape key |
| 3 Manual/automatic key | 7 Enter key |
| 4 Cursor key (increase, scroll forwards) | 8 Selector key |
| | 9 Infrared interface |

Fig. 3: Operation

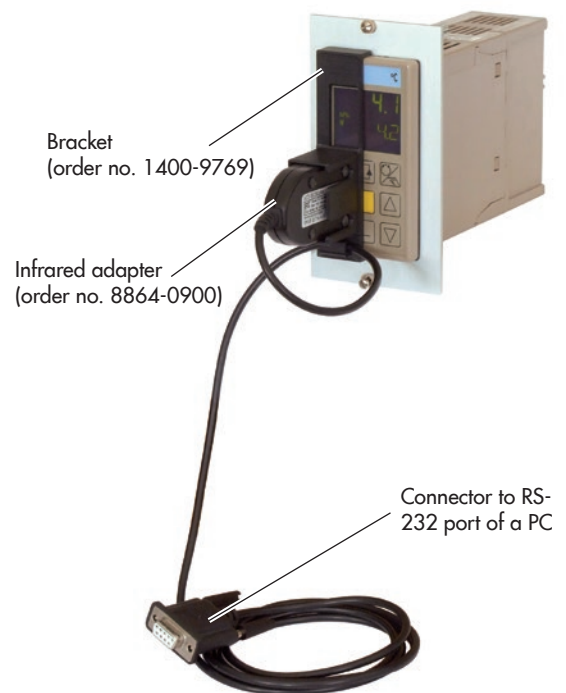


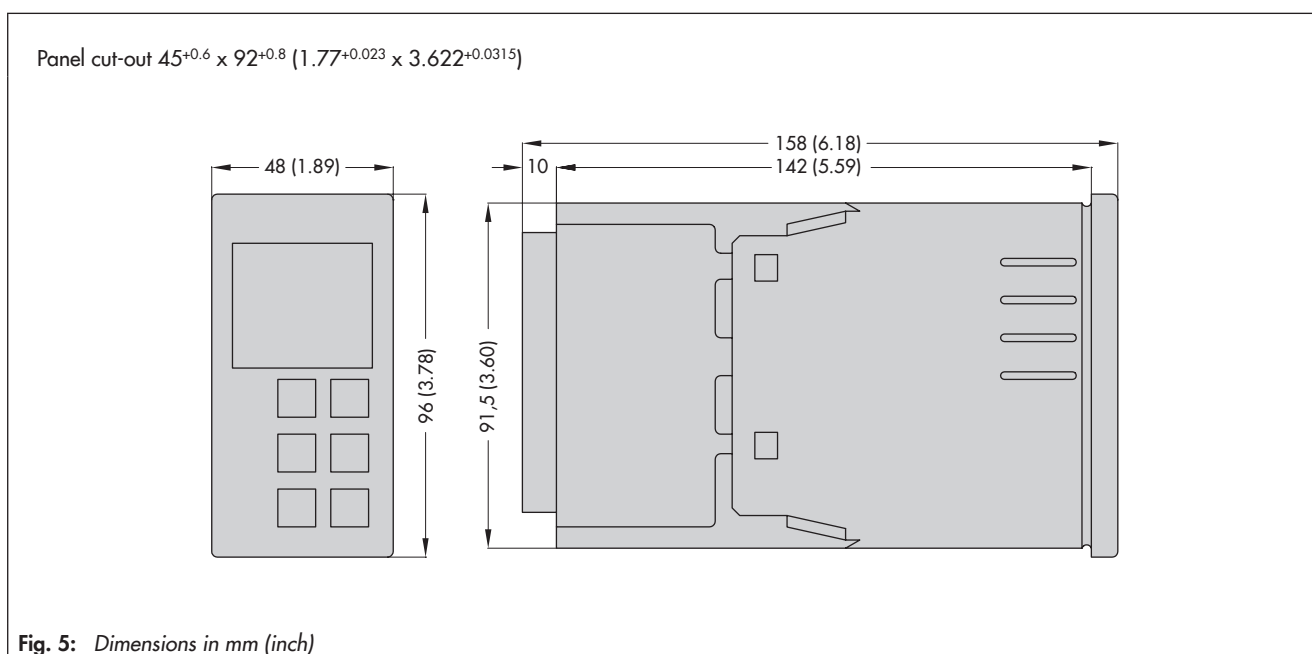
Fig. 4: Connecting an infrared adapter

Technical data

Inputs		
Analog input IN1 Analog input IN2		Two analog inputs, optionally for controlled variable X or external set point WE 0/4 to 20 mA or 0/2 to 10 V, resistance thermometer Pt 100, Pt 1000, Ni 100, Ni 1000 or potentiometer 1 k Ω
Input for current and voltage	Signal range	0/4 to 20 mA or 0/2 to 10 V
	Maximum permissible values	Current ± 50 mA, voltage ± 25 V
	Internal resistance	Current $R_i = 50 \Omega$, voltage $R_i = 20 \text{ k}\Omega$
	Permissible common mode voltage	0 to 5 V
	Error	Zero < 0.2 %, span < 0.2 %, linearity < 0.2 %
	Temperature influence	< 0.1 %/10 K for zero and span (based on 20 °C)
	Resolution	< 0.0024 mA (< 0.012 % with 0 to 20 mA) < 0.015 % with 4 to 20 mA) < 1.2 mV (< 0.012 % with 0 to 10 V)
Transmitter supply		Acc. to DIN IEC 381 (NAMUR NE 06) 20 V DC, max. 45 mA, resistant to short circuiting
Resistance thermometer	For sensor	Pt 100, Pt 1000 acc. to DIN EN 60751 Ni 100, Ni 1000 acc. to DIN 43760
	Nominal measuring range	Pt 100, Pt 1000: -100 to 500 °C Ni 100, Ni 1000: -60 to 250 °C
	Wire resistance	Three-wire $R_{L1} = R_{L2} = R_{L3} < 15 \Omega$
	Error	Zero < 0.2 %, span < 0.2 %, linearity < 0.2 %
	Pt 100, Pt 1000 (in the range between -40 and 150 °C)	Zero < 0.1 %, span < 0.1 %, linearity < 0.1 %
	Temperature influence	< 0.2 %/10 K for zero and span (based on 20 °C)
	Resolution	< 0.04 °C (< 0.007 % at -100 to 500 °C)
Potentiometer	Nominal value	1 k Ω , three-wire
	Wire resistance	$R_i < 15 \Omega$ per wire
	Error	Zero < 0.2 %, span < 0.2 %
	Temperature influence	Zero < 0.1%/10 K, span < 0.2 %/10 K (based on 20 °C)
	Resolution	< 0.07 (< 0.007 %)
Binary input		Switching contact - with external supply 24 V DC (4 to 31 V DC) or - powered by the controller over terminals 14, 15 (20 V DC) Signal state OFF with 0 to 2 V Signal state ON with 4 to 31 V Current consumption < 6.0 mA with 24 V DC < 5.5 mA with 20 V DC
Outputs		Continuous-action, on/off or three-step output
Analog output	Signal range	0(4) to 20 mA; load < 740 Ω 0(2) to 10 V; load > 3 k Ω
	Maximum modulation range	0 to 22 mA, 0 to 11 V
	Error	< 0.2 %
	Temperature influence	Zero < 0.1%/10 K, span < 0.1 %/10 K
	Resolution	< 0.0015 mA (< 0.0075 % with 0 to 20 mA) < 0.0094 % with 4 to 20 mA) < 0.75 mV (< 0.0075 % with 0 to 10 V)
Binary output BO1 Binary output BO2		Two relays with floating switching contact, max. 250 V AC, max. 250 V DC, max. 1 A AC, max. 0.1 A DC, $\cos \Theta = 1$
	Spark suppression	Connected in series $C = 2.2 \text{ nF}$ and varistor 300 V AC, in parallel to each re- lay contact
Binary output BO3 for fault alarms		Isolated transistor output, external supply 3 to 50 V DC, max. 30 mA

