

Data Sheet

Solenoid coils

Type **BA, BD, BB, BE, BF, BG, BN, BO, BJ, BX, BY, BQ, AM, AZ, AS and AP**

Solenoid coils for A and B system



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 coil program consists of both the easy-to-handle Clip-On system and traditional coils with threaded fastener.

Danfoss offer a wide range of application specific coils for e.g. steam or hazardous areas. The coils are available with approvals such as EN60730-1, EEx/ATEX and UL.

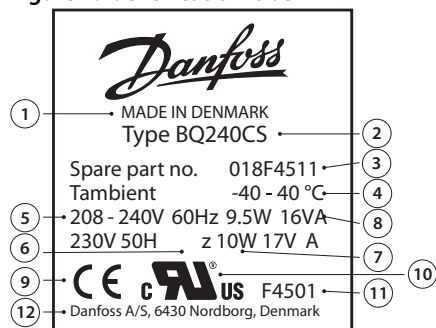
Features

- Encapsulated coils with long operating life, even under extreme conditions
- Standard coils for AC or DC
- Standard coils from 12 V – 400 V, 50, 60, 50 / 60 Hz or DC
- Standard coils available with:
 - Cable plugs
 - Industrial plugs
 - Terminal box
 - 3 core cable
 - Junction box
 - Conduit hub

1 Coil identification

Technical data is printed directly on the coil:

Figure 1: Identification label



1	Country of origin
2	Coil type
3	Spare part no. (code no.)
4	Ambient temperature: (-40 – 40 °C = Ambient temperature range: -40 °C – 40 °C)
5	Supply voltage [V]
6	Frequency [Hz]
7	Power consumption [W]
8	Power consumption [VA]
9	CE marking
10	UL recognized coil
11	Raw coil number (F4501=Raw coil number 018F4501)
12	Point of contact

2 Product specification

2.1 BA, High performance coils

Figure 2: BA, High performance coils



Features

- Cable plug enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with cable plug
- Nut and snap fastener included
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 1: BA, High performance coils

Type	Ambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BA024A	-40 – 40	24	-15%, 10%	50	8.5	17	042N7508
BA048A	-40 – 40	48	-15%, 10%	50	9.5	18	042N7510
BA115A	-40 – 40	115	-15%, 10%	50	9	18	042N7512
BA230A	-40 – 40	220 – 230	-15%, 6%	50	12	22	042N7501
BA240A	-40 – 40	240	-15%, 10%	50	10	20	042N7502
BA400A	-40 – 40	380 – 400	-15%, 6%	50	12	22	042N7504
BA024B	-40 – 40	24	-15%, 10%	60	9.5	19	042N7520
BA115B	-40 – 40	115	-15%, 10%	60	12	23	042N7522
BA220B	-40 – 40	220	-15%, 10%	60	11	21	042N7523
BA012D	-40 – 40	12	±10%	DC	14	–	042N7550
BA024D	-40 – 40	24	±10%	DC	14	–	042N7551

Table 2: Technical data

Design	In accordance with VDE 0580	
Insulation of coil windings	Class H according to IEC 85	
Connection	Spade connector in accordance with DIN 43650 form A	
Enclosure, IEC 529	IP00 with spade connector, IP20 with protective cap, IP65 with cable plug	
Duty rating	Continuous	
Plug type	Cable plug (042N0156)	

2.1.1 Dimensions and weight

Figure 3: BA, High performance coils

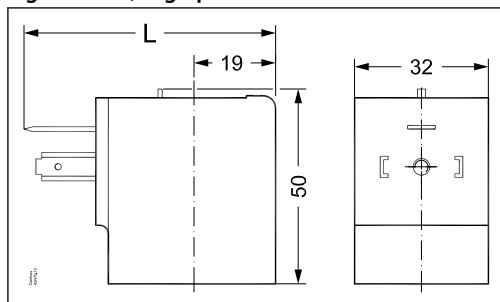


Table 3: BA, High performance coils

Type	L without cable plug [mm]	L with protective cap [mm]	L with cable plug [mm]	Weight [kg]
BA	54	71	79	0.16

2.2 BD, High performance coils

Figure 4: BD, High performance coils



Features

- Cable plug enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with cable plug
- Nut and snap fastener included
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 4: BD, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BD024A	-40 – 40	24	-15%, 10%	50	15	29	042N7597
BD230A	-40 – 40	230	-10%, 6%	50	14	28	042N7591

Table 5: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	IP00 with spade connector, IP20 with protective cap, IP65 with cable plug
Duty rating	Continuous
Plug type	Cable plug (042N0156)

2.2.1 Dimensions and weight

Figure 5: BD, High performance coils

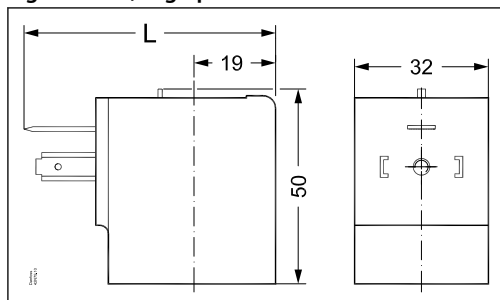


Table 6: BD, High performance coils

Type	L without cable plug [mm]	L with protective cap [mm]	L with cable plug [mm]	Weight [kg]
BD	54	71	79	0.16

2.3 BB, High performance coils

Figure 6: BB, High performance coils



Features

- Enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with mounted cable plug
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 7: BB, High performance coils

