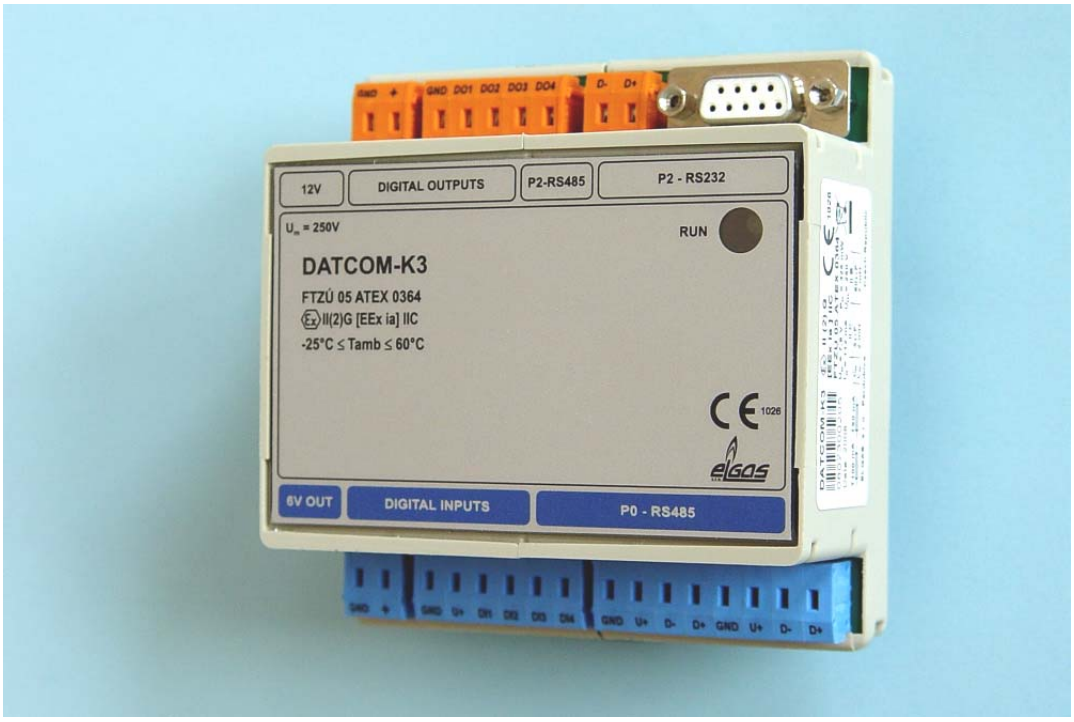
Communication module

TYPE

DATCOM-K3



- accessories for the correctors and data logger
- isolating barrier for communication device connection
- isolating barrier for digital output form connected device
- communication interface conversion RS232/ RS485
- possibility of modem connection
- external power supply for one corrector or data logger
- variation with decreased consumption

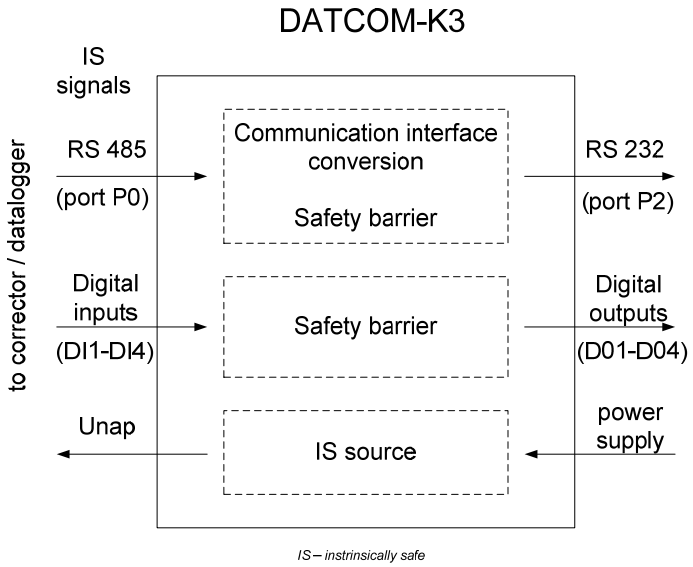
CE 1026

Technical description

DATCOM-K3 is designed as accessories for the correctors miniELCOR, maxiELCOR, midiELCOR, ELCOR-2, microELCOR-2 and electronic data logger miniDATCOM, maxiDATCOM, midi-DATCOM and DATCOM-2. The device is designed as associated apparatus from the point of intrinsic safety and the device has to be installed outside of hazardous area during operation. Safety standards and safety parameters of intrinsic safety have to be respected with regards to using the device with other devices (see chapter Technical data).