Infrared interface	
Transmission protocol	SAMSON-specific protocol (SSP)
Transmission rate	9600 bit/s
Angle of reflected beam	50°
Distance IR adapter – controller	Max. 0.7 m
General specifications	
Display	Backlit LCD
Reading range	–999 to 9999; start value, end value and decimal separator can be adjusted
Configuration	Functions saved in read-only memory for fixed set point and follow-up control, one control circuit
Supply voltage	90 to 250 V AC; 47 to 63 Hz 24 V AC/DC (20 to 30 V AC/DC), 47 to 63 Hz
Power consumption	13 VA (90 to 250 V AC), external fuse > 630 mA (slow) 7 VA (24 V AC/DC), external fuse > 1.25 A (slow)
Temperature	0 to 50 °C (ambient) –20 °C to 70 °C (storage and transport)
Mechanical environmental testing for storage, transportation and operation	Sinusoidal vibrations acc. to IEC 60068-2-6 2 to 9 Hz; amplitude 3.5 mm 9 to 200 Hz; acceleration 10 m/s ² 200 to 500 Hz; acceleration 1.5 m/s ²
	Random vibrations acc. to IEC 60068-2-64 1.0 m ² /s ³ ; 10 to 200 Hz 0.3 m ² /s ³ ; 200 to 2000 Hz
	Shocks acc. to IEC 60068-2-27 Acceleration 100 m/s ² ; duration 11 ms
Degree of protection	IP 65 (front), IP 30 (housing), IP 00 (terminals) according to EN 60529
Device safety	Acc. to EN 61010-1: Protection class II Overvoltage category II Degree of contamination 2 Design and testing according to EN 61010
Electromagnetic compatibility	Requirements according to EN 61000-6-2, EN 61000-6-3 and EN 61326-1
Electrical connection	1.5 mm ² screw terminals
Scanning time	≤ 80 ms
Weight	Approx. 0.5 kg
Compliance	CE · EAC

Dimensions in mm (inch)



Electrical connection

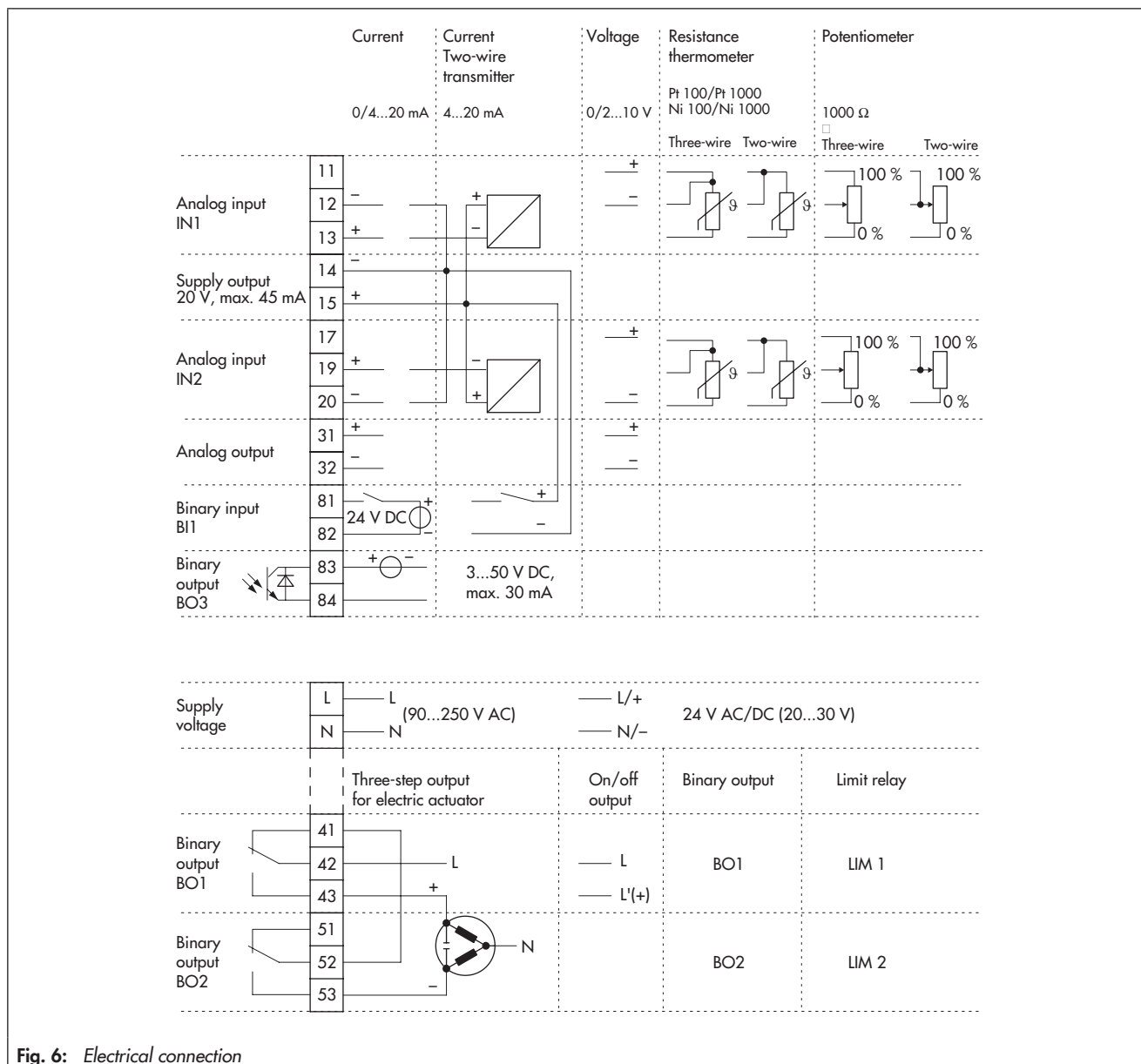


Fig. 6: Electrical connection

Article code

Compact controller	TROVIS 6493-032	x
Supply voltage	90 to 250 V AC	4
	24 V AC/DC	5

