ORDER FORM

To order e²TANGO-600, -800, -1000, -1200 protection relay, please fill in this form in accordance to FORM INSTRUCTIONS on the next page.

STEP 1

①	panel type	☐ 600	☐ 800	☐ 1000	☐ 1200		
②	main unit type	☐ J6	☐ J10	☐ J14	☐ J6H[1]	☐ J10H[1]	☐ J14H[1]
	TR measurement card type	☐ TR (standard, 5I+4U)	☐ TRS (for synchrocheck, 4I+5U)	☐ TRU (for SZR,9U)	☐ TRSG (5I+5U)	☐ TRP (5I+3Ip+4U)	
③	change the way of measurement metod(from core transformer)[2]	☐ TRC (Rogowski coils $3I_{CR}$ + 2I +4U)					
		☐ TRCZ (Rogowski coils $3I_{CR}$ + 2I + voltage sensors 3U)					
④	rated current of the measurement card	☐ 5A, 100V (dla kart TR, TRS, TRP, TRSG)	☐ 100V, 230 V (TRU)	☐ X – none (for TRC, TRCZ cards)			
⑤	binary input voltage	☐ UNI (110/230V AC/DC)	☐ 24V (24/48V AC/DC)[4]	☐ other (on consultation with the manufacturer)			
	communication ETHERNET (standard equipment in each central unit)						
⑥	COM1	☐ x-none	☐ RS485	☐ CANx2	☐ OPTOMM		
		☐ OPTOP	☐ Profibus	☐ other			
⑦	COM2	☐ x-none	☐ RS485	☐ CANx2	☐ OPTOMM	☐ OPTOSM[5]	
		☐ OPTOP	☐ Profibus	☐ other			
⑧	mounting method	☐ Z- flush	☐ N1- wall version 1	☐ N3- wall version 3	☐ N4- wall version 4	☐ M-mixed	☐ ZR-installation in a rack cabinet
⑨	panel-main unit cable length[6]	☐ S-1 m	☐ L-2 m	☐ other (on consultation with the manufacturer)			
⑩	IP protection level[7]	☐ IP4X	☐ IP54[8]				
⑪	IEC 61850[9]	☐ EX-none	☐ O-ETH fiber optics	☐ O2-ETH fiber optics with PRP	☐ O2G-ETH fiber optics with PRP + GOOSE	☐ E2-electrical	
		☐ E-ETH electrical	☐ EG-ETH electrical +GOOSE	☐ OG-ETH fiber optics +GOOSE	☐ E2G-ETH electrical with PRP + GOOSE		
⑫	language version:	☐ PL	☐ EN	☐ other (in agreement with manufacturer)			

1) W1, W2, W3 strengthened outputs
2) eg.page 18
3) 5A/1A configurable from the software level
4) universal card for voltages in the range of 24-48 V AC / DC
5) OPTOSM card required for communication with the other side in the case of line differential protection
6) in the 3rd wall mounting version, a 0,25 m long cable is used
7) degree of protection for operating panel (front side)
8) IP54 protection level available only in version with flush and mixed mounting
9) IEC 61850 communication is supported by additional communication interfaces (RJ45 or SC type) located in the operating panel

STEP 2

card type	Kod	Slot A	B	C	D	E	F	G	H	I	J	K	L	M	N
processor card CPU	-	installed in each device													
power supply card PSU - 7 binary outputs	-	installed in each device													
communication Ethernet	-	installed in each device													
8 binary inputs	8IN	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12 binary inputs	12IN	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8 binary inputs 24 V[1]	8IN24	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12 binary inputs 24 V[1]	12IN24	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8 binary outputs	8OUT	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4 binary outputs (highcurrent)	4OUTH	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4 analogue input 0-10 V	AI10	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4 analogue input 4-20 mA	AI20	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4 analogue output 0-10 V	AO10	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4 analogue output 4-20 mA	AO20	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6 PT100 temperature sensor input	PT1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3 TMP inputs (busbar temperature measurement) + 3 sensors	3TMP	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6 TMP inputs (busbar temperature measurement sensors)	6TMP	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6 arc detector input with CANbus communication + 3 arc detectors	ARC	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6 arc detector input (passive) + 3 arc detectors	ARP	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
redundancy supply card	PSU2			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
additional voltage set measurement wih transformers card (4U)[2]	TV					☐	☐								
additional voltage measurement set with sensors for synchro check[4]	TVZ					☐									
additional current measurement MV1 side[3]	TRR					☐									
additional current measurement M21 side or LV side[3]	TRR						☐								
		J6						J10				J14			

