ENGINEERING TOMORROW

Data Sheet

Marine Solenoid Coils Type **BR**

Danfoss solenoid valves and coils are usually ordered separately to allow maximum flexibility, enabling you to select a valve and coil combination to best suit your needs.

The Danfoss marine coil program consists of easy-to-handle Clip-On system.

Danfoss Marine coils are designed according to marine requirements. The insulation material burning behavior is V-0 class, Glow Wire Flammability Index (GWFI) 960°C and Glow Wire Ignition Temperature (GWIT) 750°C according to IEC60695.

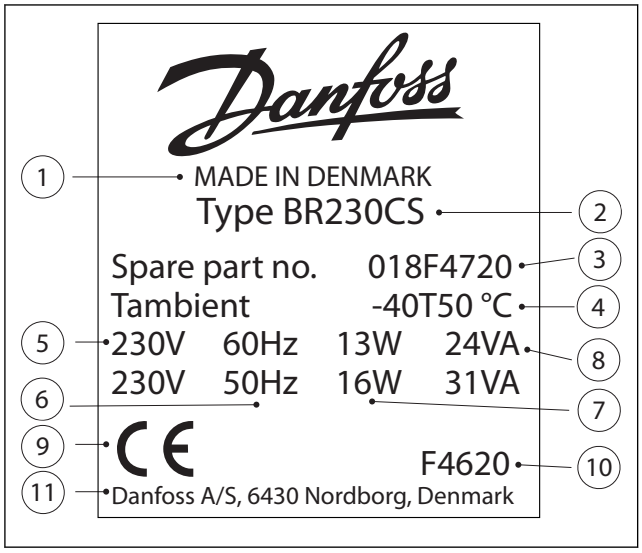
Features and versions

- Designed for:
  - Marine applications
  - For 13,5 mm B systems
  - EV210B, EV220B, EV224B, EV250B, EVR, EVRA, EVRS, EVRAT, EVRST and EVM Solenoid valves.
- Encapsulated coils with long operating life, even under extreme conditions
- Coils can be fitted without use of tools
- Coils can only be removed with use of tools
- Marine coils for AC:
  - 24V 50/60 Hz
  - 110-120V 50/60 Hz
  - 230V 50/60Hz
- Marine coils for DC:
  - 24V
- Marine coils available with:
  - Cable plugs IP65 or IP67

Product specification

Coil identification

Figure 1: Coil identification



1	Country of origin
2	Coil type
3	Spare part no. (code no.)
4	Ambient temperature (-40 – 50 °C = Ambient temperature range: -40 °C – 50 °C)
5	Supply voltage [V]
6	Frequency [Hz]
7	Power consumption [W]
8	Power consumption [VA]
9	CE marking
10	Raw coil number (F4620=Raw coil number 018F4620)
11	Point of contact

BR marine coils, High performance coils

Figure 2: BR marine coils

features

- Enclosure: Up to IP67 / NEMA 4X
- In accordance with:

- RoHS Directive 2011/65/EU
- Low Voltage Directive 2014/35/EU
  - EN60730-1
  - EN60730-2-8
  - VDE
  - CSA
- Design according to:
  - Flammability
    - UL94 V0
    - IEC 60695-11-5

Table 1: BR, High performance coils

Type	Tambient	Supply voltage	Voltage variation	Frequency	Power consumption		Code no.
	[°C]	[V]		[Hz]	[W]	[VA]	
BR024CS	-40 – 50	24	±10%	50	14	26	018F4722
		24	±10%	60	12	21	
BR120CS	-40 – 50	110	±10%	50	14	27	018F4723
		110 – 120	±10%	60	14	27	
BR230CS	-40 – 50	220 - 230	±10%	50	16	31	018F4720
			±10%	60	13	24	
BR024DS	-40 – 50	24	±10%	DC	16		018F4721

NOTE:
See pages 4 - 5 for MOPD table when ordering coil to specific valve type.