Accessories

Accessories	Order no.
CD-ROM with TROVIS-VIEW 4 software	6661, Var.-ID 2938759
Infrared adapter (RS-232).....	8864-0900
Bracket for infrared adapter.....	1400-9769
USB/RS-232 adapter	8812-2001

TROVIS 6495-2 Industrial Controller

For panel mounting (front frame 96 x 96 mm/3.78 x 3.78 inch)

Application

Digital controller to automate industrial and process plants for general and more complex control tasks · Suitable for control of continuous, on/off or pulsing final control elements (pneumatic actuators with i/p positioners, electric actuators, electric heating systems, refrigerating machines etc.)



The TROVIS 6495-2 Industrial Controller has two independent internal controllers with common input and output sections.

By setting the configuration items and parameters, the controller can be adapted to a control task quickly. Preset basic configurations for each control type minimize setup work for standard applications. The controller can be set up directly at the controller or using the optional TROVIS-VIEW software.

The controller settings are saved in a non-volatile memory, even when the power supply fails. The two internal controllers can be operated directly without switching over. The plain-text display (German, English, French) facilitates configuration and parameterization.

Special features

- Simple menu structure with plain text readings
- Four analog inputs with filtering, root extraction and function generation as well as measuring range monitoring
- Four digital inputs for set point switchover, constant output value, reversal of operating action, output tracking (DDC backup), ramps etc.
- Three analog outputs
- Four relay outputs for two on-off/three-step outputs or limit alarms
- Two transistor outputs for status alarms
- One transistor output for fault alarms
- Optional RS-232/USB and RS-485 Modbus RTU/USB interface boards for SSP and Modbus RTU
- Degree of protection (front) IP 65
- Plug-on screw terminals
- Fixed set point control, one or two channels, internal/external switchover
- Follow-up control, one or two channels, internal/external switchover
- Ratio control
- Cascade control, consisting of master and slave controller
- Override control
- Mixing control
- Linking of input variables (addition, subtraction, multiplication, division, mean value, minimum and maximum selection) for feedforward control or control with max. four input variables (multi-component control)



Fig. 1 · TROVIS 6495-2 Industrial Controller

- Operation with max. four internal set points and one external set point, either analog or over interface (SPC mode)
- Set point ramp and output ramp
- Split-range operation
- Control mode switchover P/PI or PD/PID
- KP or TN adapted using the controlled variable, reference variable, manipulated variable or error
- Adjustable limitation of integral-action component
- Operating point determined by set point or digital input
- Control signal limitation (fixed or floating according to input variable)
- Operation with key number or key locking over the digital input

Inputs and outputs (Fig. 3)

- **Four analog inputs** (AI 1 to AI 4) · DIP switches at the side of the case are used to initially select current or resistance inputs. The signal type is set depending on the configuration: 0 (4) to 20 mA, 0 (2) to 10 V, Pt 100, Pt 1000; input 2 additionally for potentiometer.
- **Four digital inputs** (DI 1 to DI 4) · The digital inputs are controlled either by a 24 V DC voltage signal or by the transmitter supply using a floating contact. The digital outputs can only be controlled in groups, with DI 1 and DI 2 being the first group, and DI 3 and DI 4 being the second group. Example: internal supply for digital inputs DI 1 and DI 2, and external supply for digital inputs DI 3 and DI 4.
- **Three analog outputs** (AO1 to AO3) · The signal type is set depending on the configuration: 0 (4) to 20 mA, 0 (2) to 10 V. Outputs AO1 and AO3 can optionally be used for other signals as well.
- **Seven digital outputs** · Four relay and three transistor outputs. The relay outputs can be used to implement on/off, three-step (SO1 and SO2) or limit outputs (DO 1 to DO 4). The transistor outputs DO 5 and DO 6 can be used to issue status alarms; fault alarms can be issued at transistor output DO 7.

Power supply

The controller comes with two different power supply units. Specify the required version in your order:

- 85 to 264 V AC
- 24 V AC/DC

Supply output (auxiliary voltage)

A maximum of four two-wire transmitters and four digital inputs can be supplied by this output (21 V DC, 90 mA).

Infrared interface (Fig. 2)

Data are transmitted between the controller and the TROVIS-VIEW Configuration and Operator Interface over an infrared interface integrated into the controller and an infrared adapter (order no. 8864-0900) connected to a PC.

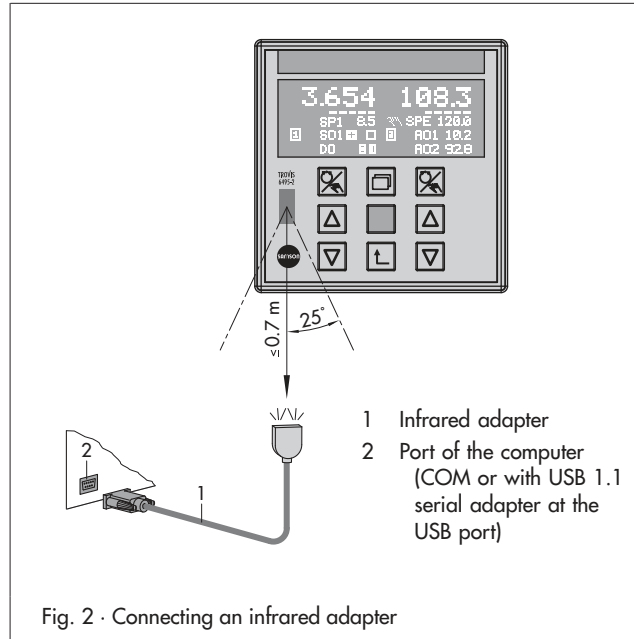


Fig. 2 · Connecting an infrared adapter

Communications interface

The controller can optionally be fitted with one of the two following interface boards. The boards can be retrofitted.

