Protronic 500/550

Versatile controller with powerful PLC functionality, extensible with hardware modules

10/62-6.15 EN

Protronic 500

Protronic 550

- **1...4 channel fixed-value, ratio, override and cascade controller with P, PI, PD or PID characteristic**
- **Dead time algorithm (Smith predictor)**
- **Spray-water protected front panel IP 65**
- **Clearly laid-out LCD and analog displays for process variable, set point and controller output**
- **Basic unit with 2 analog inputs, 1 analog output, and 4 digital inputs/outputs**
- **Universal input for temperature sensor**
- **Filtering, linearization and square-rooting of the input signal**
- **Ramp rate for set point and output signal**
- **Programmer and program controller**
- **High and low limitation for set point and output signal**
- **Preconfigured input signal connection for the applications shown on page 13**
- **Analog or switching controller output**
- **Self-setting of parameters and parameter control**
- **Access bar for 'Parameter setting' and 'Configuration' by means of password or digital input**
- **Additional plug-in modules for analog and digital inputs and outputs**
- **Custom configuration with function block diagram or instruction list**
- **Serial interface for parameter setting and configuration as standard**
- **Buscapable RS 485 interface for Modbus or Profibus for connection to higher-level systems, optional**
- **Rapid lateral data exchange (187.5 kBaud) between up to 6 controllers via the interface module**
- **Data storage in Flash-EPROM**

Technical data

Description

The 1...4 channel process controllers Protronic 500 and Protronic 550 are universally usable models of the Protronic series. They can be operated as process specific single units or in a system network with other Protronic controllers or in conjunction with higher-level systems.

The non-upgradable Protronic 100 is visually identical to the Protronic 500, described in Data Sheet 62-6.11 EN.

The Protronic 500 and Protronic 550 models differ only in their front control panels.

Protronic 500

This front panel distinctly shows the current measured values and operating modes, from a long distance, in illuminated displays. For operation, all information is clearly presented on an LC display.

Protronic 550

The Protronic 550 has a graphical front control panel. On a graphical display with 108 x 240 dots a large amount of different information can be shown. By means of keys a parallel display of several control channels or the time-related characteristic of variables can be selected.

The basic model Protronic 500/550 has ...

... a universal input. Without modification of the unit hardware, thermocouples, Pt100 resistance thermometers, and also standard signals 0/4...20 mA can be connected. When non-linearized temperature transmitters are used, linearization is carried out in the controller. The linearization tables for all standard sensors are stored in the unit.

... an mA input, which is usable as a disturbance variable or set point input. In step controllers this input can be used for position feedback signal.

... an mA output for the positioning signal or other values, e.g. for set point and actual value.

... four binary inputs/outputs. These inputs/outputs are user-configurable as inputs or outputs. They are therefore optionally usable as controller outputs or alarm value outputs, but also as inputs for switchover in the controller (e.g. manual/automatic).

… a front-panel TTL interface for connection of a parameter setting and configuration PC. This facilitates the necessary adjustments during commissioning.

Hardware extensions
... 7 module slots for expansion of the functions
... 1 slot for memory card (front panel)

Front control panel

The front control panel gives information on the state of the process and permits specifically-targeted intervention in the process sequence. Illuminated displays, which can also be seen from a distance, indicate the process state. Digital displays and cleartext information permit precise reading and accurate setting of set point and correction values.

Programmer

Every unit has a configurable programmer which provides a time-dependent set point. Up to 10 programs with 15 segments each can be stored in the unit.

Controller outputs

Two-position controller, PID characteristic without or with leading contact for high/low/off levelling.

Controller for heating/off/cooling, optionally with two switching or one continuous and one switching output.

Step controller for motorised valve control.

Continuous controller, optionally also split-range output with two continuous positioning signals.

Parameter setting

After entering a password, the user accesses the parameter setting level by means of a menu key. At the parameter setting level parameters for the available functions, such as controller gain K_p or time constants, can be set.

Configuration

Configuration can be effected in two ways:

List configuration

The menu key accesses the password-protected configuration level. There the standard functions are selected from a list provided in the unit. As an alternative to the user keyboard, the selection can also be made by way of the PC program **IBIS-R+**. This especially simplifies the setting procedure if several units are to be set at the same time (see Data Sheet 62-6.70 EN).

Free configuration

Appropr. prepared models allow for customer-specific configuration, i.e. functions beyond the standard functions of the controller.

The PC program IBIS-R+ enables a graphical programming with function block diagrams for realising any special calculation or PLC functions.

Retrofitting the plug-in Confi IC allows subsequent free configurability.

Technical data

Inputs

Common data:
without electronical isolation
Resolution ≤ 0.01 %
Accuracy (referred to nominal range) ≤ 0.2 %
Temperature effects ≤ 0.2 %/10 °C
Hardware input filter limit frequency 7 Hz

Permissible common-mode voltage against device ground
≤ ± 4 V DC

Permissible differential-mode voltage U_{ss} (50 Hz):
50 mV_{ss}

Analog:
Universal input AI01
used for standard signal
0/4...20 mA at 50 Ω ±1 %

Overcurrent/polarity reversal protection
up to ± 40 mA

Linearization, square-rooting
configurable

at 4...20 mA
Line break monitoring with configurable reaction

used for thermocouples

Types	Temperature range	Voltage range	Typical accuracy
J	-200...1200 °C	77.43 mV	≤ 0.2 %
E	-200...1000 °C	85.18 mV	≤ 0.2 %
K	-200...1400 °C	61.53 mV	≤ 0.2 %
L	-200...1000 °C	78.21 mV	≤ 0.2 %
U	-200... 600 °C	40.00 mV	≤ 0.3 %
R	0...1700 °C	20.22 mV	≤ 0.5 %
S	0...1800 °C	18.72 mV	≤ 0.5 %
T	-200... 400 °C	26.47 mV	≤ 0.4 %
B	0...1800 °C	13.24 mV	≤ 0.6 %
D	0...2300 °C	36.92 mV	≤ 0.4 %