Technical data

Table 2: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Insulation Class H (180 °C)
Connection	Spade connector in accordance with DIN 43650 form A
Flammability GWFI/GWIT	960 °C / 750 °C
UL recognition	UL94
Burning behavior	V-0 class
Enclosure, IEC 60529	Up to IP67 / NEMA 4X
Plug type IP65	Cable plug (042N1278)
Plug type IP67	Cable plug (042N1256)

MOPD table for EV solenoid valves

Table 3: MOPD table for EV solenoid valves

Valve type	Orifice size	Solenoid marine coils						
		BR024CS (018F4722)		BR120CS (018F4723)		BR230CS (018F4720)		BR024DS (018F4721)
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	DC
EV220B 15-50	50 15-25 NC	16 [1] / 10 [2]		16 [1]/ 10 [2]		16 [1]/ 10		16 [1]/ 10
	32-50 NC	12 [1]/ 10 [2]		12 [1]/ 10 [2]		12 [1]/ 10 [2]		12 [1]/ 10 [2]
	15-50 NO	10		10		10		10
EV220B 6-12	6 NC	20		20		20		10
	6 NO	10		10		10		10
	10 NC	20		20		20		20
	10 NO	10		10		10		10
	12 NC	10		10		10		
EV250B	12 NC	10		10		10		6
	12 NO	10		10		10		10
EV210B 1,5-10	1.5	30		30		30		30
	2	30		30		30		30
	3	20		20		20		13
	6	4		4		4		2
	10	1.2		1.2		1.2		0.6

Valve type	Orifice size	Solenoid marine coils						
		BR024CS (018F4722)		BR120CS (018F4723)		BR230CS (018F4720)		BR024DS (018F4721)
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	DC
EV224B 15-25	15	40		40		40		40
	20	35		35		35		35
	25	33		33		33		33

(1) EPDM/NBR
(2) FKM

MOPD table for EVR solenoid valves

Table 4: MOPD table for EVR solenoid valves

Valve type	Orifice size	Solenoid marine coils					
		BR024CS (018F4722)		BR120CS (018F4723)		BR230CS (018F4720)	
		50 Hz	60Hz	50Hz	60Hz	50Hz	60Hz
EVR (032F)	2/3 NC	38		38		38	
EVR (032L)	4 NC	38		38		38	
	6 NC	38		38		38	
	6 NO	21		21		21	
	8 NC	38		38		38	
	10 NC	21		21		21	
	10 NO	38		38		38	
	15 NC	38		38		38	
	15 NO	21		21		21	
	18 NC	38		38		38	
	20/22 NC	38		38		38	
	20/22 NO	19		19		19	
	25 NC	38		38		38	
	32/40 NC	38		38		38	
EVRA	3	38		38		38	
EVRA	10/15/20	38		38		38	
EVRA	25	38		38		38	
EVRA	32/40	38		38		38	
EVRAT	10/15/20	38		38		38	
EVRS	3/10/15/20	38		38		38	
EVRST	10/15/20	38		38		38	
EVM	3 NC	38		38		38	
	1.8 NO (027B1130)	19		19		19	
	1.8 NO (027B1132)	38		38		38	

