

Data Sheet

Solenoid coil
Type BI

BI is a solenoid coil with ATEX / IECEx approval, applicable for zone 1 Ex environments. The coils are designed to be used with Danfoss solenoid valves.

Features

- Embedded coils with long lifetime, even under extreme conditions
- High reliability and long lifetime
- Easy mounting and dismantling
- coils comes in two versions,- bottom and frame version
- Covering voltage and frequency:
 - 240 V 50/60 Hz
 - 230 V 50/60 Hz
 - 110 V 50/60 Hz
 - 24 V 50/60 Hz
 - 24V DC

Directive

- RoHS 2011/65/EU
- ATEX 2014/34/EU

Certification

- Ex mb IIC T4 Gb
- IECEx ULD 21.0024X
- UL 21 ATEX 2606X
- UL21UKEX2374X

Product specification

Technical data

Table 1: Technical data

Features	Description	
Mode of operation	Type 1 action (EN60730-1)	
Protection against electrical shock	Class I (EN60730-1)	
Humidity	0 - 97% RH	
Enclosure	IP54 (EX certification) IP67 (Evaluated by Danfoss)	
Pollution degree	3 ((BS) IEC/EN 60730-1 Annex N)	
Max. altitude above sea level	2000 m	
Permissible voltage variation	240V 50/60Hz : -10%, +6% 230V 50/60Hz : -10%, +6% 110V 50/60Hz : -10%, +6% 24V 50/60Hz : -10%, +6% 24V DC : -10%, +6%	
Rated impulse voltage	4 kV	
Over voltage category	III (EN60730-1)	
Nominal current	Power consumption holding	
		[W]
	240 V AC 50/60 Hz	10.7
	230 V AC 50/60 Hz	12.5
	110 V AC 50/60 Hz	10.0
	24 V AC 50/60 Hz 24 V DC	10.3 12.0
Duty rating	Continuous	
Ambient temperature	-40 °C – 40 °C	
Media temperature	-40 °C – 90 °C	
Insulation of coil windings	UL, class 200	
Connection	Terminal box with cable	
Cable specification	PVC 60227 IEC53 - 3x0,75mm ² - Ø 6,6	
External earth core	Minimum area > 4 mm ²	

Coil identification

Figure 1: Coil Identification

6430 Nordborg, DK

22 Wycombe End, HP9 1NB, GB

MADE IN CHINA

COIL 018Z8586

CE 0539 (Ex) II 2G UK CA 0843

Ex mb IIC T4 Gb

UL 21 ATEX 2606X

IECEX ULD 21.0024X

UL21UKEX2374X

-40°C ≤ Ta ≤ 40°C

230V 50/60Hz 0,053A

Z8526

- 1 Point of contact
- 2 Country of origin
- 3 Code number
- 4 Approval/certificate numbers
- 5 Ambient temperature
- 6 Supply voltage
- 7 Frequency
- 8 Current
- 9 Raw coil number (Z8526=018Z8526)

Classification EN 60079

Table 2: Classification EN 60079

Features	Description
Media	Gas, vapours and mists
Explosion proof area	Zone 1
Equipment group	II
Equipment category	2G
Equipment Protection Level (EPL)	Gb
Gas group	IIC
Temperature class	T4
Type of protection	mb
Exposed to SUN/UV light	No
Impact height	Max 0.4 m

NOTE:

Must be protected against ultraviolet sources.

Moist-Clean only. The cable must be protected according to IEC/EN EN BS 60079-14.

- Use only for system in compliance with ATEX. Ignition risk is evaluated in accordance to ATEX.
- Coil type BI can be applied on systems with R290, R600, R600a and R1270 as the working fluid.
- For countries where safety standards are not an indispensable part of the safety system Danfoss recommend the installer to get a third party approval of the system containing flammable refrigerant.
- Please follow specific selection criteria stated in the datasheet for these particular refrigerants.