Reference junction compensation
internal or external: 0, 20, 50 or 60 °C

Internal reference junction

Error limit	± 1 °C/10 K
Reference temperature	22 °C ± 1 °C
Ambient temperature	0...50 °C

Sensor break monitoring
with configurable reaction

Used for resistance thermometer Pt100 DIN

Measuring range
-200.0...+200.0 °C
-200.0...+800.0 °C

Measuring current
≤ 1 mA

Measuring circuit: 2-wire circuit to 40 Ω line resistance
Line balancing: by software

3-wire circuit: for symmetrical lines up to 3 x 10 Ω

4-wire circuit: sensor short-circuit and break monitoring with configurable reaction

used for resistance teletransmitter (potentiometer)
Measuring ranges
75...200 Ω; 750...2000 Ω

Measuring current
≤ 1 mA
other data as resistance thermometer

Analog input 2 (AI02)
Input for mA signals, technical data as AI01, but without electronical isolation.
0...10 V as option (see Code No. 310).

binary:
4 binary inputs/outputs
Direct/reverse function configurable

Input DIN 19240	Rated signal V DC	Voltage range (V)	Current range
Rated level	24	20.4...28.8	approx. 1 mA
1-signal	24	13.0...30.2	approx. 1 mA
0-signal	0	- 3.0... 5.0	< 0.2 mA

Output DIN 19240	Rated signal V DC	Voltage range (V)	Current range
Rated level	24 ext.	20.4...28.8	100 mA
1-signal	24	13.0...30.2	0...max. mA
0-signal	0	- 3.0... 5.0	0...0.15 mA

Switches off in case of overload.
Switching frequency ≤ 8 Hz

Outputs

Analog:
Control output or retransmission
0/4...20 mA at max. 750 Ω, short-circuit and open-circuit proof

Control range
0...≥ 21 mA

Load-dependency
0.1 %/100 Ω

Resolution
≤ 0.01 %

binary:
see inputs

Transmitter feed:

Output voltage
20...24 V DC, 100 mA, short-circuit proof

Load monitoring
Output automatically cuts off on overload

Programmer

10 programs can be stored
each program:
15 segments
Set point in physical units
Segment time 0...99:99:9 hours, four digital tracks

Technical data

Serial interfaces

TTL interface accessible after removing front panel module for connection to PC via TTL/RS 232 converter (Catalog Number 62695-0346270) with fixed telegram format matching parameter setting and configuration program IBIS-R+ (see Data Sheet 62-6.70 EN).

Bus capable RS 485 interface retrofittable (see modules)

CPU data

Measured value and correction value resolution
≤ 0.01 %

Cycle time
Protronic 500 ≥ 45 ms (master setting without add. modules)
Protronic 550 ≥ 50 ms (master setting without add. modules)

Data backup
Flash-EPROM; optionally on memory card

Power supply

115 to 230 V AC (90...260 V), 47...63 Hz
Power consumption:

Protronic 500 without modules	9 VA (6 W)
Protronic 550 without modules	12 VA (9 W)
Max. component mounting	+ 12 VA (9 W)
Power failure bridging	≥ 150 ms at ≥ 180 V AC

24 V UC

24 V DC	-25...+30 %, Residual ripple ≤ ± 3 V_{ss}
24 V AC	-15...+10 %, 47...63 Hz

Power consumption:

Protronic 500 without modules	10 VA (7 W)
Protronic 550 without modules	13 VA (9 W)
Max. component mounting	+ 13 VA (9 W)
Power failure bridging	≥ 20 ms at 0.85 x U_{Nenn}

Power factor cosφ = 0.7

Absicherung
Das Gerät benötigt keine externe Absicherung der Energieversorgung

Environmental conditions

Climatic class
3K3 to EN 60721-3-3 (KWF to DIN 40040)

Ambient temperature
0...50 °C

Storage and transport temperature
-20...70 °C

Relative humidity
< 85 %, short-term to 95 %, no condensation

Minimum atmospheric pressure: 80 kPa

Electromagnetic compatibility

Meets protection requirements of EMC directive 89/336/EEC, 5/89

Interference resistance EN 50082-2, March 1995 (i.a. IEC 801)

Interference emission EN 50081-1, 1/92
(referred to: EN 55011, class B)

Industry standard to NAMUR NE 21 T.1, May 1993

Connection, case, safety

Degree of protection to DIN EN 60529

Front panel:	IP 65
Case:	IP 30
Terminals:	IP 20

Electrical safety

Class of protection 1 to EN 61010 T.1 (VDE 0411 T.1, March 1994)

Clearances and creepage distances as per EN for overvoltage category 3, degree of contamination 2

All inputs and outputs, including the interface and the transmitter feed are functional extra-low voltage circuits to DIN VDE 0100, part 410. The safe isolation of these circuits meets the requirements to DIN VDE 0106, part 101.

Mechanical stress features

to DIN IEC 68, part 2-27 and 68-2-6
Shock 30 g/18 ms; Vibration 2 g/0.15 mm/5...150 Hz

Case dimensions
Front panel 72 mm x 144 mm
Installed depth 272 mm

Panel cutout
68 mm x 138 mm to DIN 43700

Mounting
in panel
Horizontal high-density construction possible
Vertical spacing 36 mm
Fixing with straining screws at top and bottom

Electrical connections

Plug-in screw terminals
for wire or stranded wire to 1.5 mm^2, coded

Power supply
2.5 mm^2

No shielded cables required – except for interface leads

Mounting orientation
any

Weight
1 kg without modules
each module approx. 40 g,
Relay module approx. 80 g

Scope of supply and delivery

2 straining screws, operating manual and plug-in screw terminals

Technical data

Modules

With few exceptions, the modules can be run at all slots (see table page 11). The controllers identify the inserted modules automatically.