RS-232/USB interface board with

- RS-232 interface (RJ 12 connector) and
- USB interface (5-pin mini-B connector)

RS-232 data transmission uses SSP or Modbus RTU protocol.

RS-485/USB interface board with

- RS-485 interface (four terminals) and
- USB interface (5-pin mini-B connector)

RS-485 data transmission uses SSP or Modbus RTU protocol. The two-/four-wire operation and the active bus termination can be set over slide switches.

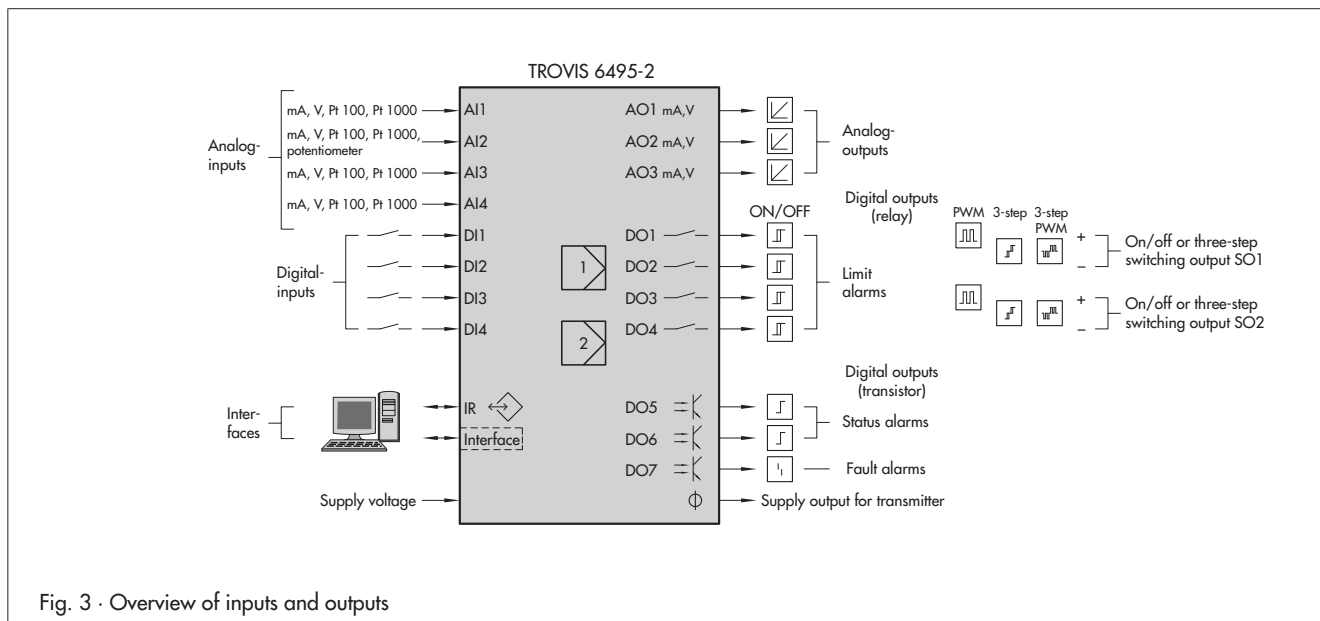


Fig. 3 · Overview of inputs and outputs

Operation

Display and operating controls (Figs. 4)

The device has nine operator keys, of which three are assigned to each controller. Depending on the selected control mode, one or two controllers are activated. Controller [1] is displayed and operated on the left, Controller [2] on the right, or optionally vice versa. The row of keys in the middle is used for both controllers.

Operating level

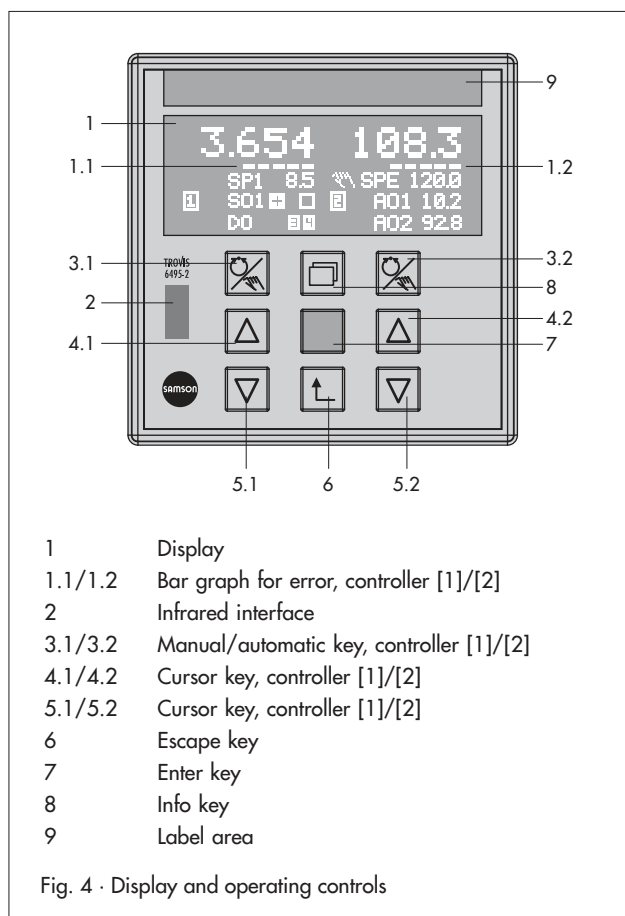
After the power supply has been switched on, the controller is in the operating level.

The readings of the controlled variable, the reference variable and the manipulated variable for each controller as well as a bar graph for error are indicated on the display (1). Depending on the configuration, status alarms of the digital inputs and outputs can be shown. The operating menu allows set points to be switched and control parameters to be changed.

The two rows at the bottom of the display can be assigned as desired. The user can choose between various signals and intermediate calculations inside the controller. For example, the values or a bar graph of two outputs in split-range operation can be displayed.






Configuration and parameterization

In the configuration level, the controller is adapted to the control task to be completed. The functions are arranged in hierarchical menus. All settings are displayed as plain text.



