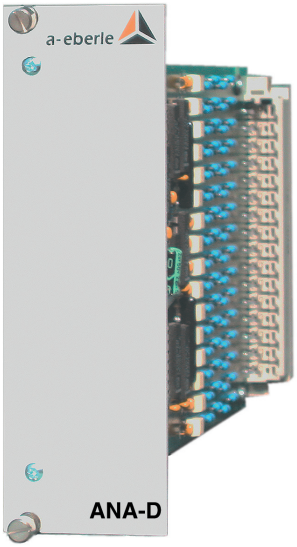
Interface Module

Type ANA-D

* *in wall mounting enclosure*
* *in mounting enclosure*
* *as plug-in module*



Application

The ANA-D interface module can be used if a REGSys™ component has an insufficient number of analogue mA inputs and outputs available.
REGSys™ components are identified by the suffix “D” behind the three letter device identification.
Example:
REG-D™, REG-DA, REG-DP, PQI-D, EOR-D, CPR-D....

The ANA-D interface card functions as an analogue input and output module and can be addressed via the COM 3 (RS 485) interface of any REGSys™ component.

The hardware version (mA input or mA output) is specified by feature “E”.
E1 refers to an ANA-D with eight analogue inputs, while E2 designates a version with eight analogue outputs.

In addition, every interface card has its own intelligence (µP). This makes it possible to implement the connection of signals directly at the module.

Programming of the module is carried out at our head-quarters according to customer requirements.

Features

- can be combined with all REGSys™ components
- 8 freely programmable analogue outputs or 8 freely programmable analogue inputs
- up to 16 ANA-Ds can be connected per REGSys™ component
- processing power for connecting the measurement quantities "on board."
- wide auxiliary voltage ranges
- all outputs / inputs are galvanically isolated from each other

Technical Characteristics

Applied norms and standards

IEC 1010/ EN61010 (VDE 0411)
CAN / CSA - C 22.2 No. 1010.1 - 92
VDE 0110
IEC 255 - 4
EN 55011 : 1991
EN 50082 - 2 : 1995
IEC 688 - 1
IEC 529
EN 50178 / VDE 0160 / 11.94 (draft)
VDE0106 part 100

CE

Analogue inputs (feature E1)

Inputs E1 ... E8

Input range X0…X2 (freely programmable)	-20 mA…0…20 mA
Electrical isolation	Optocoupler
Input resistance	1.5 V / X2
Overload range	1.4 times value
Measuring accuracy	≤ 0.5 % compared to the end value of the input signal
Common mode rejection	> 100 dB at 0…120 Hz Asymmetry of the source resistance 1.5 kΩ

Analogue outputs (feature E2)

Outputs E1 ... E8

Nominal application range of the output signal Y0…Y2 (freely programmable)	-20 mA…0…20 mA
Electrical isolation	Optocoupler
Load range	0 ≤ R ≤ 8 V/ Y2
Alternating component	≤ 0.5 % of Y2
Measuring accuracy	≤ 0.5 % compared to the end value of the input signal
Overload range	1.2 times the value
Maximum value for R → ∞	15 V

Electrical safety

Safety class	I
Degree of pollution	2
Overvoltage category	II, III

II	III
COM 3 analogue inputs & outputs	auxiliary voltage

Auxiliary voltages

50 V	230 V
COM 3, analogue inputs, analogue outputs	Auxiliary voltage

Interference emissions Group 1 class A according to EN 55011:1991

Immunity to interference

Electrostatic discharges according to EN 61000-4-2:1995
Air discharge: 8 kV
Contact discharge: 8 kV
Electromagnetic fields according to ENV 50140:1993
and/or ENV 50204:1995
80 - 1000 MHz: 10 V/m
900 ± 5 MHz: 10 V/m pulse modulated
Fast transient interferences (bursts) according to EN 61000-4- 4:1995
Supply voltage: 230 V AC: 2 kV;
Data cables: 1 kV
Conducted interferences according to ENV 50141:1993
0.15 - 80 MHz: 10 Veff
50 Hz magnetic fields according to EN 61000-4-8:1993 30 A/m

Test voltages

		Mount.	Uh	COM3
19" rack.	Mount.	-	2.2	0.35
Auxiliary voltage	Uh	2.2	-	3.7
COM 3	COM3	0.35	3.7	-
Analogue input	AI	0.35	3.7	0.5
Analogue output	AO	0.35	3.7	0.5

Note:
All test voltages are AC voltages in kV, which may be applied for 1 minute.