Installation, operation and maintenance

- Protect the coil against external impact.
- Protect the coil against direct sunlight and other ultraviolet sources.
- Disconnect the power before dismantling the coil.
- Install the coil and cable according to EN60079-14.
- The cable supplied with the solenoids must not be handled or flexed, and shall be protected against impact if the ambient temperature is below 0 °C .
- Installation and handling of the cable shall be done at temperature above 0 °C.
- The cable is only for fixed installation and the minimum bending diameter for fixed installation: $r \geq 35 \text{ mm}$
- The cable jacket material is PVC.
- The cable operating temperature range is -40 - 90 °C.
- The product is provided with a yellow / green PE wire as well as an external earth terminal. These shall not be used simultaneously. If the external earth connection is connected to earth or bonding system, the Y / G earth wire must be cut off, isolated and not connected. If the Y / G wire is connected to earth, the external earth terminal must be left without any connection. For the external earth terminal the size of the earth core shall be minimum 4 mm² and the installer shall use a suitable method e.g. crimp terminal to ensure secureness of the external earth connection. The screw for external PE shall be mounted with 1.2 Nm \pm 0.2. The external earth conductors shall be physically secured close to the coil connection to ensure that the conductors cannot be readily loosened or twisted.
- The end user must ensure the earthing of the coil is maintained.
- Non-detachable cords method Z repairing not allowed. If the coil failed, it must be replaced by a new coil.

Solenoid coil, Type BI

Dimensions and weights

Figure 2: Coil dimension, Bottom version

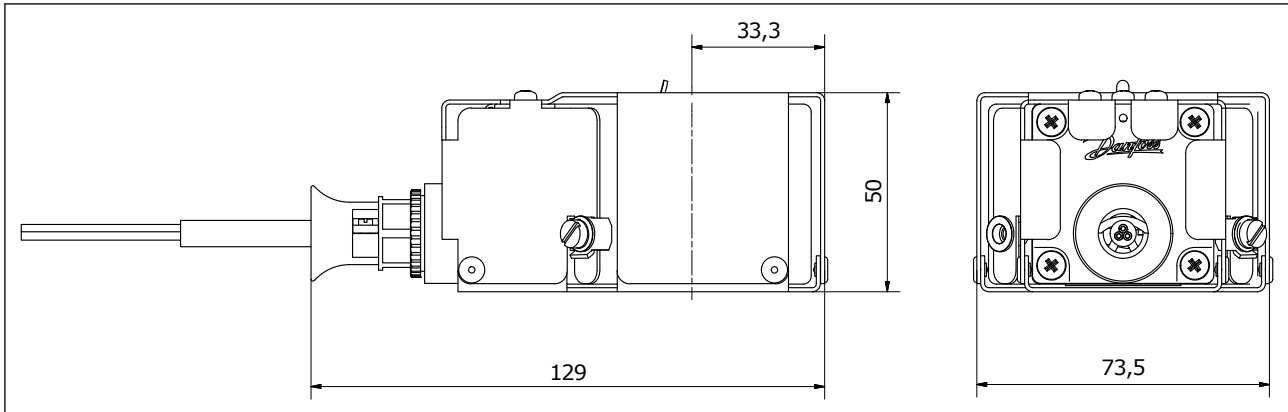
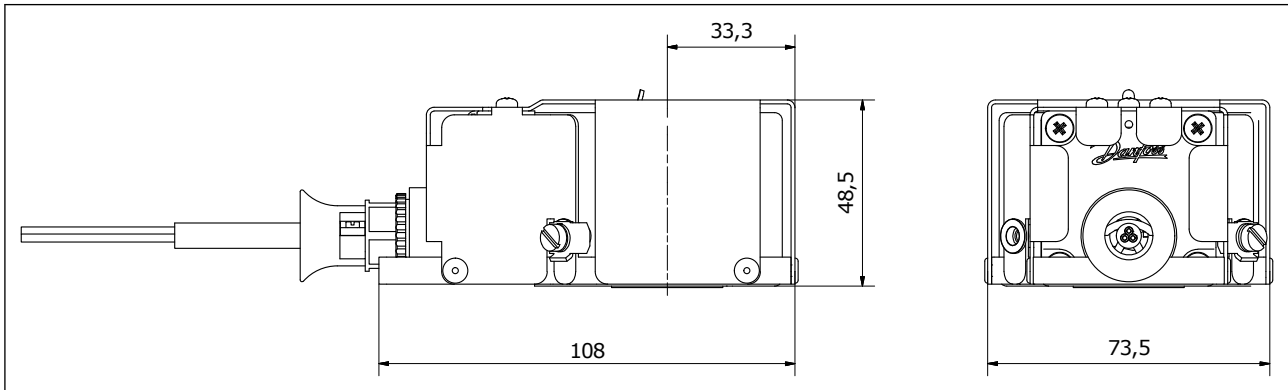