- 1 Display
- 1.1/1.2 Bar graph for error, controller [1]/[2]
- 2 Infrared interface
- 3.1/3.2 Manual/automatic key, controller [1]/[2]
- 4.1/4.2 Cursor key, controller [1]/[2]
- 5.1/5.2 Cursor key, controller [1]/[2]
- 6 Escape key
- 7 Enter key
- 8 Info key
- 9 Label area

Fig. 4 · Display and operating controls

Key	Key functions in the levels			
	Operating level	Info menu	Operating menu	Configuration level
 Manual/ automatic key	<ul style="list-style-type: none"> – Switch between manual and automatic control mode – Cascade control: Open/close controller cascade 	– No function –	– No function –	– Edit individual items of parameters
 Cursor keys	<ul style="list-style-type: none"> – Automatic mode: Change set point – Manual mode: Change output value 	– Browse through menu and information	<ul style="list-style-type: none"> – Browse through a menu – Change set point and control parameters 	<ul style="list-style-type: none"> – Browse through menu, submenu, configuration items and parameters – Change configuration items and parameters
 Enter key	– Enter main menu (operating menu and configuration level)	– Enter menu	<ul style="list-style-type: none"> – Confirm settings – Switch over set point 	<ul style="list-style-type: none"> – Enter menu and submenu, activate configuration items and parameters – Confirm settings
 Info key	– Open info menu	– No function –	– No function –	– No function –
 Escape key	– Confirm restart after power supply failure	– Return to the operating level step by step	– Return to the operating level step by step	– Return to the operating level step by step

Operation using TROVIS-VIEW

Controller settings (Fig. 5)

Configuration settings and parameters can conveniently be adjusted, documented and transmitted using the optional TROVIS-VIEW software. Working in TROVIS-VIEW is similar to working in Windows Explorer.

TROVIS-VIEW includes a **trend viewer** for start-up that records the process data. Input and output variables are displayed in a clear structure.

The TROVIS-VIEW software is delivered on a CD-ROM. For further information on TROVIS-VIEW refer to Data Sheet T 6661 EN.

Data transmission (Fig. 6)

See section on accessories on page 8 for order numbers.

Data can be transmitted between TROVIS-VIEW and the controller in different ways:

- Data transmission using the **infrared interface** (11) and an infrared adapter (14)
- Data transmission using the optional **interface board** with RS-232 and USB connections: data can be transmitted over a conventional cable, either a USB cable (13) or a connecting cable (15), and a **memory pen** (16).
- The controller can be fitted with the optional **RS-485 interface board** to integrate it into a communications network. This interface board has a USB port used to transmit data over TROVIS-VIEW.

