Automation System TROVIS 5100
Control and Processing Unit TROVIS 5171

SAMSON

Application

Freely programmable plants and applications for heating, ventilation and air-conditioning systems
Developed using the ISaGRAF® programming environment

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Features

- Freely programmable according to IEC 61131 using ISaGRAF®
- Six programming languages
    - Ladder Diagram (LD)
    - Function Block Diagram (FBD)
    - Structured Text (ST)
    - Instruction List (IL)
    - Flow Chart (FC)
    - Sequential Function Chart (SFC)
- Predefined default functions/function modules (see ISaGRAF® documentation)
- Over 50 special functions/function modules for extensive program generation in HVAC applications
    - P, PI, PID controllers
    - 3-step output
    - Read holding register
    - Read coil
    - 12 defined time schedules
    - Read keys
    - Create menu for display
- Universal inputs individually configurable
- Sensor calibration for each resistance input
- Binary inputs can be added to the error status register
- Connection to Modbus also possible over modem
- Fax or SMS alarms configurable
- Inputs/outputs of max. 20 TROVIS 51xx devices can be read into an application over LON for processing
- Control of max. 60 binary outputs per application (5 x TROVIS 5171, connected over LON)
- Approx. 700 LON standard network variable types supported

Fig. 1 · TROVIS 5171 Control and Processing Unit

Data Sheet   **T 5171 EN**

Operation

All five operating elements are located in the front panel of the device. The front panel is protected by a Plexiglas door.

Icon	Key	Description
	Changeover key	Change from operating level to configuration and parameter level
	Reset key	Reset all freely accessible function blocks and parameters to their default values (factory defaults)
↑ ↓	Cursor keys	Navigate through all levels, adjust function blocks and parameters
✳	Enter key	Open levels, confirm and save inputs

The device provides a display level and configuration level.

Display

The INF levels contain information about the status of the device.

INF level	Sublevel	Description
1	AI	Measured values of the connected resistance sensors [°C]
	BI	Status of the binary inputs (ON/OFF)
	AO	Output value of the two analog outputs [V]
	BO	Status of the binary outputs (ON/OFF)
	END	Return to operating level
7	Parameter	LON
	END	Return to operating level
8	FSR1/2	Error status registers 1 and 2
	BRUCH	Sensor breakage information
	END	Return to operating level
9	Parameter	Modbus information
	END	Return to operating level

Configuration

Functions and parameters are available in the following sublevels.

Group	Description
CO5	Higher-level functions
CO6	Configure universal inputs
CO7	Functions for LON communication
CO8	Add status of the binary inputs to the error status register
CO9	Functions for Modbus and meter bus communication (M-Bus)
PA5	System date and time
PA7	Parameters for LON communication
PA9	Parameters for Modbus and meter bus communication (M-Bus)

Electrical connection and installation

The device consists of the housing and the back panel. The electronics are integrated into the housing. The back panel contains the terminal block. Two cores with 0.75 mm² each can be connected to each terminal. For wall mounting, fasten the back panel with the terminal block to the wall. After installing the connecting lines, plug on the housing.

For panel mounting, insert the housing into the prepared panel cut-out and secure it. After installing the connecting lines, plug on the back panel.

Dimensions in mm

Panel cut-out:
138 x 91
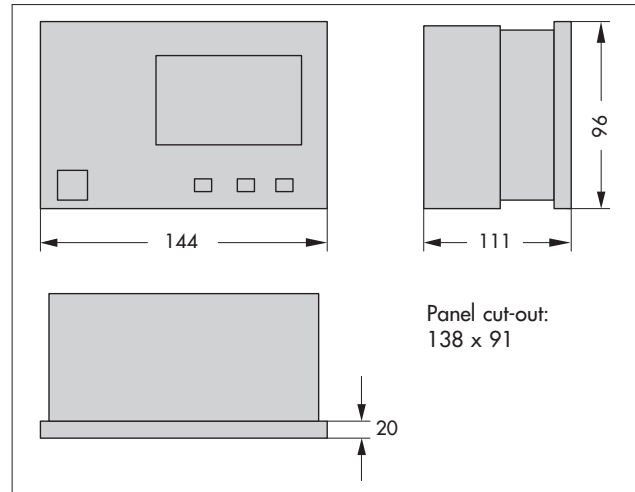
Ordering text

The device is available with or without LON interface.

TROVIS 5171 Control and Processing Unit with/without LON

Accessories

ISaGRAF® programming environment 1400-7621
Programming cable   1400-7620
Communication cable RS-232   1400-7419
Cable converter RS-232 to RS-485   1400-7308

The communication cable is used to load the operating system over the RS-232 interface.

The programming cable is used to load the application over the RJ-45 interface integrated into the front panel.

Technical data

Inputs	17 universal inputs, individually configurable as
	  – Resistance input (Pt 100, Pt 500, Pt 1000, Pt 2000, Ni 200, Ni 1000, Ni 2000, PTC, NTC, 1-2 kΩ)
	  – Current input (0/4 to 20 mA) with 50 Ω parallel resistor
	  – Binary input, floating
	  – Model no. 5171-0003 and higher: voltage input 0 to 10 V
	2 binary inputs (BE1, BE2) functioning as counters for 0 to 5000 Hz pulses
	2 analog inputs (0 to 10 V), non-floating in pairs

Outputs	10 binary relay outputs, non-floating in pairs, 2 A / 250 V AC 2 low-voltage binary outputs, 100 mA / 50 V DC 2 analog outputs (0 to 10 V), non-floating in pairs (max. load > 4.7 kΩ)
Interfaces	1 RS-232 1 meter bus 1 LON
Supply	230 V AC, 48 to 62 Hz
Power consumption	8 VA
Temperature	Ambient: 0 to 40 °C Storage: −20 to 60 °C
Degree of protection	IP 40
Class of protection	II
Degree of contamination	2
Overvoltage category	II
Humidity rating	F
Noise emission	According to EN 61000-6-3
Noise immunity	According to EN 61000-6-1
Noise suppression	According to DIN VDE 0875
Weight	Approx. 0.6 kg