Dimension and weight

Figure 3: Dimension and weight

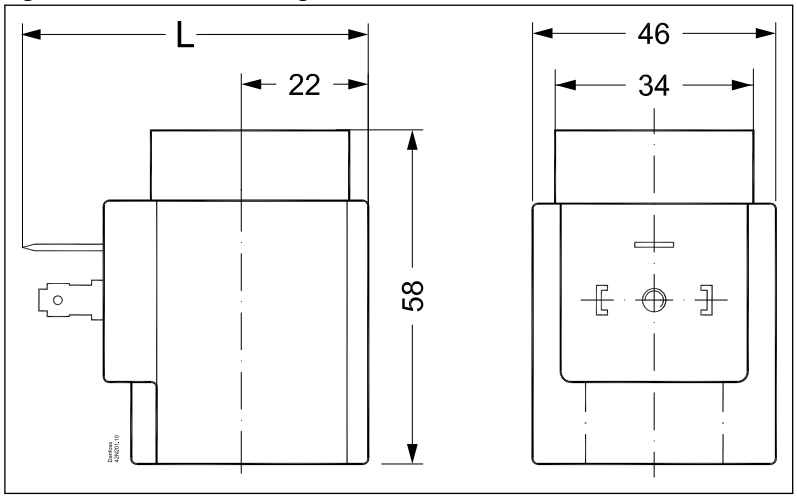


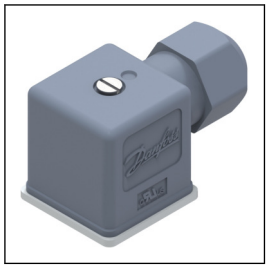
Table 5: Dimension and weight

Type	L without cable plug	L with protective cap	L with cable plug	Weight
	[mm]	[mm]	[mm]	[kg]
BR	62	77	78	0.24

Ordering

Cable plug, IP67

Figure 4: Cable plug, DIN 18



- Enclosure: IP67 / NEMA 4X
- For use with all Danfoss marine coils
- AC / DC all voltages up to 250 V
- In accordance with:
  - RoHS 2011/65/EU
  - LVD 2014/35/EU
- Design according to:
  - Flammability
    - UL94 V0
    - IEC 60695-11-5

Table 6: DIN 18

Cable plug size	Description	Code no.
DIN 18	Cable plug IP67	042N1256

Technical data

Figure 5: Technical data, DIN 18

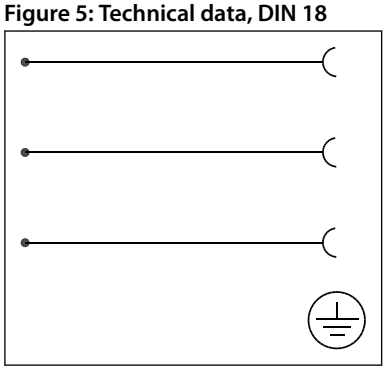


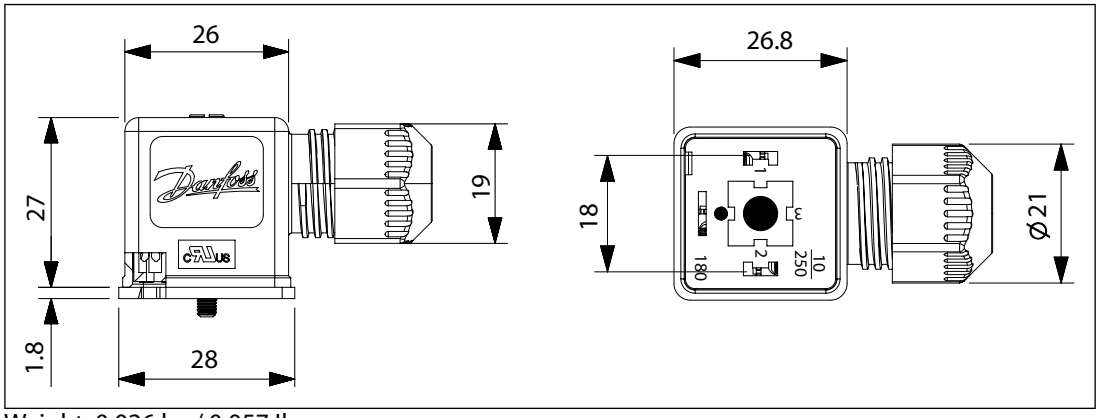
Table 7: Technical data, DIN 18

Type	Cable plug with Danfoss logo
Design	EN 175301-803 Form A
Cable gland	Ext. thread diameter range 4-9 mm
Poles	2+1 (earth)
Max. voltage	250 V AC / DC
Approvals	c UL us
Enclosure	IP67 (IEC 60529)
Max. operating current	16 A
Contact resistance	≤ 15 mΩ
Cable diameter	Ø 4 - 9 mm
Wire cross section	Max. 1.5 mm^2
Ambient temperature	-40 - 125 °C / -40 - 257 °F