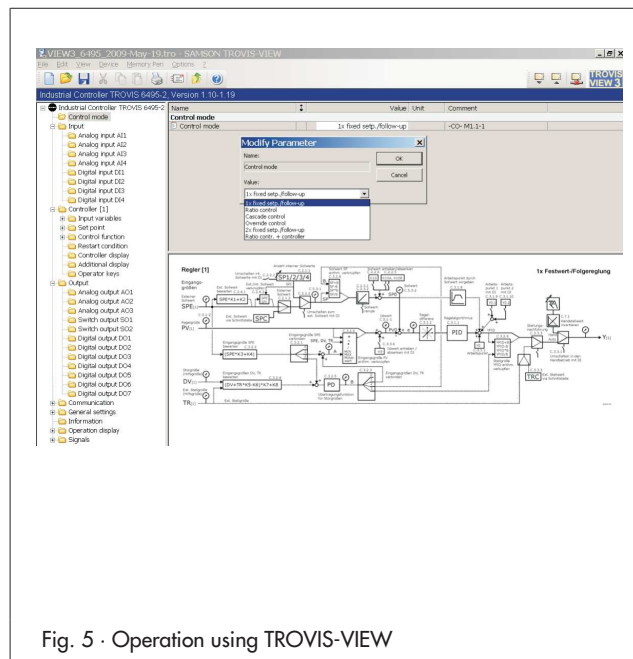


Fig. 5 · Operation using TROVIS-VIEW

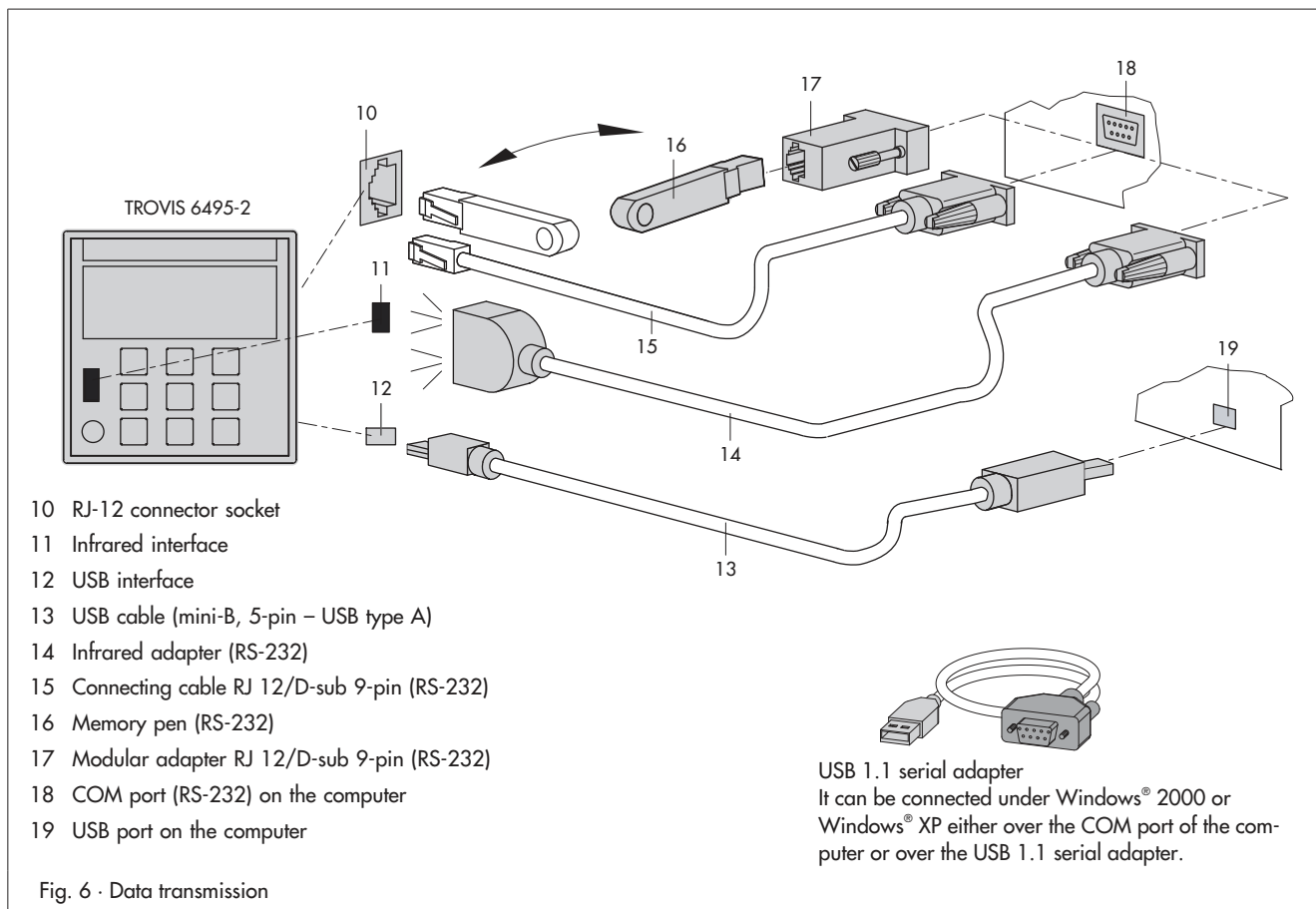



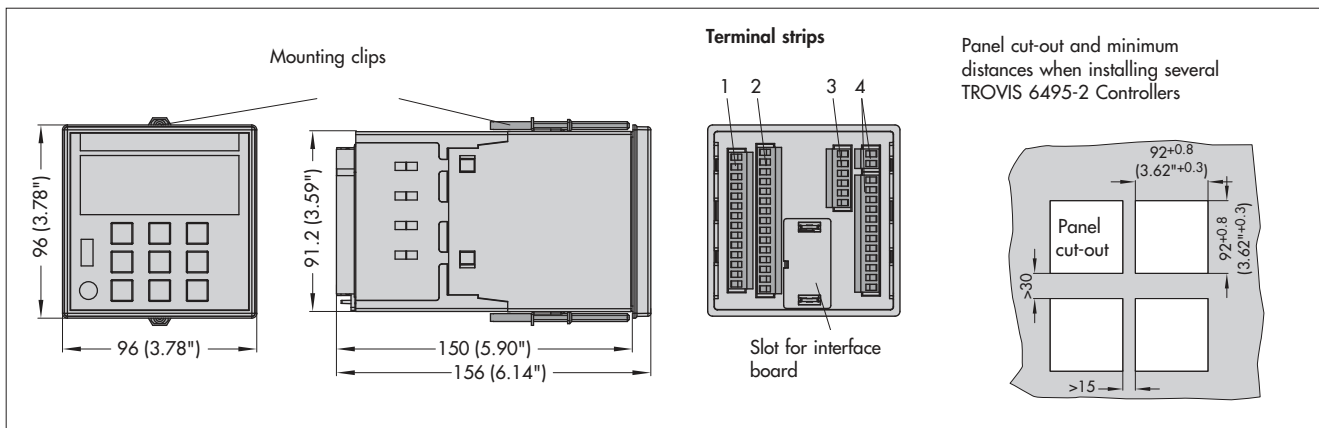
Fig. 6 · Data transmission

Inputs		
4 analog inputs		mA, V, Pt 100, Pt 1000, input 2 also for potentiometer
mA or V inputs	Version	Differential input
	Nominal signal range	0 to 20 mA, 4 to 20 mA, 0 to 10 V, 2 to 10 V
	Resolution	< 0.007 %, based on nominal signal range
	Permissible signal range	-1 to 22 mA or -0.5 to 11 V
	Input resistance	50 Ω with current; 10 k Ω with voltage
	Static destruction limit	\pm 50 mA for current input · \pm 30 V for voltage input
Resistance thermometer	For sensor	Pt 100, Pt 1000, according to DIN EN 60751
	Nominal signal range	-50 to 300 °C (-58 to 572 °F)
	Connection	Three-wire circuit (resistance per lead < 15 Ω), two-wire circuit
Potentiometer	Resolution	< 0.02 K (0.006 % based on nominal signal range)
	Nominal values	100, 200, 500, 1000 Ω
	Connection	Three-wire circuit, resistance per lead < 15 Ω
General specifications	Resolution	< 0.006 %
	Measuring error of inputs	< \pm 0.2 % of nominal signal range for zero, span, linearity
	Ambient temperature influence	< \pm 0.1 %/10 K for zero and span, based on 20 °C
	Input filter	Adjustable
	Function generation	Adjustable using 7 points
	Signal increase/drop	Adjustable
	User calibration	Adjustable
	Transmitter fault alarm	Adjustable, input signal < -5 % or > 105 %
Transmitter supply	Supply output, terminals 89 and 90, 21 V DC, max. 90 mA, resistant to short-circuiting	
4 digital inputs		
	Control	Switching contact with external supply 24 V DC (17 to 31 V DC) or supplied by the controller over terminals 89 and 90 (21 V DC) Signal state 'OFF' at 0 to 10 V, signal state 'ON' at 17 to 31 V, signal inversion can be configured Current consumption 3.1 mA at 24 V DC and 2.4 mA at 21 V DC DI1 and DI2 as well as DI3 and DI4 are galvanically connected on one side
Outputs		
3 analog outputs		
	Nominal signal range	0 to 20 mA, 4 to 20 mA, 0 to 10 V, 2 to 10 V
	Max. permissible signal range	0 (2.4) to 22 mA or 0 (1.2) to 11 V
	Load	< 750 Ω for current; > 3 k Ω for voltage
	Error of outputs	< \pm 0.2 % of the nominal signal range for zero, span, linearity
	Ambient temperature influence	< \pm 0.1 %/10 K for zero and span, based on 20 °C
	Resolution	< 0.03 %, based on nominal signal range
	Static destruction limit	\pm 30 V
7 digital outputs		
Relay outputs	4 relays with floating NO contact, can be inverted	
	Permissible contact load	264 V AC, 1 A AC, $\cos \phi = 1$ or 250 V DC, 0.1 A DC
	Spark suppression	Parallel connection C = 2.2 nF and varistor 300 V AC, in parallel to each relay contact
Transistor outputs	3 electrically isolated transistor outputs	
	External supply	3 to 42 V DC, max. 30 mA
Interfaces		
Infrared interface	Transmission protocol	SAMSON-specific protocol (SSP)
	Data that can be transmitted	Controller settings, process variables, operating status
	Transmission rate	9600 bit/s
	Angle of deflection	50°
	Distance IR adapter – controller	\leq 70 cm

Technical data (continued)

