ABB Service Manual

V18345-2010421001

1. Description

V18345-2010421001

3. Product Information

V18345-2010421001 | ABB | TZIDC Electro-Pneumatic Positioner

Manufacturer : ABB

Product No. : V18345-2010421001

Product type : TZIDC Electro-Pneumatic Positioner

V18345 : TZIDC = intelligent, configurable with indicator and operator panel

Case / Mounting : 2 = Case made of aluminium, varnished,protection IP 65 (NEMA 4X) for mounting to linear actuators acc. to DIN/IEC 534 / NAMUR or to rotary actuators acc. to VDI/VDE 3845 as above, but with mechanical position indicator

Input / communication port : 1 = Input 4...20 mA, two-wire 1 = with connector plug for LKS adapter

Explosion protection : 0 = without

Output / safe position (in case of an electrical power failure) : 4 = Double acting, fail safe

Connections : 2 = Cable: Thread 1/2-14 NPT, Air pipe: Thread 1/4-18 NPT

Option modules for analog or digital position feedback : 1 = Plug-in module analog position feedback (sign. range 4 ... 20 mA)

Optional mechanical kit for digital position feedback : 0 = without

Design (varnish / coding) : 1 = Standard

Output signal (two-wire technology) Nominal range : 4 ... 20 mA

Digital input : Control voltage 0 ... 5 V DC logical switching state "0" 11 ... 30 V DC logical switching state "1"

Digital output (control circuit to DIN 19234/NAMUR) Supply voltage : 5 ... 11 V DC

Supply pressure : 1.4 ... 6 bar (20 ... 90 psi)

Air consumption : < 0.03 kg/h / 0.015 scfm (independent of supply pressure)

Housing Material/Protections : Aluminum, protection class IP 65 / NEMA 4X

Surface/color : Electrostatic dipping varnish with epoxy resin, stove-hardened. Case varnished black, RAL 9005, matte, housing cover Pantone 420.

Pneumatic connections : Threads G 1/4 or 1/4-18 NPT

Weight : 1.7 Kg

Options

Module for analog position feedback1

Range 4...20 mA (configurable split ranges)

Two_x0001_wire circuitry, power supply 24 V DC (10...30 V DC)

48 V DC (20...48 V DC,

no explosion protection)

Action direct or reverse (configurable)

Characteristic deviation < 1 %

Note: Without a signal from the positioner (e.g. no energy or initializ_x0001_

ing) the module sets the output to > 20 mA (alarm level)

Module for digital position feedback1

2 switches for digital position feedback (position adjustable within the

range of 0...100%, ranges cannot overlap)

Current circuits to DIN 19234/NAMUR

Supply voltage 5...11 V DC

Signal current < 1.0 mA Logical "0"

Signal current > 2.0 mA Logical "1"

Effective direction normally logical "0" or log. "1"

(configurable)

Module for the shutdown function2

Supply voltage 24 V DC (20...30 V DC)

(el. isolated from input signal)

Safe position is activated when voltage < 5 V

AK approval AK 4 to DIN V 19250

Test report No. 101/S01/148

Explosion protection see certificates (operating instr.)

SIL see page 8

A separate 24 V DC signal is normally applied to the shutdown mod_x0001_

ule, which connects through the signal from the microprocessor to

the I/P module. When the 24 V DC signal is interrupted, the I/P mod_x0001_

ule executes the respective safety function, depending on the me_x0001_

chanical construction.

Fail-safe:

The positioner output 1 is depressurized, and the valve is moved to

the safe position. In case of a double_x0001_acting actuator the second out_x0001_

put is additionally pressurized.

Fail-freeze:

The pneumatic output 1 is closed, and the valve “freezes” in its cur_x0001_

rent position. In case of a double_x0001_acting actuator both outputs are

closed.

The shutdown module works independently of the mother board, i.e.

all information from the final control element is available in the super_x0001_

visory process control system at any time.

Digital position feedback with proximity switches

Two proximity switches for independent position signaling

Switching points adjustable between 0 and 100 %

Current circuits to DIN 19234/NAMUR

Supply voltage 5...11 V DC

Signal current < 1 mA Logical "0"

Signal current > 2 mA Logical "1"