Materials	Housing	PA66 GF (Polyamide)
	Terminal block	PA66 GF (Polyamide)
	Profiled Gasket	Silicone

Dimension and weight

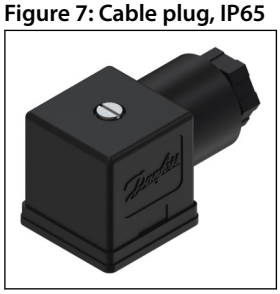
Figure 6: Dimension and weight



Weight: 0.026 kg / 0.057 lbs

Cable plug, IP65

Figure 7: Cable plug, IP65



- Enclosure: IP65 / NEMA 4
- For use with all Danfoss marine coils
- AC / DC all voltages up to 250 V
- In accordance with:
  - RoHS 2011/65/EU
  - LVD 2014/35/EU
- Design according to:
  - Flammability
    - UL94 V0
    - IEC 60695-11-5

Table 8: Cable plug, IP65

Cable plug size	Description	Code no.
DIN 18	Cable plug IP65	042N1278

Technical data

Figure 8: Technical data, IP65

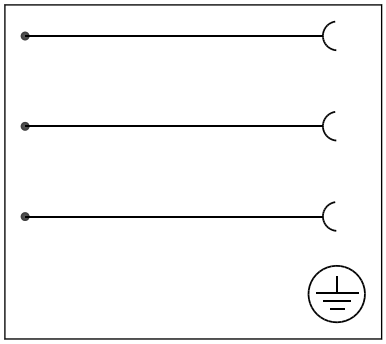
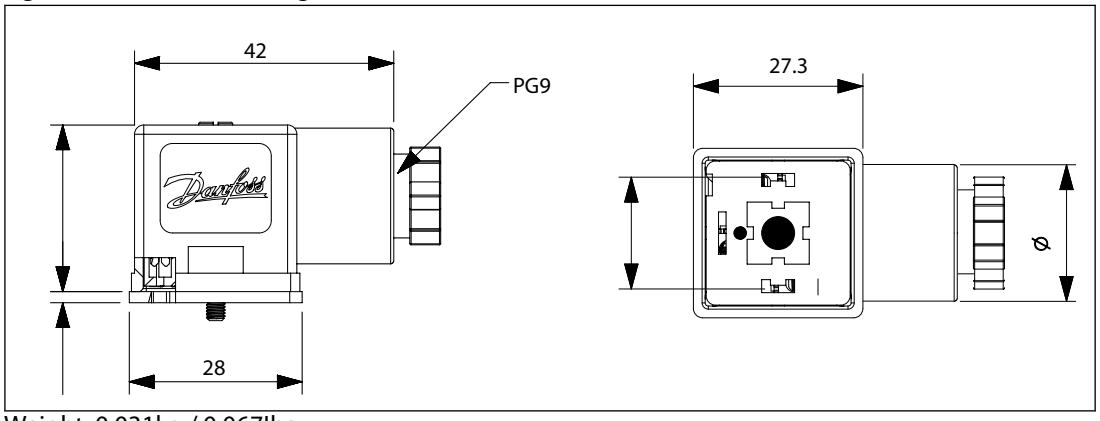


Table 9: Technical data, IP65

Type	Cable plug with Danfoss logo	
Design	EN 175301-803 Form A	
Cable gland	PG 9	
Poles	2+1 (earth)	
Max. voltage	250 V AC / DC	
Approvals	c UL us	
Enclosure	IP65 (IEC 60529)	
Max. operating current	16 A	
Contact resistance	≤ 15 mΩ	
Cable diameter	Ø 6 - 8 mm	
Wire cross section	Max. 1.5 mm^2	
Ambient temperature	-40 - 90°C / -40 - 194°F	
Materials	Housing	PA66 GF (Polyamide)
	Terminal block	PA66 GF (Polyamide)
	Profiled gasket	NBR

Dimension and weight

Figure 9: Dimension and weight



Weight: 0.031kg / 0.067lbs

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

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