Analog inputs

Module AE4_MA for standard signals

4 inputs
0/4...20 mA with electronical isolation

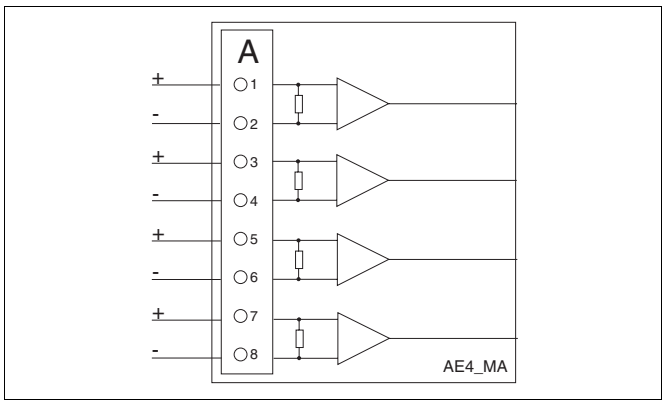
Input resistance approx. 50 Ω

Signal resolution ≤ 0.01 % for 20 mA

Permissible common-mode voltage ≤ ± 4 V against device ground

Permissible differential-mode voltage 50 mV_{ss}

Destruction proof
Input current < 50 mA
Voltage between input and ground ± 50 V



Module AE4_MA-MUS
for mA or V signals, integrated transmitter feed
(pay attention to maximum power consumption, page 11)

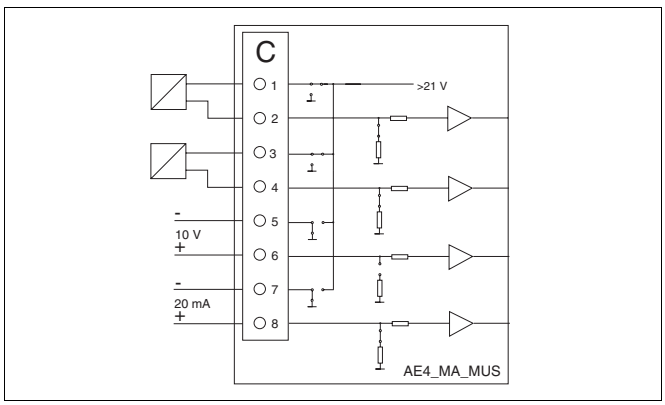
4 inputs
0/4...20 mA, indiv. switchable to 0/2...10 V with common ground

Input resistance at
mA input: approx. 50 Ω; 10 V input: 20 kΩ

Transmitter feed 20 V, 82 mA

Other data as module 4_MA

Example of an input configuration



Module 4_MV for thermocouples

4 inputs
-10...80 mV, with electronical isolation

Signal resolution
20.000 for -10...80 mV

Input resistance
approx. 5 MΩ

Permissible common-mode voltage ≤ ± 4 V against device ground

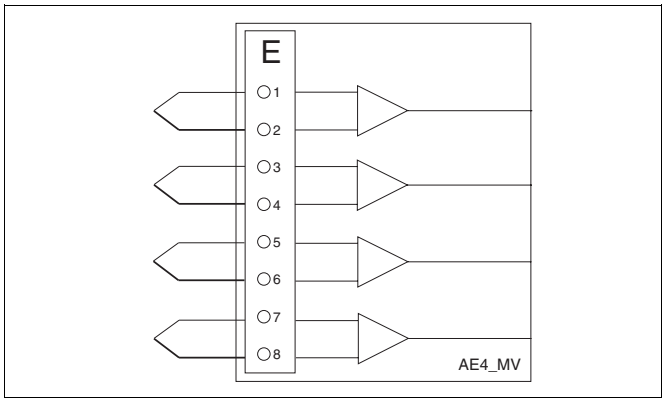
Permissible differential-mode voltage 50 mV_{ss}

Destruction proof
Voltage at one input ± 10 V
Voltage between input and ground ± 50 V

Break monitoring
configurable reaction

Reference junction compensation
configurable, internal or external 0, 20, 50 or 60 °C

Linearization configurable like AI01



Module AE2_MA/MV-TR
for mA signals or thermocouple with galvanical isolation

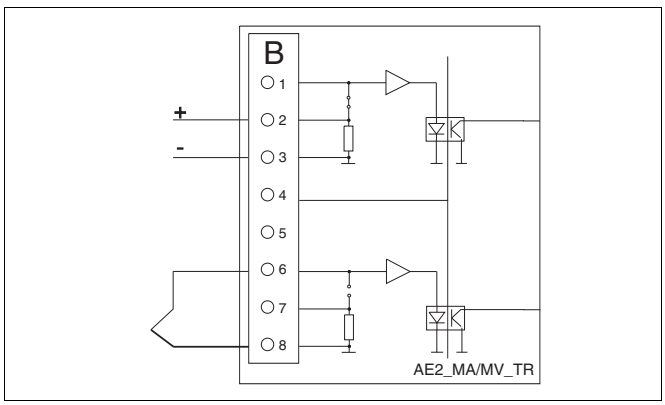
2 inputs with galvanical isolation
0/4...20 mA or -10...80 mV (changeable by means of jumpers)

Input resistance at
20 mA: 25 Ω; -10...80 mV: approx. 5 MΩ

Dielectric strength of input and output leads against each other and against grounded conductor:

Test voltage	500 V AC
Continuous operation	45 V AC

Technical data as modules 4_MV or 4_MA



Technical data

Module AE4_PT_2L for RTD 2-wires

4 inputs
for Pt100 in 2-wire circuit

Range: 0...400 Ω

Permissible differential mode voltage: : 100 mV_{ss}

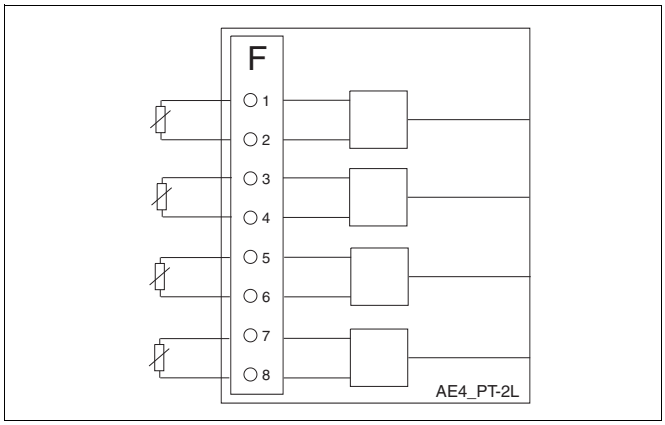
Signal resolution ≤ 0.01 % for 400 Ω

Measuring current ≤ 1.5 mA

Measuring range configurable
-200.0...+200.0 °C
0.0...+450.0 °C
-200.0...+800.0 °C

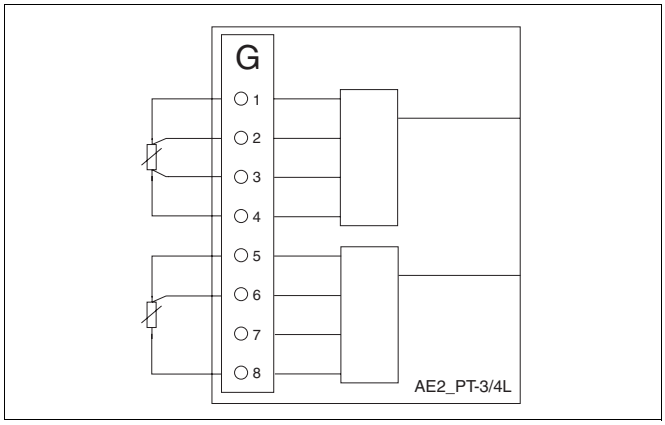
Line balancing by software

Sensor break and short-circuit monitoring
configurable reaction



Module AE2_PT-3/4L for RTD 3-/4-wires

2 inputs
for Pt100 in 3- or 4-wire circuit or potentiometer



Technical data for Pt100 as module **AE4_PT_2_L**

Potentiometer R150: 0...150 Ω

Series resistance: 0...500 Ω

Measuring current < 1.5 mA

Potentiometer R1500: 0...1500 Ω

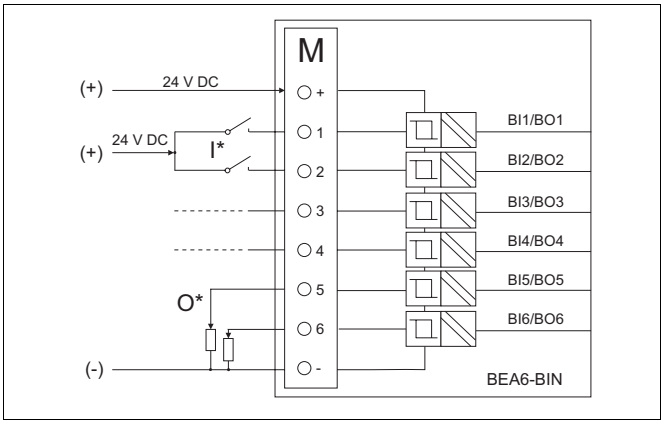
Series resistance: 0...1500 Ω

Measuring current < 0.5 mA

Binary inputs/outputs

Module BEA6-BIN

6 binary inputs/outputs, galvanical isolation
Function configurable as input or output, direct or reverse action



*) Connection example: I = binary inputs; O = binary outputs

Input DIN 19240	Rated signal V DC	Voltage range (V)	Current range
Rated level	24	20.4...28.8	approx. 3 mA
1-signal	24	13.0...30.2	approx. 3 mA
0-signal	0	-3.0...5.0	≤ 0.1 mA

Output DIN 19240	Rated signal V DC	Voltage range (V)	Current range
Rated level	24 ext	20.4...28.8	100 mA
1-Signal	24	13.0...30.2	0...max. mA
0-Signal	0	-3.0...5.0	0...0.1 mA

Technical data

Real time clock

Module BEA4_RTC

Real time clock with date, weekday and time

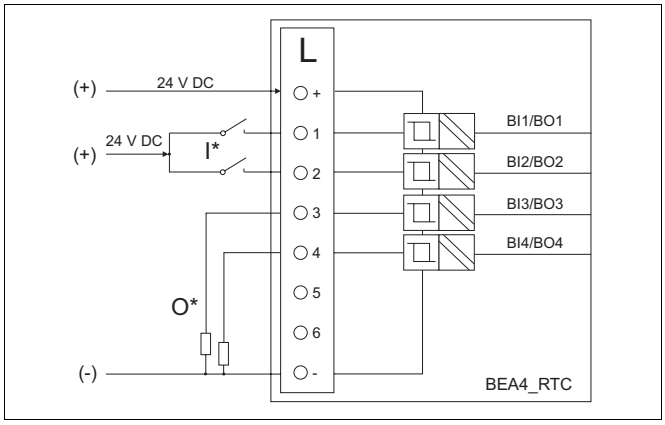
Daylight saving time and leap year switching

Year2000 compatible

Synchronisation by digital input

Battery buffer or capacitor buffer (> 72 h)

