Analogue signals converter APP03 Bu

□ isolated (1,5 kV / 1 minute)

□ user configuration over PC

□ bipolar output +/- 10V

INPUT SIGNALS	
User configuration – over PC	
CURRENT	+/- 0 – 21 mA DC
VOLTAGE	+/- 0 - 10,5 V DC
	+/- 0 - 500 mV DC
POTENCIOMETER	10Ω – 500kΩ

OUTPUT SIGNALS		
User configuration – over PC		
VOLTAGE	+/- 10,5 V DC	

APP03 series analogue signals converters for above specified industry signals are used as input interface for control systems, monitoring systems, data collection, controllers and everywhere else, where is signal conversion and galvanic isolation needed.

FUNCTION

- **□ SIGNAL CONVERSION**
- ☐ SMALL SIZE 17,5 x 90 x 60 mm
- ☐ INPUT and OUTPUT SIGNAL SELECTION by user
 - By PC (using comm.cable and SW MERCOS®) fully user adustable (eg. input 2 – 12 mA / output 1 – 5 V DC)
 - Due terminal strip wirring active or passive current output
- **□ EXCITATION POWER SUPPLY**

☐ GALVANIC ISOLATION

- Input signal from output signal
- Input signal & output signal from power supply
- Output signal & power supply from exc.supply

analogue input power supply 24VAC,DC excitation power supply 24VAC,DC 1,5kV analogue output

DESCRIPTION

APP03 signals converter works with all input and output signals in their full range. Converter configuration is performed by DIP switch on front panel or by communication software NP01_A over PC. For PC configuration is communication cable PS 01 (serial) or PU 01 (USB) needed, which galvanically isolate PC from APP 03_Bu converter.

PC communication software allows to set:

- Non-standart signals conversion
- Potenciometer end positions in full input range (0% a 100%)
- Advanced mathematical filters for signals conversion

APP 03 Bu converter is based on:

- <u>Three-level</u> isolation pwr.supply X input , pwr.supply X output , input X output , pwr.supply & output X excitation power supply
- Measuring input signal by 20-bits AD converter, signal processing by Intel MCU and if selected than mathematical filters are applied (polynomial filter, moving average), galvanic isolation and digital signal conversion by 14-bits DA converter back to analogue output signal.

POWER SUPPLY 24 V AC/DC : -15% / +20%	TECHNICAL DA	NTA
CONSUPTION max. 2 W – device is protected by reversible fuse Exc.power supply 22V @ 0mA , 19V @ 23mA INPUT RESISTANCE current input : 50 Ω (input resistor) + 25 Ω (protection posistor PTC) Voltage input : 100 kΩ current : 100 mA continous , 160 mA @ 1minute MAXIMAL INPUT OVERLOAD current : 100 mA continous , 160 mA @ 1minute MAXIMAL INPUT OVERLOAD current : 100 mA continous , 160 mA @ 1minute VOLTAGE : 48 VDC continous 48 VDC on terminal strip 3 DIGITAL RESOLUTION analogue input : 20 bits RESOLUTION analogue output : 14 bits SIGNAL RESPONSE from 0 to 100 % : 180 msec without mathematical filters ACCURACY +/- 0,1 % from full range / °C TEMP.COEFFIC. 0,005 % from full range / °C testing voltage : 1500 V DC / 1 min input vs. output ; power supply vs.input, output working voltage : 120 V DC input vs. output ; power supply vs.input, output ANALO,OUTPUT voltage output : min. 5 kΩ MAX. OUTPUT OVERLOAD voltage output : min. 5 kΩ MAX. OUTPUT OVERLOAD voltage : unlimited (short-circuit resistant) CALIBRATION valid for one year MOUNTING Plastic DIN rail box – 17,5 mm module DIMMENSIONS 17.5 x		
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OPERATING TEMPERATURE - 10 °C / +50 °C OPERATION continuos SITE ALTITUDE max. 2000 metres above the sea level ČSN EN 61326-1 article 7 (2006) ČSN EN 55011/A1/A2, article 5.2, table 3, article 6 – group B EMC immunity ČSN EN 61000-4-2,3,4,5,6	WEIGHT	69 grams
TEMPERATURE - 10 °C / +50 °C OPERATION continuos SITE ALTITUDE max. 2000 metres above the sea level ČSN EN 61326-1 article 7 (2006) ČSN EN 55011/A1/A2, article 5.2, table 3, article 6 – group B EMC immunity ČSN EN 61000-4-2,3,4,5,6	STABILISATION	5 minutes
EMC immunity max. 2000 metres above the sea level ČSN EN 61326-1 article 7 (2006) ČSN EN 55011/A1/A2, article 5.2, table 3, article 6 – group B ČSN EN 61000-4-2,3,4,5,6		- 10 °C / +50 °C
ČSN EN 61326-1 article 7 (2006) ČSN EN 55011/A1/A2, article 5.2, table 3, article 6 – group B EMC immunity ČSN EN 61000-4-2,3,4,5,6	OPERATION	continuos
EMC radiation ČSN EN 55011/A1/A2, article 5.2, table 3, article 6 – group B EMC immunity ČSN EN 61000-4-2,3,4,5,6	SITE ALTITUDE	max. 2000 metres above the sea level
CSN EN 530 177A17A2, article 5.2, table 3, article 6 – group B EMC immunity ČSN EN 61000-4-2,3,4,5,6		ČSN EN 61326-1 article 7 (2006)
Livid inflaming	EMC radiation	
influence	EMC immunity	ČSN EN 61000-4-2,3,4,5,6
	,	ČSN EN 61326-1(2006),article 6, table 2