Communication module DATCOM-K3 is power supplied with direct tension 12 V.

Communication module DATCOM-K3 is manufactured into plastic box and is assembled on DIN bar 35 mm into distributor. Clamps with maximum cross-section 1,5 mm^2 are determined for connection of the cables.



Communication module provides following functions:

- communication with either one or more devices (e.g. correctors) connected with intrinsically safe (JB) communication interface RS-485 (port P0)
- safe separation of communication interface RS-485 (port P0) and conversion to communication interface RS-232 (port P2)
- safe separation (isolating barrier) for intrinsically safe digital outputs of the device
- external power supply for connected device

Main function of this communication module is to provide interface between intrinsically safe circuits (the device installed in hazardous area) and other circuits (the device installed outside of hazardous area). Module realises function of intrinsically safe separator partly for communication circuit of corrector or datalogger and also for their output circuits. Other device (such as PC, modem, etc.) may be connected to the non-intrinsically safe circuit of DATCOM-K3 and also consecutive system for processing of output pulses from correctors.

Data transmission between port P0 and P2 is transparent, communication speed and communication protocol are not changed. Likewise, signals transfer from DI1 - DI4 to clamps DO1 – DO4 are transparent.

Module DATCOM-K3 contains also intrinsically safe power supply which may be with some limitation (see further) used for power supply of one corrector or datalogger.

Communication module DATCOM-K3 is prepared for upgrade of processor board (upgrade to module DATCOM-K4 respectively DATCOM-K4/A).

Module is manufactured in two variants, in basic variant DATCOM-K3 and in variant DATCOM-K3/A to be powered using the accumulator only.

Technical data

Mechanical parameters

plastic box	for assembly on DIN bar
dimensions (width x height x length)	93 x 42 x 96 mm (height without holder)
weight	0,16 kg
clamps	for connection of cables 1,5 mm^2
ambient temperature	-25 °C to +60 °C
storing temperature	-40 °C to +85 °C
protection	IP20 (according to EN 60529)

Non-hazardous variant

classification	II (2)G [Ex ia] IIC
ATEX approval	FTZÚ 05 ATEX 0364
classification of environment	- hazardous area - normal environment (according to EN 33 2000-3)
galvanic separation (only for DATCOM-K3)	1 500 V
Power supply range (clamps 12V)	
power supply range	12 VDC -10% / +25%
max. value of voltage Um	250 V (only for DATCOM-K3) 60 V (only for DATCOM-K3/A)
idle (own) current consumption *)	typically 28 mA at 14 V (DATCOM-K3) typically 2 mA (DATCOM-K3/A)
max. current consumption **)	120 mA (DATCOM-K3) 100 mA (DATCOM-K3/A)
max. length of cable	30 m

**) to the clamps, resp. connector is not connected to any outer circuit*
***) to the connector, D-Sub is connected to the device (PC, modem) output clamps of intrinsically safe power supply (6 V OUT) are short-circuited*

Port P0 (intrinsically safe port)

communication interface	RS-485
communication speed	4 800 Bd to 38 400 Bd
max. length of cable	100 m [1)]

Port P2

communication speed	4800 Bd to 38 400 Bd
- communication interface	RS232 (connector D-Sub9)
max. length of cable	30 m
- communication interface	RS485 (terminals D-, D+)
max. length of cable	1 200 m
number of line wire	2

Digital inputs DI1 to DI4 (intrinsically safe)

number of inputs	4
max. length of cable	30 m [1)]

Digital outputs DO1 to DO4

number of outputs	4
type of output	open collectro
max. length of cable	30 m
max. voltage	30 V
max. current	100 Ma
max. resistance at fastened state	10 R

Intrinsically safe power supply (clamps 6V OUT)

off-load voltage	typically 6,2 V
current limitation	typically 74 mA
max. length of cable	30 m [1)]

[1)] Inductivity and capacity of cable (depends on used length and type of cable) has to be in accordance with parameters of system non explosiveness.