4 digital I/O, galvanical isolated, function configurable as inputs or outputs (technical data see Module BEA6-BIN)



*) Connection example: I = binary inputs; O = binary outputs

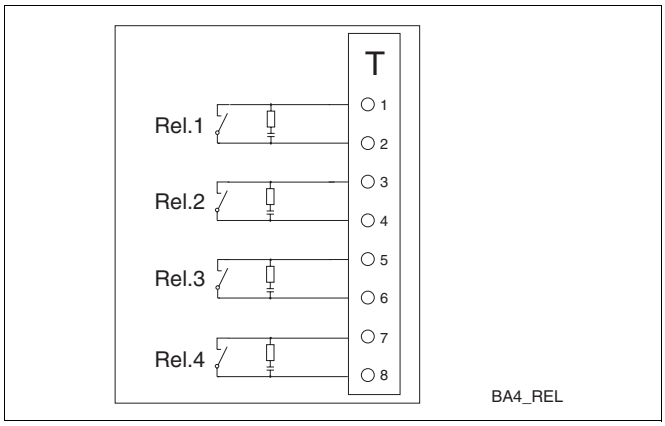
Module BA4_REL
(only usable at slot 6 and 7)

4 relays
with NO contact for max. 250 V AC, 1 A resistive load

Built-in spark-quenching: 0.022 µF + 100 Ω

For max. 250 V, max. 1 A at cosφ = 0.9

Contact material AgCdO



Module AE4_F

4 inputs for:

Frequency (1/4 inputs)

Range 1 input	0...20 kHz
Range 4 inputs	0...10 kHz
Signal resolution	1 Hz

Periode (1-4 inputs)

Range	0...20 s
Signal resolution	1 ms

Impulses (1-4 inputs)/incremental angle (2 inputs)
Range: 0...20.000 impulses/cycletime
min. impulse length: 50 µs

Absolute incremental angle (1 input)
Range: 0...20.000 impulses
min. impulse length: 50 µs

Types of input signals:

Max. 2 Namur inputs according to DIN 19234

Open circuit voltage	U_i = 9.5 V
Internal resistance	R_i = 1 kΩ
Signal range	L = 0...1.2 mA/H = 2.1...4.0 mA

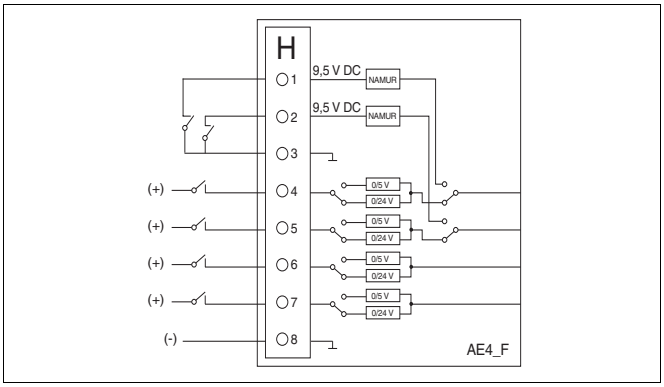
Max. 4 digital inputs according to DIN 19240 (0/24 V DC)

Input resistance	R_E > 6 kΩ
Signal range	L = -3...5 V/H = 13...20.2 V

Max. 4 digital inputs TTL (0/5 V DC)

Input resistance	R_E > 6 kΩ
Signal range	L = 0...0.8 V/H = 3.5...24 V

Accuracy: ± 0.1 %



Technical data

Analog outputs

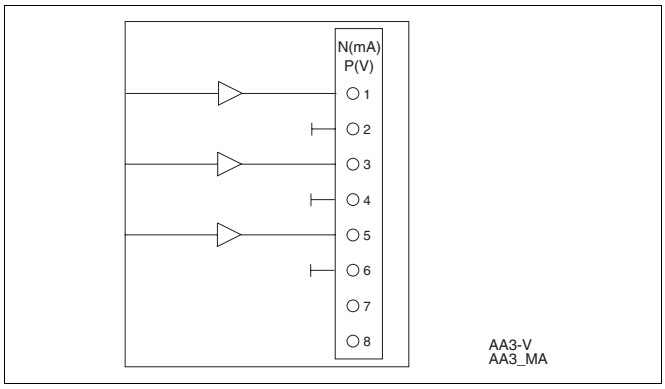
Module AA3_MA

(pay attention to maximum power consumption, page 10)

Triple current output 0/4...20 mA at 750 Ω
Signal resolution ≤ 0.02 % for 20 mA
Load dependency 0.1 %/100 Ω
Output monitoring, reaction configurable

Module AA3_V

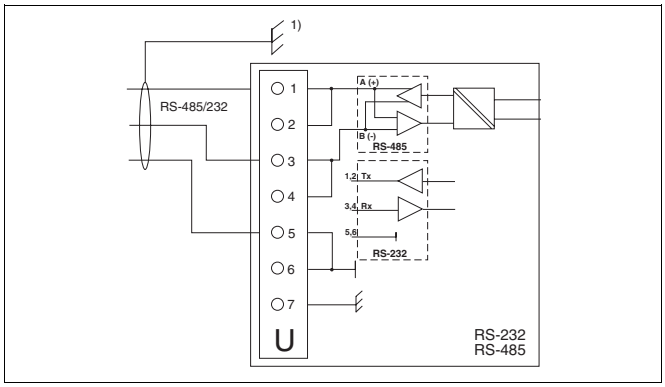
Triple voltage output 0/2...10 V ≥ 5 kΩ



Interface modules

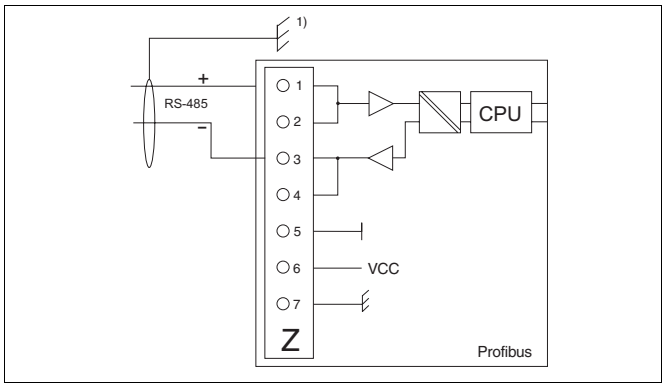
Module RS 485 or RS 232
(can only be used in slot 2)