NOTICE

□ Attention

 Excitation power supply for sensors is galvanically connected with input signal.

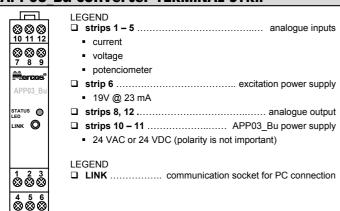


ORDER CODE

APP 03 Bu

Analogue signals converter with bipolar voltage output excitation power supply. (see order example)

APP03 Bu converter TERMINAL STRIP



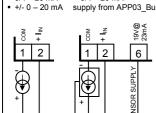
INPUT SIGNALS WIRRINGS for APP03 Bu

CURRENT INPUT

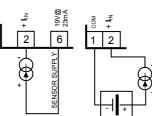
ACTIVE SENS.

Three wires

Two wires ■ 0/4 – 20 mA ■ +/- 0 – 20 mA 0/4 – 20 mA



Two wires supp. from APP03 Bu



PASSIVE SENS

Two wires

■ 4 – 20 mA

external supply

VOLTAGE INPUT

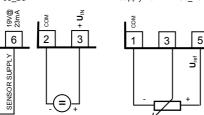
4

Two wires Three wires ■ 0 – 10 VDC ■ 0 - 10 VDC +/- 0 − 10 VDC supply from APP03_Bu

4

Two wires 0 - 500 mVDC +/- 0 - 500 mVDC

POTENCIOMETER potenciometer (three wires) 10 Ω – 500 kΩ supply from APP03 Bu

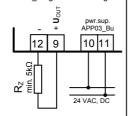


OUTPUT SIGNALS WIRRINGS for APP03 Bu

VOLTAGE OUTPUT

voltage active (=)

+/- 10 V DC APP03_Bu generates voltage



HOW TO SET APPO3 BU

Settings over PC

ATTENTION: communication socket (LINK) has the potential of input terminal strips. Galvanic isolation of communication is realized by communication cable PS 01 (PU 01).

In situation when non standart signals conversion is needed, we set on DIP switch "User defined conversion PC" option. This option allows user to set user defined input and ouput conversion. We will need communication cable PS 01 (serial) or PU 01 (USB) and communication software NP01_A, which is free for download from our webpage: http://www.mercos.cz/ Communication software allows:

- To set non standart signals conversion, in their full range
- To choose mathematical filters for environment with high EMC disturbances
- To measure, display graph or record the input signal with measured data export in *.csv format (Excel, OpenOffice Calc, ...)

LED diode STATUS

Te status LED diode is situated In the middle of front. It has red color and informs user about actual analogue signals converter status.

	a de cada de cada de control de cada d	
STATUS LED		
Continous light	Measuring mode	
Slow blinking (two times a second)	Output signal is controled by PC (output setup) and analogue signal converter does not convert signal.	
Fast blinking (ten times a second)	Analogue signal converter malfunction, please contact manufacturer.	

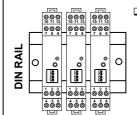
ORDER EXAMPLE

APP03_Bu input signal / output signal

- if range is not specified, default settings are: 4..20mA / +/-10 V

Non-satndart signals (inverted, special ranges - set by PC): eg. APP03 Bu 0-1V / 2-5V , APP03 Bu 10-2 mA / 2-8 V

MOUNTING EXAMPLE



□ RECOMMENDATION:

- We recommned to mount converter on DIN rail vertically with inputs down.
- In case that operational temperature is expected to be higher than 40°C, we recommned to mount converters on DIN rail with 5mm space.