Basic variant DATCOM-K3

Basic variant is determined for systems which are powered from network voltage (Um = 250V). DATCOM-K3 may be powered from not back-up mains source or from the source which is back-up with accumulator, charged with mains charger, etc.

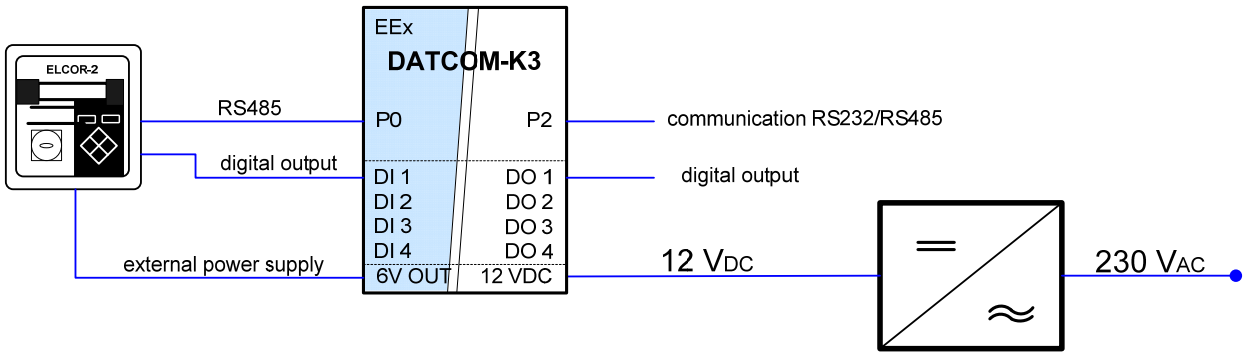


Fig. 1 Basic variant DATCOM-K3, principle of use

This manufacturing variant has galvanic separation between intrinsically safety circuits (blue clamps) and other circuits (orange clamps).

Variant DATCOM-K3/A

Manufacturing variant DATCOM-K3/A has got decreased consumption with comparison to basic variant. Using of DATCOM-K3/A is determined for systems which are powered from accumulator only. Accumulator may also be charged with solar panel (Um = 60V).

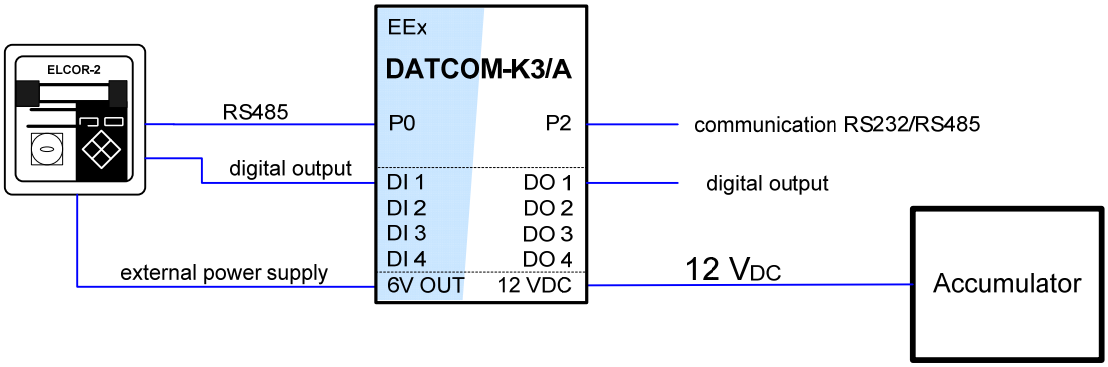


Fig. 2 Variant DATCOM-K3/A, principle of use

This manufacturing variant does not have galvanic separation between intrinsically safe input circuit (blue clamps) and other circuit (orange clamps). All GND clamps are interconnected mutually.

Manufacturer: ELGAS, s.r.o., Ohrazenice 211, 533 53 Pardubice, Czech Republic
Tel.: +420/ 466 414 500, 466 414 511 fax: +420/ 466 411 190
E-mail: sales@elgas.cz, http://www.elgas.cz

The company is a holder of certified quality system ISO 9001 with international validity and it is authorised to manufacture equipment for hazardous areas.