Power supply

Feature	H1	H2
AC (internal)	-	-
AC	85 V...264 V	-
DC	88 V...280 V	18 V...72 V
Power consumption	≤15 VA	≤10 Watt
Frequency	45 Hz to 400 Hz	-
Microfuse	T2 250 V	T2 250 V

For all feature:
Voltage dips ≤ 80 ms cause neither loss of data nor device malfunction.

Climatic stability

Temperature range	
Function (housing)	-10 °C...+50 °C
Function (plug-in module)	-10 °C...+60 °C
Transport und storage	-25 °C...+65° C

Mechanical design

Plug-in module

Front plate	Aluminium, RAL 7035 grey
Height	3 U (132.5 mm)
Width	8 T (40.6 mm)
Circuit board	160 mm x 100 mm
Weight	≤ 0.5 kg
Degree of protection	
Plug-in module	IP 00
Socket connector	IP 00
Mounting	Acc. to DIN 41494 part 5
Plug-in connectors	DIN 41612

Installation in the mounting rack

Each mounting rack is provided with space for 84 modules and thus for 84 place numbers “n”. A specific place number is the reference point for the installation of the guide and the connection elements on the rear of the mounting rack.

Place numbers

Socket connector	1	2
Guide	n	-
Screws	n	n+5

ANA-D contact assignment

Socket connector 1 Auxiliary voltage, COM 3				
Auxiliary voltage	L(+)	28	L(-)	30
	GND	32		
COM 3	Rx +	d2	Rx -	b2
	Tx +	d4	Tx -	b4