Terminal assignment

30	BE1, AE1	
29	BE2, AE2	
28	BE3, AE3	
27	BE4, AE4	
26	BE5, AE5	
25	BE6, AE6	
24	BE7, AE7	
23	BE8, AE8	
22	BE9, AE9	
21	BE10, AE10	
20	BE11, AE11	
19	BE12, AE12	
18	BE13, AE13	
17	BE14, AE14	
16	BE15, AE15	
15	BE16, AE16	
14	BE17, AE17	
13	AE_GND	
12	AE18	0...10V
11	AE19	0...10V
10	GND	
9	AA_GND	
8	AA1	0...10V
7	AA2	0...10V
6	COM	
5	BA1	BA1
4	COM	
3	BA2	BA2
2	LON(Free Topology)	
1	LON(Free Topology)	

MODBUS

RS 232

Note!
If the universal inputs are used as current or voltage inputs, terminal 13 must be used as ground GND (not terminal 10).

L1	31	
N	32	
COM	33	
BA3	34	BA3
BA4	35	BA4
COM	36	
BA5	37	BA5
BA6	38	BA6
COM	39	
BA7	40	BA7
BA8	41	BA8
COM	42	
BA9	43	BA9
BA10	44	BA10
COM	45	
BA11	46	BA11
BA12	47	BA12

50	49	48

M-Bus

N

Power supply 15 V

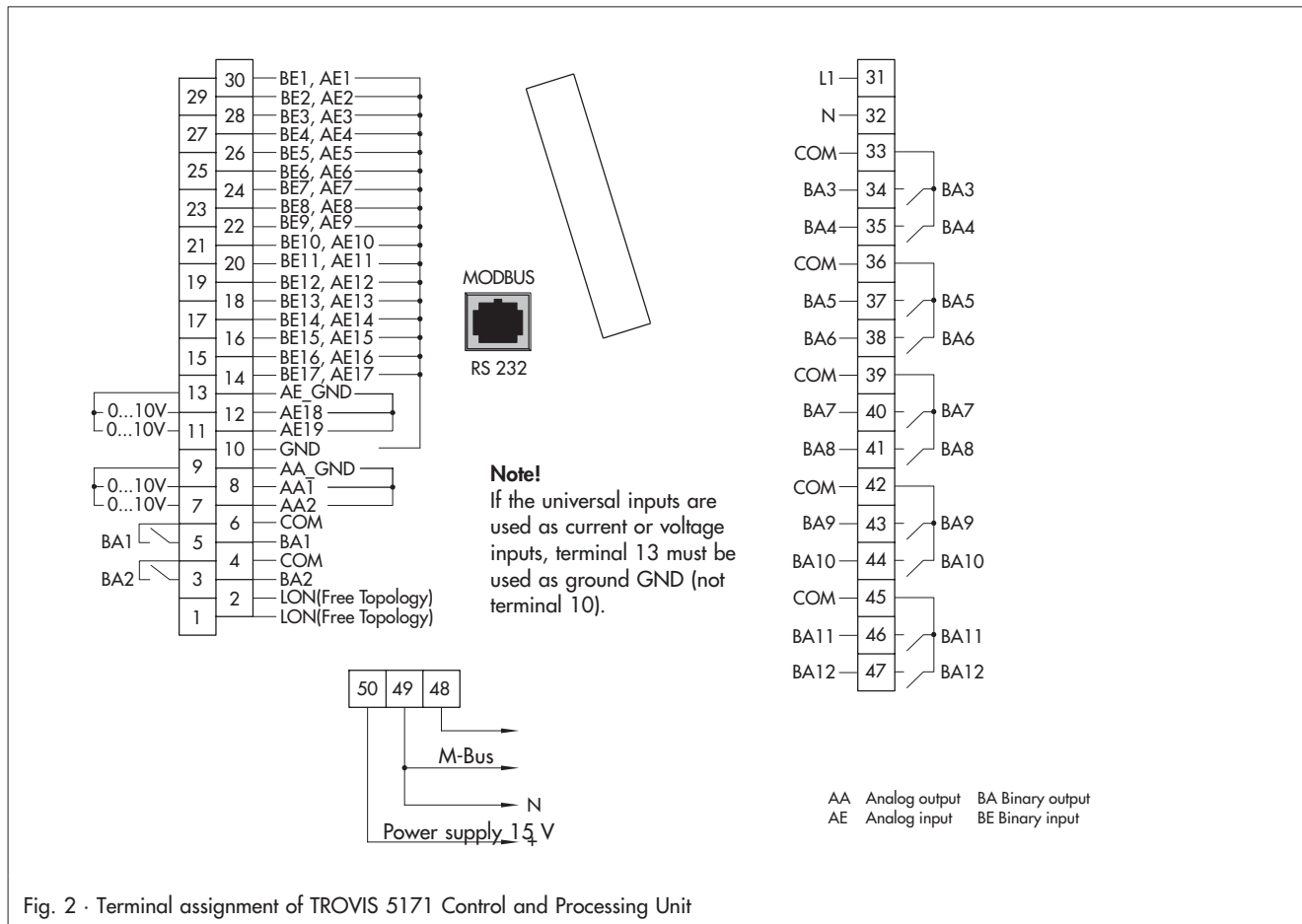|			
AA	Analog output	BA	Binary output
AE	Analog input	BE	Binary input

Fig. 2 · Terminal assignment of TROVIS 5171 Control and Processing Unit

T 5171 EN