Figure 3: Coil dimension, Frame version



Ordering

Part program

Table 3: Ordering table for Fluid Controls valves

Valve type	Coil type	Bottom or Frame version	Supply voltage	Frequency	MOPD	Cable length	Code no.
			[V]	[Hz]	[bar]	[m]	
EV220B/BW 15-50, EV220B 65-100, EV222B 15-50, EV250B/BW	BI240C	With Bottom	240	50/60	10	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NC 1.5, 2.0, EV224B 15-25	BI240C	With Bottom	240	50/60	30	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NC 3.0	BI240C	With Bottom	240	50/60	20	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NC 4.5	BI240C	With Bottom	240	50/60	10	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NC 6	BI240C	With Bottom	240	50/60	4	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B NC 8	BI240C	With Bottom	240	50/60	2	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B NC 10	BI240C	With Bottom	240	50/60	1.2	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B NC 15	BI240C	With Bottom	240	50/60	0.3	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B NC 20	BI240C	With Bottom	240	50/60	0.28	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B NC 25	BI240C	With Bottom	240	50/60	0.25	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589

Solenoid coil, Type BI

Valve type	Coil type	Bottom or Frame version	Supply voltage	Frequency	MOPD	Cable length	Code no.
			[V]	[Hz]	[bar]	[m]	
EV210B/BW NO 1.5	BI240C	With Bottom	240	50/60	30	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NO 2	BI240C	With Bottom	240	50/60	12	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NO 3	BI240C	With Bottom	240	50/60	5	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV210B/BW NO 4.5	BI240C	With Bottom	240	50/60	2	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589
EV220B, EV221BW, EV251B	BI240C	With Frame	240	50/60	10	5	018Z8591
	BI230C		230	50/60			018Z8592
	BI110C		110	50/60			018Z8593
	BI024C		24	50/60			018Z8595
	BI024D		24	DC			018Z8596
EV227B	BI240C	With Frame	240	50/60	5	5	018Z8591
	BI230C		230	50/60			018Z8592
	BI110C		110	50/60			018Z8593
	BI024C		24	50/60			018Z8595
	BI024D		24	DC			018Z8596

Table 4: Ordering table for Refrigeration valves

Valve type	Coil type	Bottom or Frame version	Supply voltage	Frequency	MOPD	Cable length	Code no.
			[V]	[Hz]	[bar]	[m]	
EVRS/T 10-20, ICF 20, EVRA/ EVRA(T) 10-15-20, VDHT 120	BI240C	With Frame	240	50/60	17	5	018Z8591
	BI230C		230	50/60			018Z8592
	BI110C		110	50/60			018Z8593
	BI024C		24	50/60			018Z8595
	BI024D		24	DC			018Z8596
AKV, AKVA, EVM, EVRP, EVRB, EVR, EVRS(T) 3, EVRA/EVRA(T) 3, EVRA 25-32-40, ICF 25-50-65	BI240C	With Bottom	240	50/60	17	5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589

Table 5: Ordering table for HPP (High Pressure Pumps)

Valve type	Coil type	Bottom or Frame version	Supply voltage	Frequency	MOPD	Cable length	Code no.
			[V]	[Hz]	[bar]	[m]	
VDH, VDHT, VDHT EAM, VPH, VRF	BI240C	With Bottom	240	50/60		5	018Z8585
	BI230C		230	50/60			018Z8586
	BI110C		110	50/60			018Z8587
	BI024C		24	50/60			018Z8588
	BI024D		24	DC			018Z8589

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