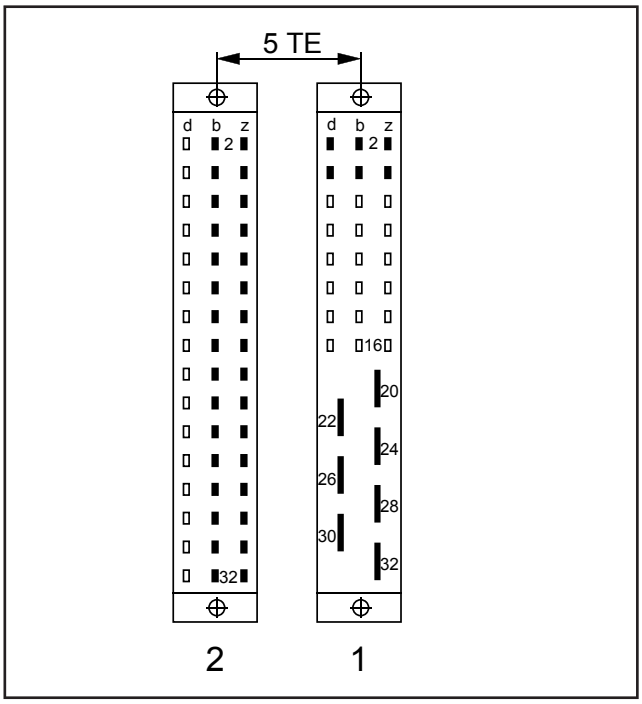


Figure 1 *Position of the socket connectors*

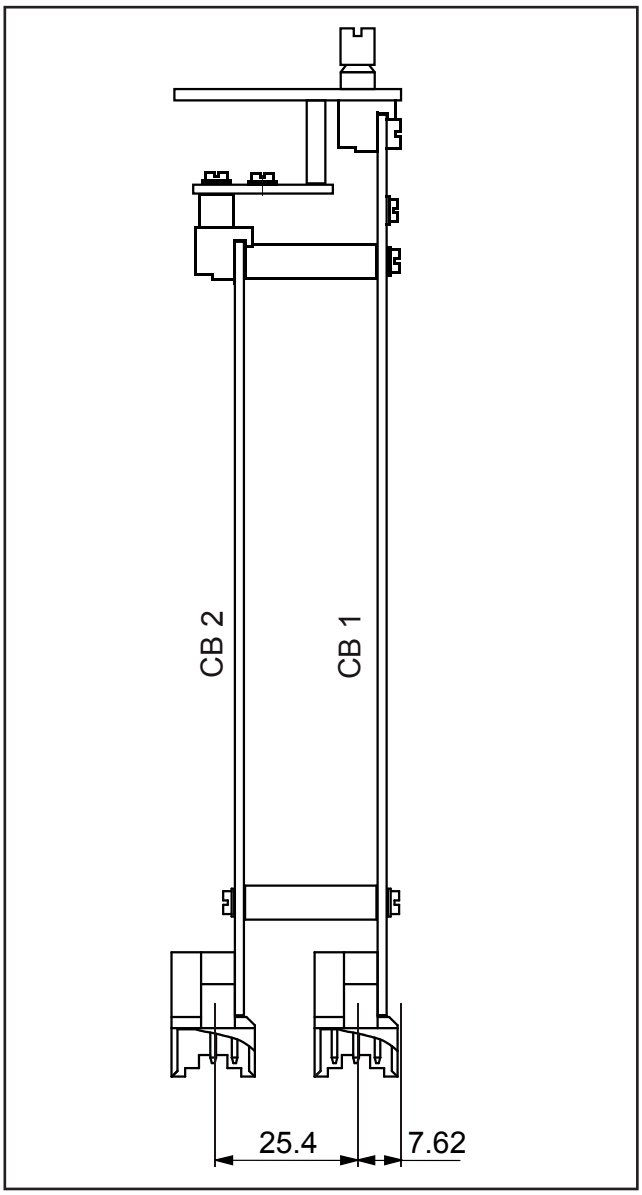


Figure 2 *Position of the blade connectors*

Socket connector 2

Analogue inputs (feature E1)
Analogue outputs (feature E2)