Interface module in accordance with RS 485 or RS 232 specification. Electrically isolated. Not dependent on protocol (the protocol used is configured in the controller. Standard protocol: MODBUS-RTU. The RS 485 module also allows rapid, direct data exchange for lateral communication between up to 6 devices. Thus it is possible to expand the basis for inputs/outputs and also realise redundancy with to controllers in simple fashion. Transmission rate up to 187.5 kBaud.

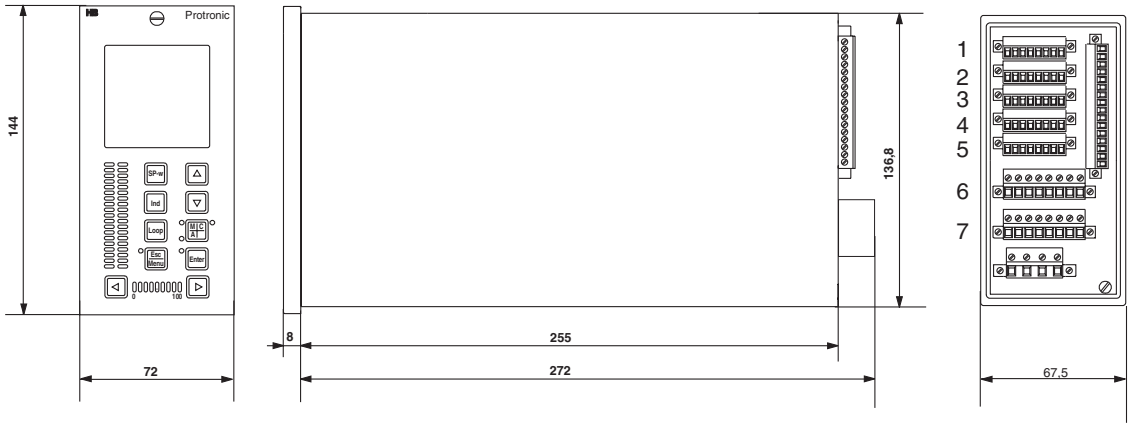


Module PROFIBUS-DP/DP-V1 (Slave)

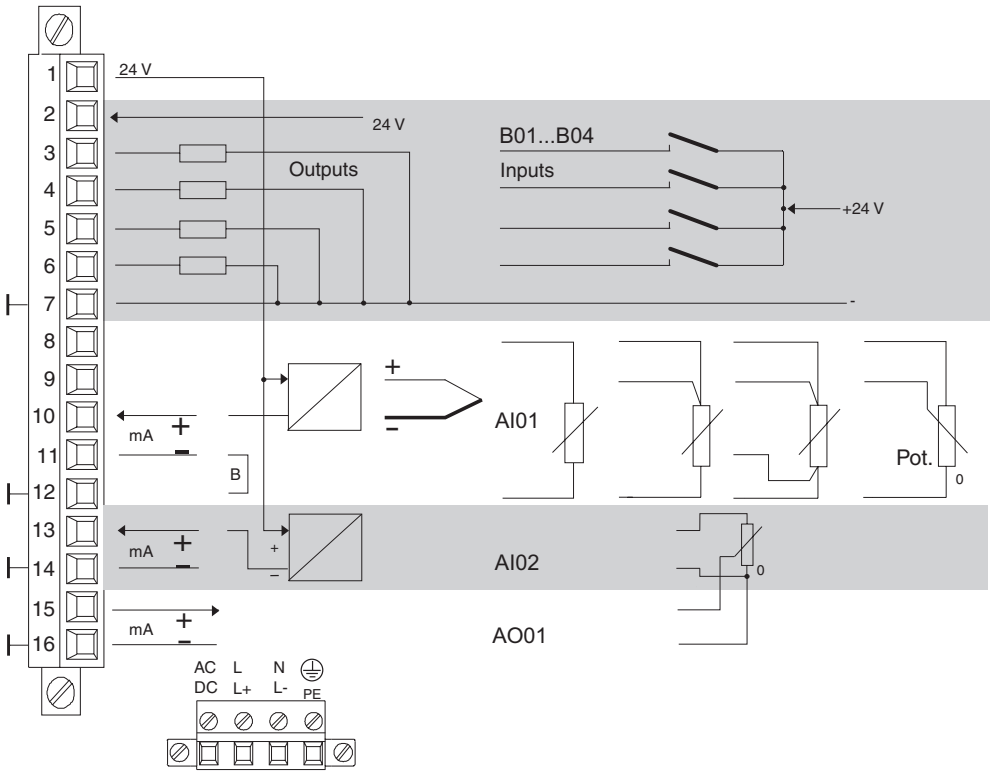
Can be used in all slots 1...7. Module with the full functional capabilities of DIN 19245, parts 1 to 4. Maximum 1 module can be used in the device. Transmission rate up to 1.5 MBaud.
Bus terminating adapter see accessories on page 11



Dimensional drawings



Connection diagrams of basic models



Connection diagram

AI01	Universal input
AI02	Additional current input
B01...B04	Binary inputs or outputs, function configurable
AO01	Analog output 1 (20 mA)
24 V	Feed for 2-wire transmitter and/or binary inputs and outputs
B	Jumper only if transmitter feed from terminal 1 is used

Ex stock versions

		Catalog No.		
Standard model Protronic 500/550 without modules, without memory card pre-configured as single-channel continuous controller				
List configuration:				
Protronic 500	115/230 V AC	V62615A-1101110		
	24 V UC	V62615A-1401110		
Protronic 550	115/230 V AC	V62615A-2101110		
	24 V UC	V62615A-2401110		
Free configuration:				
Protronic 500	115/230 V AC	V62615A-1111110		
	24 V UC	V62615A-1411110		
Protronic 550	115/230 V AC	V62615A-2111110		
	24 V UC	V62615A-2411110		

From these basic models, by configuration and, as appropriate, installation of modules, all functions can be realized (for units with memory card see page 9).