1) universal card for voltage range 24-48 V AC/DC
2) card placed in slot E, TR or TRS card required
3) card placed in slot F for differencial current measurement on the MV1 side, available for J10 and J14 units, the card is placed in two slots D and E. Transformer card required for motor differencial current measurement on the MV2 side or additional current measurement of transformer on the LV side available for J10 and J14 units, the card is placed in two slots D and F.
4) card placed in slot E, insterting TR card required

additional number of arc sensors ☐ only if the ARC or ARP card is ordered

additional requirements:

STEP 3

Your code:

e²TANGO	1	2	3	4	5	6	7	8	9	10	11	12
	A	B	C	D	E	F	G	H	I	J	K	L	M	N

FORM INSTRUCTIONS

STEP 1

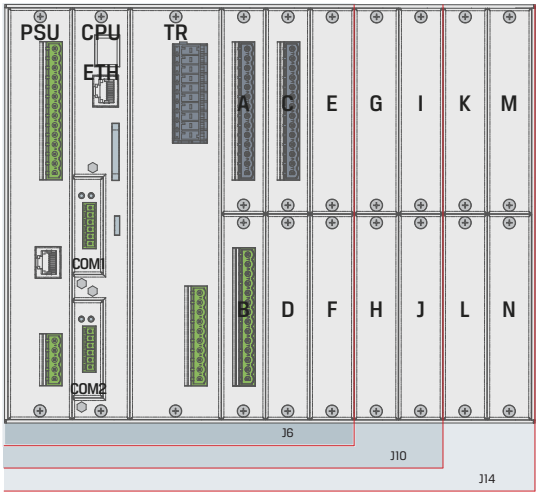
In the presented table there are the basic technical parameters of the e²TANGO-600, -800, -1000, -1200 protection relay. From each position marked with a numbers from 1 to 11 there is only one position to be selected. If you choose "other", in STEP 3 in the corresponding field, please enter the requested value.

STEP 2

In the presented table there is a list of available expansion cards and their possible installation locations in the central unit of e²TANGO-600, -800, -1000, -1200. Missing field ☐ for marking means that the card cannot be installed in a given place. Please choose from the list the ordered cards and mark with "X" a slot, in which they have to be installed. Arranging the cards has to be started from the A slot. Capacity of the units are marked appropriately with the background colour in the table.

Additional requirements have to be described in a designated area.

View of the central unit indicating the arrangement of slots for expansion cards.



STEP 3

Selected above parameters of the e²TANGO-600, -800, -1000, -1200 protection relay have to be inserted in the corresponding space. The code created in that way together other requirements or scanned order form page has to be sent along with an order to the following address:
eaz@elektrometal-energetyka.pl

Step 1 instructions

- ▭ - recommended basic configuration
- OPTOMM - multi-mode optic fibre
- N1-wall mounting version 1
- N2-wall mounting version 2
- N3-wall mounting version 3

Step 2 instructions

- ▭ - recommended basic configuration
- max 4 cards 8OUT
- max 1 card AI10 or 1 card AI20
- max1 card AO10 or 1 card AO20
- max 1 card PT1 or 1 card PT10
- maximum 1 3TMP or 6TMP card
- TRR card can only be installed in slot F in J10 and J14 units, occupy two slots D and F
- the ARP card can be placed in the device only if an ARC card is already installed
- TV card for additional voltage set measurement can only be installed in slot E; TV card can't be installed simultaneously with TRS card in the same equipment
- 3TMP and 6TMP cards for busbar tempearture measurement is aquipped with 5 m long communication fiber optic, other length on customer's request; Dimentions of the busebar must be specified as additional requirement

Example of e²TANGO protection relay configuration:

① e²TANGO-1000 panel	⑩ IP 4X protection level
② J10 main unit	⑪ standard IEC 61850
③ TRC measurement card (voltage measurement current by core transformer and Rogowski coil)	⑫ EN
④ rated current of measurement card 5A: X	Ⓐ slot A: 8IN card
⑤ universal binary input voltage	Ⓑ slot B: 8OUT card
⑥ OPTOMM	Ⓒ slot C: 12IN card
⑦ RS485	Ⓓ slot D: X card
⑧ mixed mounting	Ⓔ slot E: ARC card
⑨ 8 m cable	Ⓕ slot F: TRR card

Example of correct filled code:

e²TANGO	1000	J10	TRC	X	UNI	OPTOMM	RS485	M	8	IP4X	E	EN
8IN	8OUT	12IN	X	ARC	TRR							

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