| Description | | |

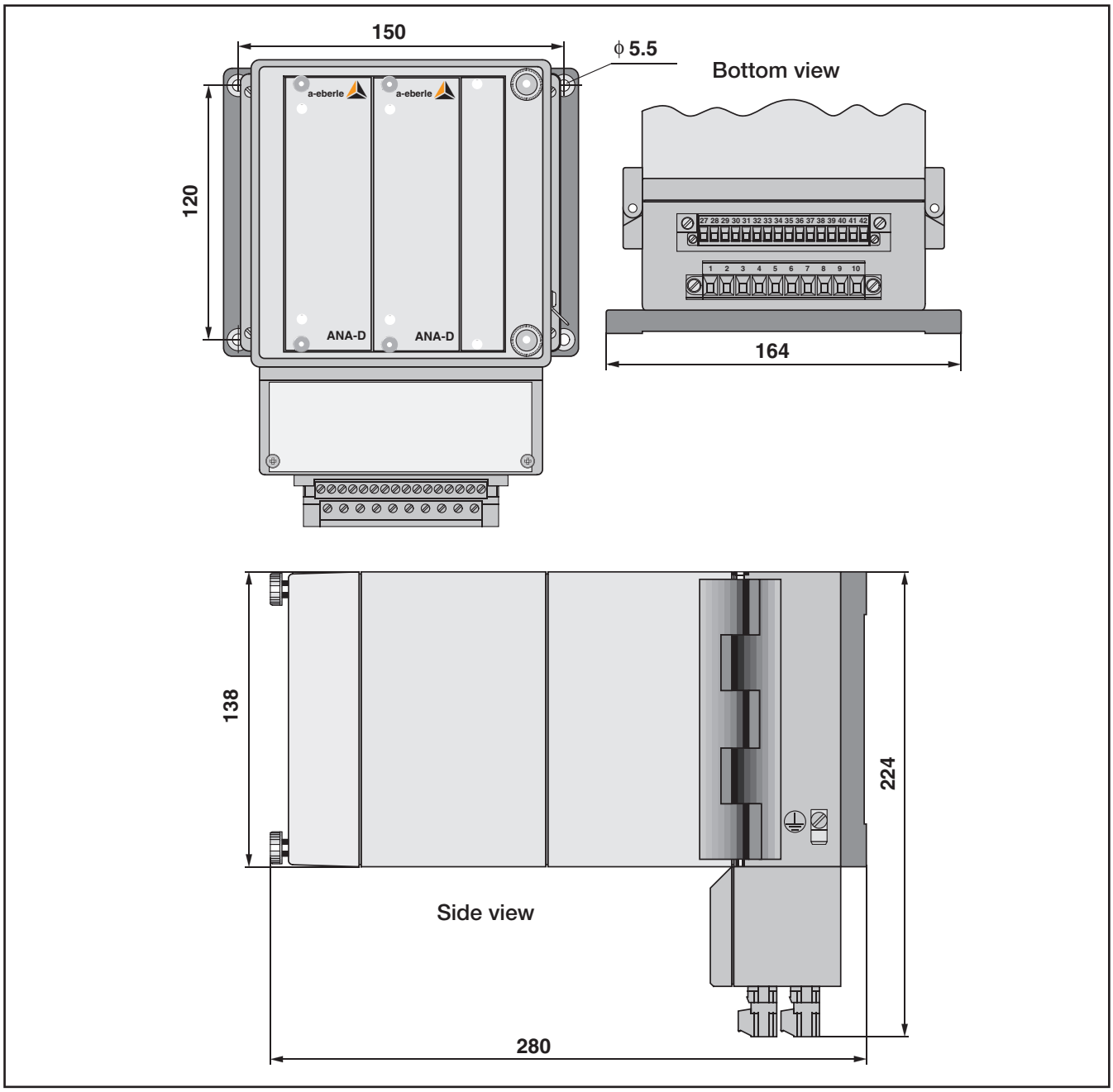


Figure 4 *ANA-D in wall mounting housing, 20 TE, feature B2*

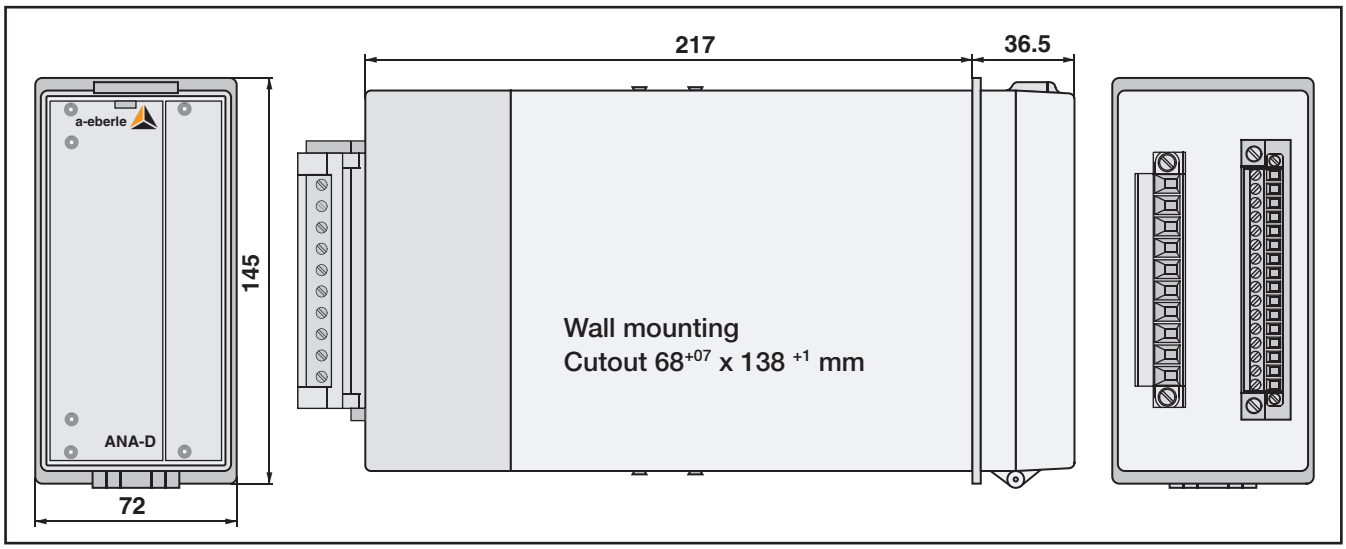


Figure 5 *ANA-D in panel mounting housing, 12 TE, feature B3*

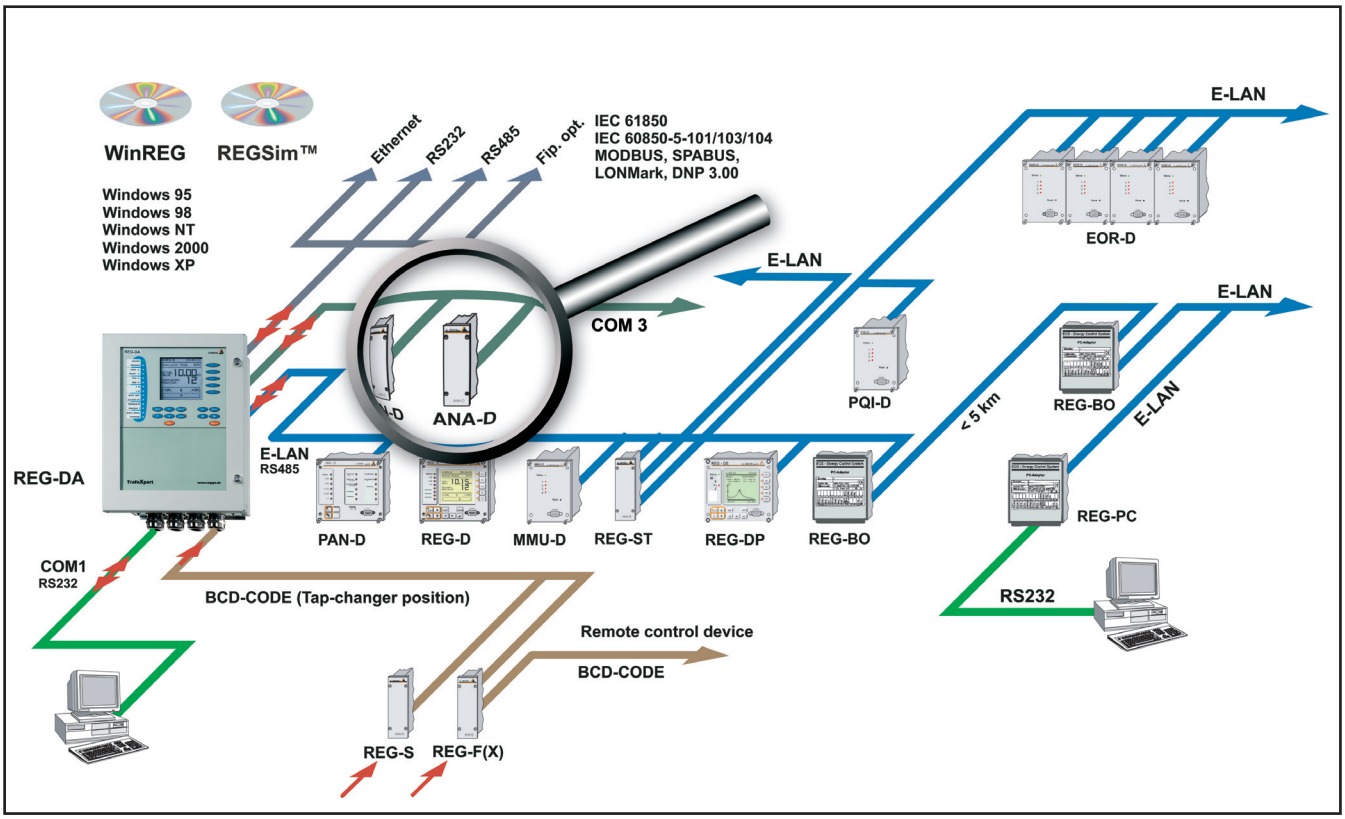


Figure 6 *REGSys™ - system overview*

Block diagrams

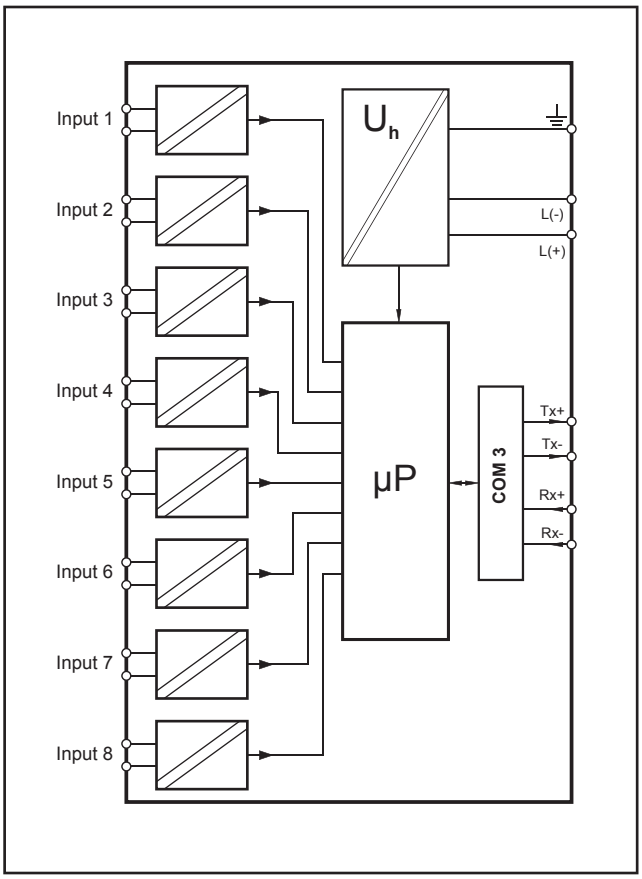


Figure 7 *Block diagram for feature E1*

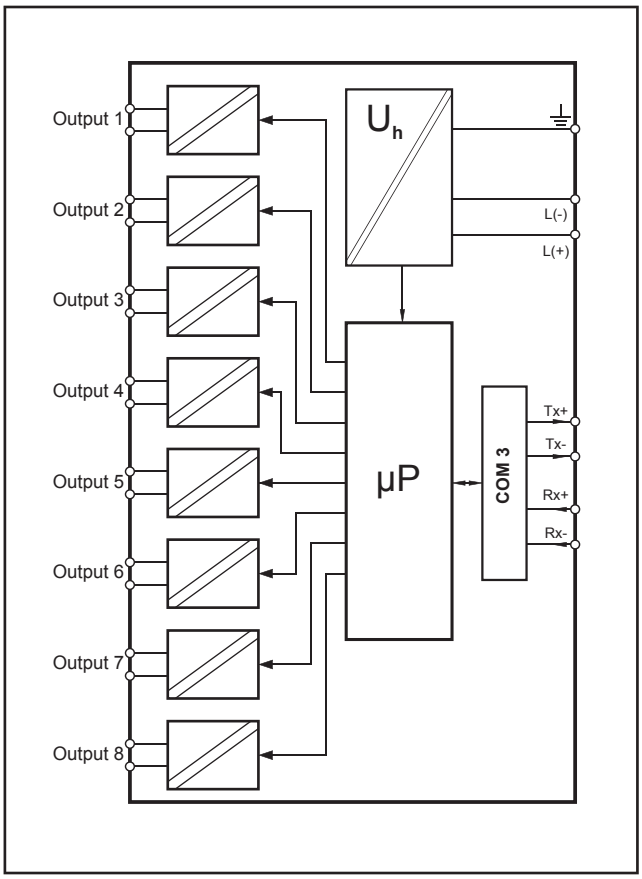


Figure 8 *Block diagram for feature E2*

Ordering information

When ordering please note:

- Only one code with the same capital letter is possible
- If the capital letter is followed by the number 9, additional details in plain text are required
- If capital letters are followed by 0, the code can be omitted.

FEATURE		CODE		
Analogue interface (8TE, 3HE) with 8 freely programmable analogue channels as well as COM 3 (RS485) for communication with a CPU from the XXX-DX series		**ANA-D**		
Design	19” plug-in module (8 TE)	B1		
	Wall mounting housing with wiring (20 TE)	B2		
	Panel mounting housing (12 TE)	B3		
Auxiliary voltage	85 V ... 110 V ... 264 V AC / 88 V ... 220 V ... 280 V DC	H1		
	18 V ... 60 V ... 72 V DC	H2		
Output quantity	(Start/end values freely programmable)			
	Current -20...0...20 mA	A92		
	other e.g. 10 V	A93		
Analogue inputs and outputs	with 8 inputs	E1		
	with 8 outputs	E2		
Operating manual	German	G1		
	English	G2		
	French	G3		
	Spanish	G4		
	Italian	G5		

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