The freely configurable units can be functionally expanded specific to customer requirements with the configuration program IBIS-R+. The functions and functional modules available in the configuration program are based on Freelance 2000, and comply with IEC 1131-3.

Ordering information

	Catalog No.							Code		
Standard model Protronic 500/550 without modules pre-configured as single-channel continuous controller	**V62615A-**				**1**	**1**	**1**				
Model										
Protronic 500		1								
Protronic 550		2								
Power supply										
115/230 V AC			1							
24 V UC			4							
Freely configurable										
without (only list configuration possible)				0						
with				1						
Front colours										
According to H&B design (grey, RAL 7032)							0			
According to ABB design (light grey, RAL 9002)							1			
Modul(s) installed in item ... of the current order								300		
entered at position of current order								301		

Special features

		Code		
Input 2 (AE02) for 0/2...10 V instead of 0/4...20 mA		310		
Express handling for non-stock orders (controllers equiped with modules) within 3 workdays)		400		
Approvals				
with approval to DIN 3440		780		
with approval VdTÜV, TRD water level		775		
Instrument without display unit for wall mounting on DIN rail	Code No. on request			
Operating Manual[1)]				
German		Z2D		
English		Z2E		
French		Z2F		

[1)] 1 copy in German included in the basic supply; no specification required; extra Operating Manuals must be paid (please specify number)

Documentation on the configuration is in German, other languages on request!

Ordering information

Modules (add-on)
When fitting or planning the module equipment of the controller, it is neccessary to ensure that the sum of the individual module power parameters does not exceed 220.
The project verification of the process controller or the hardware editor in IBIS-R+ monitors the power limit and prevents an overload.

Accessories

Part	Designation	Catalog No.		
GSD	Device master data file for PROFIBUS DP, diskette	62695-3601109		
Bus terminating adapter		62619-0346488		

Type of modules	Designation	Mod. power param.	Code	available slots 1	2	3	4	5	6	7	Catalog No.		
Inputs													
AE4_mV	4fold thermocouple	0	E	x	x	x	x	x	x	x	62619-0346280		
AE2_mA/mV_TR	2fold thermocouple or mA with galvanical isolation	0	B	x	x	x	x	x	x	x	62619-0346250		
AE4_PT_2L	4fold Pt100 in 2-wire circuit	0	F	x	x	x	x	x	x	x	62619-0346255		
AE2_PT_3/4L	2fold Pt100 in 3/4-wire circuit	0	G	x	x	x	x	x	x	x	62619-0346281		
AE4_F[3]	4fold frequency input	50	H	x	x	x	x	x	x	x	62619-0346444		
AE4_mA_MUS	4fold 0/4…20mA / 0/2…10V with transmitter feed	84	C	x[1]	x[1]	x[1]	x[1]	x[1]	x[1]	x[1]	62619-0346441		
AE4_mA	4fold 0/4…20mA with electrical isolation	0	A	x	x	x	x	x	x	x	62619-0346254		
Binary inputs/outputs													
BEA6_BIN	6fold binary inputs/outputs	0	M	x	x	x	x	x	x	x	62619-0346282		
Real time clock													
BEA4_RTC-B[2][4]	Real time clock with battery 4fold binary input/output	0	L	x	x	x	x	x	x	x	62619-0318634		
BEA4_RTC-C[2][4]	Real time clock with capacit. 4fold binary input/output	0	L	x	x	x	x	x	x	x	62619-0318635		
Outputs													
AA3_mA	3fold 0/4...20mA	73	N	x[1]	x[1]	x[1]	x[1]	x[1]	x[1]	x[1]	62619-0346252		
AA3_V	3fold 0/2...10 V	3	P	x	x	x	x	x	x	x	62619-0346253		
BA4_REL	4fold relays	27	T						x	x	62619-0346263		
Interface													
RS 485	RS 485, not dependent on protocol, bus compatible baud rate up to 187.500 bd.	0	U		x						62619-0346257		
RS 232	RS 232, not dependent on protocol, not bus compatible	0	Y		x						62619-0346456		
PROFIBUS[2][3]	PROFIBUS DP/DPV1 (Slave)	80	Z	x[1]	x[1]	x[1]	x[1]	x[1]	x[1]	x[1]	62619-0346470		
Code-No. for alle modules: For subsequent orders of ready-fitted devices, it may be sensible to fit the modules in the works. In such cases, the Catalog No. must be supplemented as follows: Installed in item ... of the current order (state position and item)											Code-Nr. 300		

[1] Pay attention to the sum of power parameters (≤ 220)
[2] Maximum 1 module can be used in the device
[3] can only be used with devices from firmware version 01.190 (DPV1 from 01.200)
[4] can only be used with devices from firmware version 01.200