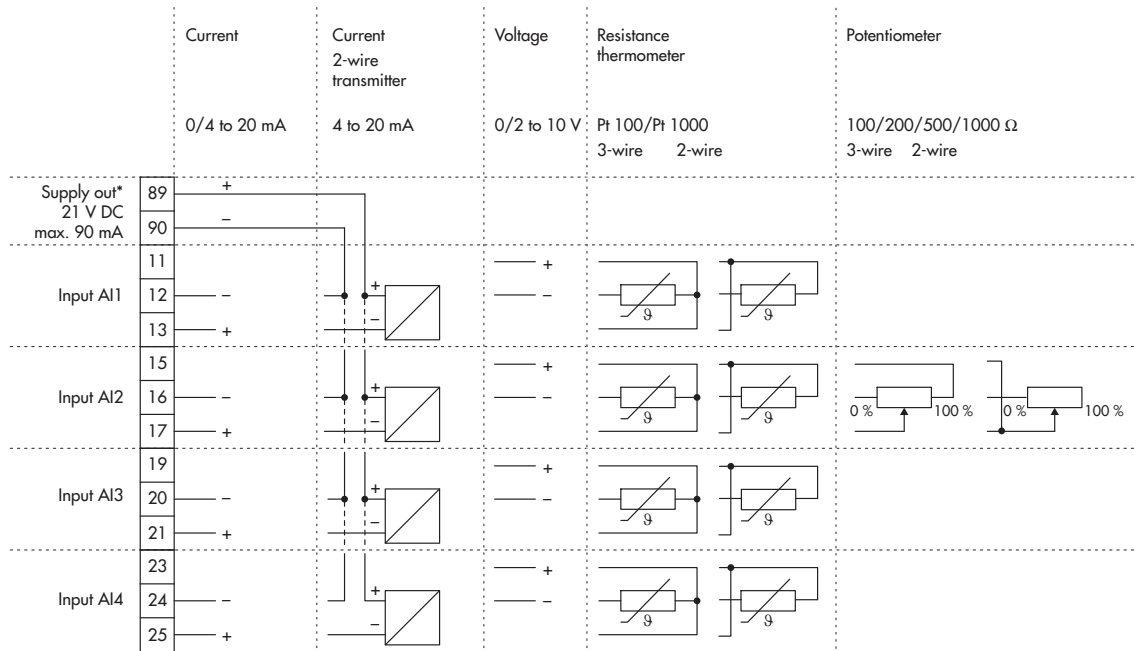
RS-232/USB (accessories)	RS-232 with electrical isolation, USB (slave)	
	Connection	USB: 5-pin mini-B · RS-232: RJ 12
	Transmission protocol	USB: SAMSON-specific protocol (SSP) · RS-232: SSP and Modbus RTU
	Data that can be transmitted	Controller settings, process variables, operating status, fault alarms
RS-485/USB (accessories)	RS-485 with electrical isolation, USB (slave)	
	Connection	USB: 5-pin mini-B · RS-485: 4-pin screw terminals
	Transmission protocol	USB: SAMSON-specific protocol (SSP) · RS-485: SSP and Modbus RTU
	Data that can be transmitted	Controller settings, process variables, operating status, fault alarms
	Transmission rate/format	SSP: 9600 bit/s, 8 bit, no parity bit, 1 start bit Modbus: 300 to 115200 bit/s, 8 bit, parity bit adjustable, 1 (2) stop bits
	Type of transmission	RS-485: Asynchronous, half duplex, 4-wire or 2-wire
	Number of connected devices	RS-485: 32 (can be extended when a repeater is used)
	Number of addressable stations	Modbus: 246
	Line length	RS-485: < 1200 m, max. 4800 m with repeater
	Bus termination	RS-485: Active, selectable
	Transmission medium	RS-485: 2 or 4 cores (twisted-pair cabling, stranded in pairs, with static shield)
General specifications		
Power supply	85 to 264 V AC, 47 to 63 Hz or 24 V AC/DC (20 to 30 V), 47 to 63 Hz	
Power consumption	85 to 264 V AC: max. 19 VA, external fuse > 630 mA (slow) 20 to 30 V AC/DC: max. 15 VA, external fuse > 1.25 A (slow)	
Temperature	Ambient: 0 to 50 °C · Storage: -20 to 70 °C	
Relative humidity	Max. 95 %, non-condensing	
Degree of protection (EN 60529)	IP 65 (front), IP 30 (housing), IP 00 (terminals)	
Device safety (EN 61010-1)	Class of protection II · Overvoltage category II · Degree of contamination 2	
Electromagnetic compatibility	Requirements according to EN 61000-6-2, EN 61000-6-3 and EN 61326-1	
Environmental effects for storage, transportation and operation	Sinusoidal vibrations acc. to IEC 60068-2-6	2 to 9 Hz / amplitude 3.5 mm 9 to 200 Hz / acceleration 10 m/s ² 200 to 500 Hz / acceleration 15 m/s ²
	Random vibrations acc. to IEC 60068-2-64	1.0 m ² /s ³ ; 10 to 200 Hz 0.3 m ² /s ³ ; 200 to 2000 Hz
	Shocks acc. to IEC 60068-2-27	Acceleration 100 m/s ² , duration 11 ms
Electrical connection	Plug-on screw terminals 1.5 mm ² (cross-section of the line 0.5 to 1.5 mm ²)	
Display	Dot matrix display with 132 x 49 pixels	
Display range	-999 to 9999; start value, end value and decimal separator can be adjusted	
Cycle time	50 ms	
Configuration	Functions saved in read-only memory, configuration saved in non-volatile memory	
Control types	One or two fixed set point/follow-up control, one ratio control, one cascade control, one ratio and fixed set point/follow-up control, one limitation control	
Weight	0.5 kg	
Compliance		

Dimensions in mm (inch)

