

Inductive Valve Sensor Assembly

F31K-B3B-B31-BY-SET

- Comprehensive sensor and valve kit
- A single part number includes all components
- LEDs for power on, switching states of the sensor and solenoid valve
- Power supply for the sensor and the solenoid valve via AS-interface cable

The F31K-B3B-B31-K-BY-SET is a complete assembly kit consisting of an inductive dual sensor for valve position feedback, an indicator and a solenoid valve

Function

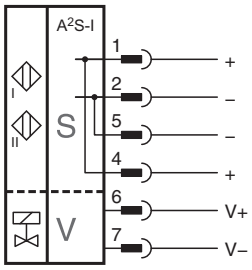
The NCN3-F31K-B3B-B31 double sensor with terminal compartment and screw terminals is connected via the AS-i bus line using a total of 4 cables.
This transmits both the valve switching signal and the sensor messages. Both are supplied with power directly via the bus cable. The valve is monitored for lead breakage and short circuit, and data bit D1 monitors the fault signal.

Technical Data

General specifications		
Switching function		Normally open/closed (NO/NC) programmable
Output type		AS-Interface
AS-Interface specification		V3.0
Required gateway specification		≥ V2.1
Description		Solenoid valve: monostable, function changeable 3/2- or 5/2-way valve, with manual override working pressure 2.5 ... 8 bar pneumatic connection: 1/4 NPT
Nominal ratings		
Operating voltage	U_B	26.5 ... 31.9 V via AS-i bus system
Operating current	I_L	0 ... 100 mA
Valve circuit		
Voltage		24 V DC
Power consumption		0.7 W
Compliance with standards and directives		
Standard conformity		
Standards		EN IEC 60947-5-2 VDI / VDE 3845
Ambient conditions		
Ambient temperature		-25 ... 60 °C (-13 ... 140 °F)
Mechanical specifications		
Connection (system side)		screw terminals
Core cross section (system side)		1.5/2.5 mm² flexible/rigid
Tightening torque, fastening screws		≤ 5 Nm
Tightening torque, housing screws		1 Nm
Tightening torque, cable gland		M20 x 1.5 ; max. 7 Nm M12 x 1.5 ; max. 1.5 Nm

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Connection Assignment



Additional Information

Programming Instructions

Address	00 preset, alterable via Busmaster or progrmming units
IO-code	D
ID-code	A
ID1-code	7
ID2-code	E

Data bit

Bit	Function
D0	valve status (0=valve OFF, 1=valve ON)
D1	valve fault [1] (0=lead breakage/short circuit; 1=no fault)
D2	switch output sensor 1 [2] (0=damped; 1=undamped)
D3	switch output sensor 2 [2] (0=damped; 1=undamped)

Parameter bit

Bit	Function
P0	Watchdog (0=inactive; 1=active) [3]
P1	switching element function sensor II [4] 0=NO; 1= NC)
P2	switching element function sensor I [4] 0=NO; 1= NC)
P3	not used

1) Verification only with actuated valve (D0=1)

2) Applies to NC function (P1/P2=1; preset), with NO function (P1/P2=0) reversed characteristics

3) Watchdog active: valve voltage drops with the occurrence of an AS-I communication fault

System Description

The NCN3-F31K-B3B-B31 is an inductive dual sensor used to detect and inidcate the valve position of valve actuators.
The sensors of the NCN3-F31K-B3B-B31 can be programmed as normally closed (NC) or normally open (NO) contacts via parameter bits P1 and P2. If there is no communication via the bus cable, the valve is automatically de-energized. Communication monitoring can be deactivated via the P0 parameter bit. The current switching states are indicated by yellow LEDs.

Information about the kit components
The kit consists of Pepperl+Fuchs standard components and standard components from FESTO.
You can find information about the Pepperl+Fuchs components via www.pepperl-fuchs.com by entering the part number or the type code in the website's search window.

Pepperl+Fuchs kit components

Part	Description
NCN3-F31K-B3B-B31	Inductive dual sensor for valve position feedback
BT65-F31-BY-EN	Actuator with highly visible valve position indicator for series F31 and F31K, including protective cover

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System Description

Part	Description
	Mounting hardware including connecting cable, cable glands, etc.

You can find information about the FESTO components via www.festo.com by entering the part number or the type code in the website's search window.

FESTO kit components

Part	Description
VSNC-FTC-M52-MD-N14-FN	Solenoid valve
VACN-N-A1-1	Solenoid coil

Note
The FESTO kit components can only be ordered within the respective kit and are not available individually from Pepperl+Fuchs.

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