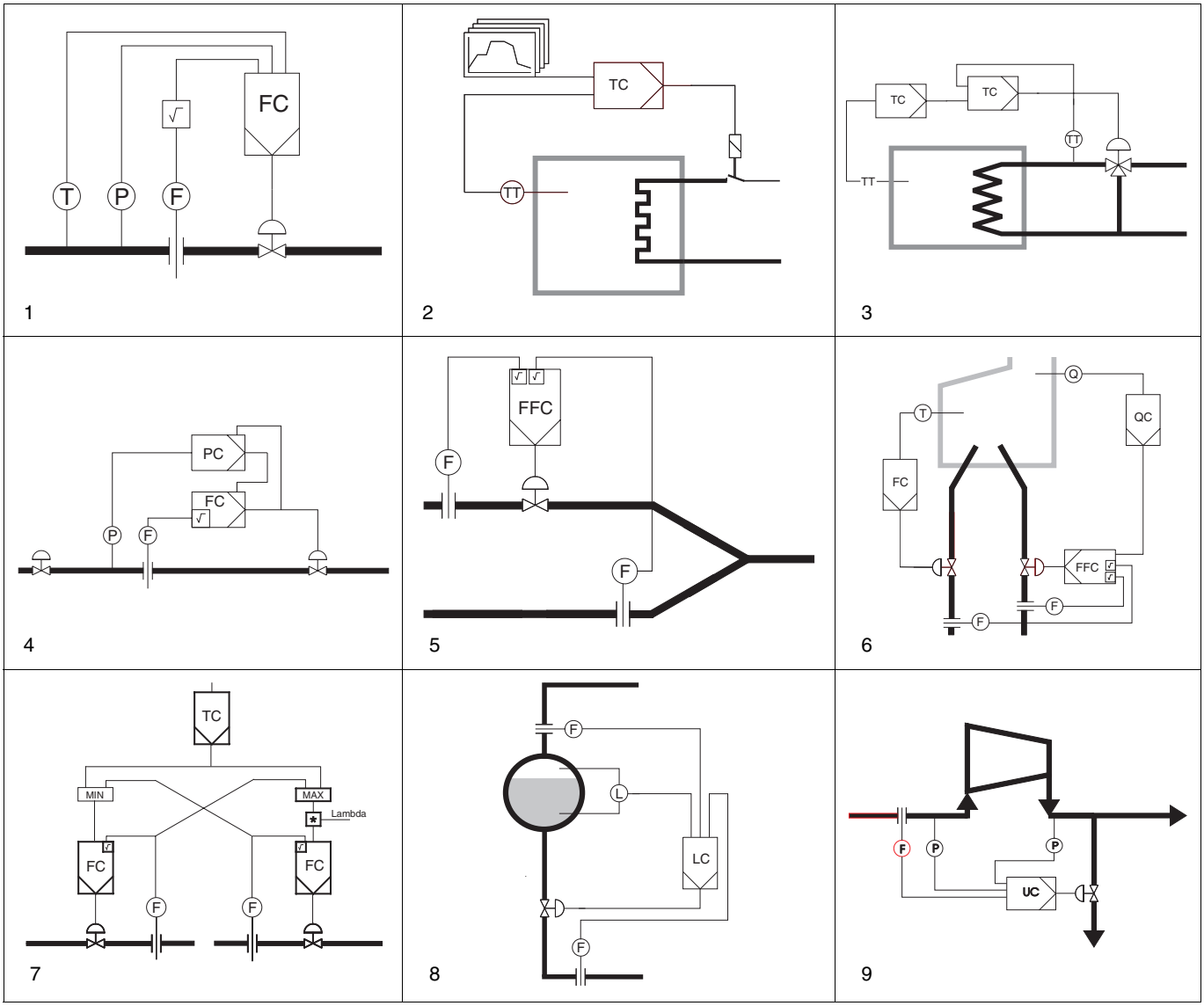
Ordering information

	Catalog No.							Code		
Configuration	**V62675A-**			**0**	**0**	**0**	**0**	**0**		
Customer-specific configuration as separate item (please enclose task definition in clear text)										
Configuration										
List configuration		1								
Free configuration (price according to time and expense)		2								
Adopted from previous order (see Code No. 302)		3								
Delivery										
Stored in unit (see Code No. 301)			1							
Disk 3,5"			2							
Memory card			3							

Special features	Catalog No.	Code		
Configuration				
Entered at position of current order (clear text)		301		
Adopted from order number and position of previous order (clear text)		302		
Accessories				
GSD Device master dafa file for PROFIBUS DP, diskette	62695-3601109			
Bus terminating adapter	62619-0346488			
Memory card	61619-0745753			
Confi IC Retrofit module for free configuration	62619-0346461			
Display unit Protronic 550	62619-0762218			
Mounting kit for remote display	62608-0337860			
Passive display unit (dummy)	62608-0337859			
Spare parts Protronic 500/550				
CPU circuit board with backplane	62608-0346260			
Power supply 230 V AC	62608-0346474			
Power supply 24 V UC	62608-0346475			
Display unit Protronic 550 (H&B design, RAL 7032)	62619-0762218			
Display unit Protronic 550 (ABB design, RAL 9002)	62608-0318655V			
Display unit Protronic 100/500 (H&B design, RAL 7032)	62619-0762219			
Display unit Protronic 100/500 (ABB design, RAL 9002)	62608-0318658V			
Case	62608-0346285V			
EPROM set	62608-0346437			
EPROM mounting tool	62608-0967978			
(Further spare parts on request)				
Operating Manual[1)]				
German		Z2D		
English		Z2E		
French		Z2F		

[1)] 1 copy in German included in the basic supply; no specification required; extra Operating Manuals must be paid (please specify number)

Applications



1 Fixed value control, e.g. flow control, optionally with flow compensation
2 Program control with up to 10 programs
3 Cascade control
4 Override control
5 Ratio control
6 Air/fuel control
7 Load control
8 Drum water level 3 element control
9 Anti surge control, usually requires additional configurations

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