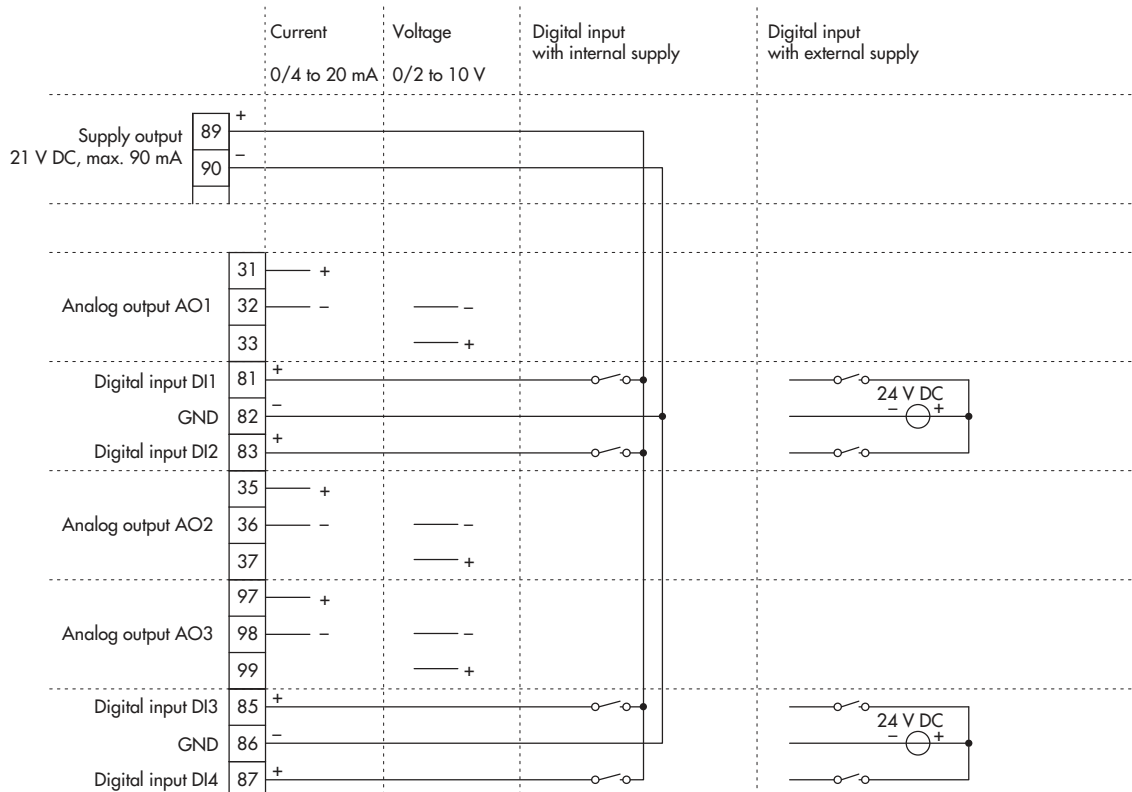


Electrical connection

Terminal strip 1

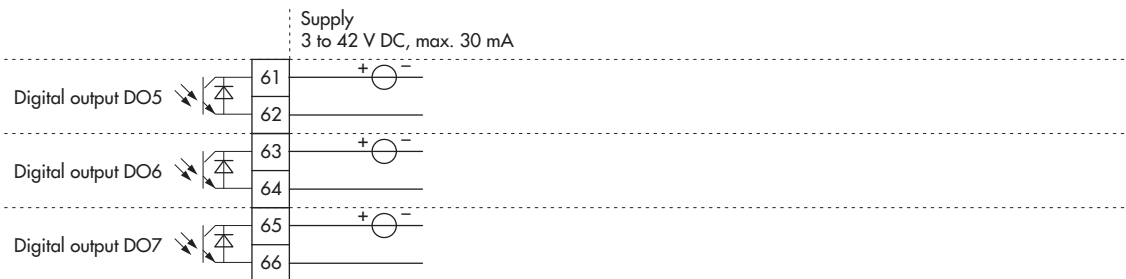


Terminal strip 2

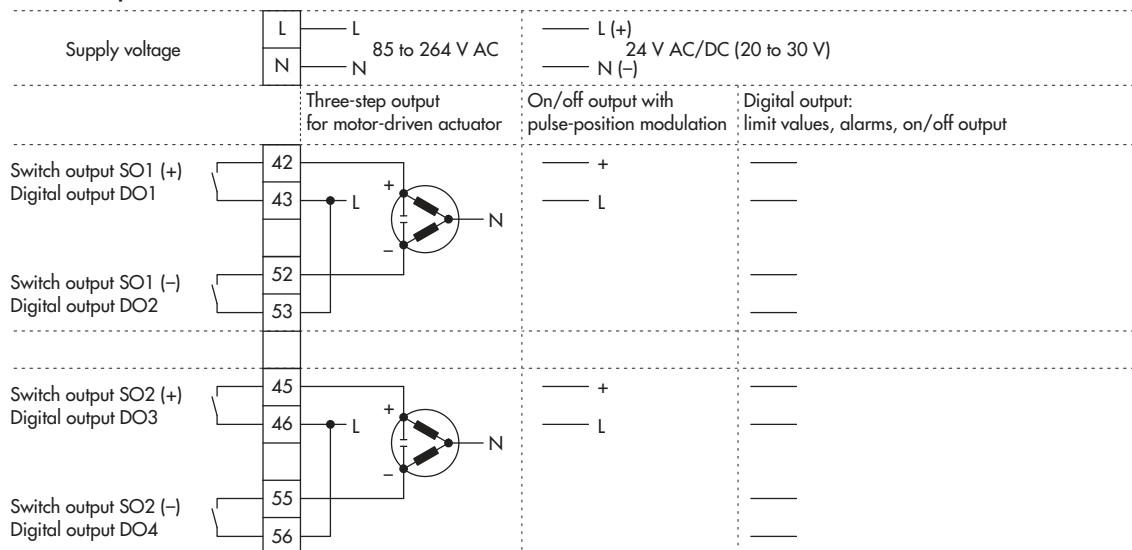


Electrical connection (continued)

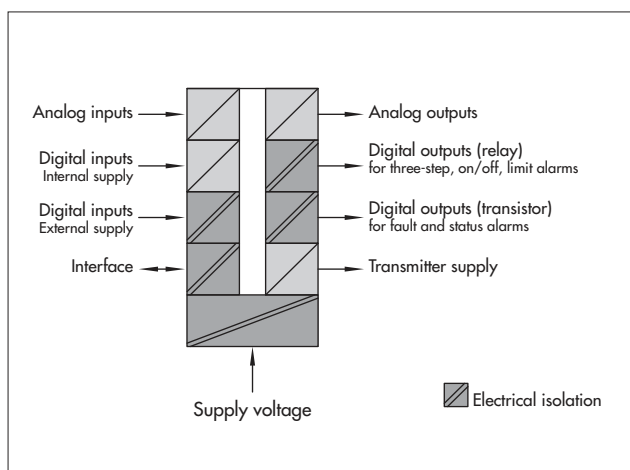
Terminal strip 3



Terminal strip 4



Electrical isolation



Article code

Industrial controller	TROVIS 6495-2	x
Power supply		
85 to 264 V AC		1
24 V AC/DC		2

Accessories

Accessories	Order no.
– TROVIS-VIEW Operator Interface.....	6661-1033
– Infrared adapter (RS-232).....	8864-0900
– Bracket for infrared adapter.....	1400-9769
– USB 1.1 serial adapter.....	8812-2001
– Interface board RS-232/USB.....	1400-9917
– Interface board RS-485/USB.....	1400-9918
– USB cable (2 m) with type A and 5-pin mini-B connectors.....	8801-7301
– Cable RJ 12/D-sub 9-pin (RS-232).....	1400-7699
– Memory pen (RS-232).....	1400-9753
– Modular adapter RJ 12/D-sub 9-pin.....	1400-7698

Specifications subject to change without notice



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