Type	Ambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BB024AS	-40 – 80	24	-15%, 10%	50	11	19	018F7358
BB115AS	-40 – 80	115	-15%, 10%	50	11	19	018F7361
BB230AS	-40 – 80	220 – 230	-15%, 10%	50	11	19	018F7351
BB240AS	-40 – 80	240	-15%, 10%	50	11	19	018F7352
BB440CS	-40 – 50	380 – 400	-15%, 10%	50	14	24	018F7353
		440	-15%, 10%	60	15	24	
BB024BS	-40 – 80	24	-15%, 10%	60	14	23	018F7365
BB110CS	-40 – 50	110	±10%	50	15	28	018F7360
		110	±10%	60	13	22	
BB230CS	-40 – 50	220 – 230	±10%	50	16	31	018F7363
		220 – 230	±10%	60	13	24	
BB012DS	-40 – 50	12	±10%	DC	14	–	018F7396
BB024DS	-40 – 50	24	±10%	DC	16	–	018F7397

Table 8: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	IP00 with spade connector, IP20 with protective cap, IP65 with cable plug
Duty rating	Continuous
Plug type	Cable plug (042N0156)

2.3.1 Dimensions and weight

Figure 7: BB, High performance coils

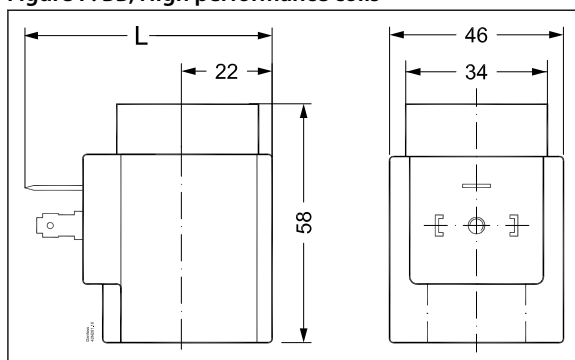


Table 9: BB, High performance coils

Type	L without cable plug [mm]	L with protective cap [mm]	L with cable plug [mm]	Weight [kg]
BB	62	77	85	0.24

2.4 BE, High performance coils

Figure 8: BE, High performance coils



Features

- Enclosure: IP67 for moist environments with terminal box
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 10: BE, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BE024AS	-40 – 80	24	-15%, 10%	50	12	21	018F6707
BE048AS	-40 – 80	48	-15%, 10%	50	11	20	018F6709
BE115AS	-40 – 80	115	-15%, 10%	50	11	19	018F6711
BE230AS	-40 – 80	220 – 230	-15%, 10%	50	12	22	018F6701
BE240AS	-40 – 80	240	-15%, 10%	50	11	19	018F6702

Solenoid coils, type BA, BD, BB, BE, BF, BG, BN, BO, BJ, BX, BY, BQ, AM, AS, AZ and AP

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BE440CS	-40 – 80	380 – 400	-15%, 10%	50	13	23	018F6703
		440	-15%, 10%	60	14	24	
BE024BS	-40 – 80	24	-15%, 10%	60	14	25	018F6715
BE115CS	-40 – 80	100	-15%, 10%	50	11	19	018F6710
		115	-15%, 10%	60	13	22	
BE220BS	-40 – 80	220	-15%, 10%	60	13	23	018F6714
BE110CS	-40 – 50	110	±10%	50	15	28	018F6730
	-40 – 50	110	±10%	60	13	22	
BE230CS	-40 – 50	220 – 230	±10%	50	17	31	018F6732
		220 – 230	±10%	60	14	24	
BE012DS	-40 – 50	12	±10%	DC	15	–	018F6756
BE024DS	-40 – 50	24	±10%	DC	16	–	018F6757

Table 11: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	1 m 3-core flying lead
Enclosure, IEC 529	IP67
Duty rating	Continuous

2.4.1 Dimensions and weight

Figure 9: BE, High performance coils

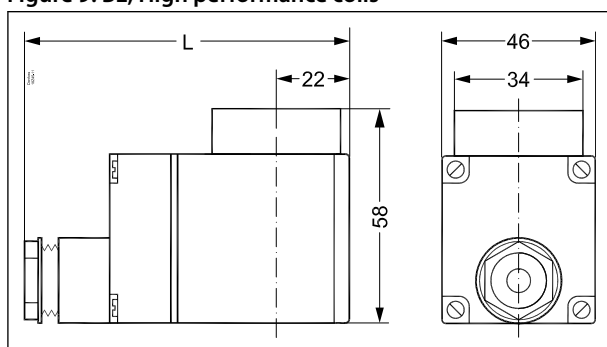


Table 12: BE, High performance coils

Type	L with terminal box [mm]	L with 1m cable [mm]	Weight [kg]
BE	94	65	0.30

2.5 BF, High performance coils

Figure 10: BF, High performance coils



Features

- Enclosure: IP67 for moist environments with molded-in cable
- In accordance with:

- RoHS Directive 2011/65/EU
- Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 13: BF, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BF230AS	-40 – 80	220 – 230	-15%, 10%	50	12	22	018F6251
BF240AS	-40 – 80	240	-15%, 10%	50	11	19	018F6252
BF440CS	-40 – 80	380 – 400	-15%, 10%	50	14	24	018F6253
		440	-15%, 10%	60	15	24	
BF024AS	-40 – 80	24	-15%, 10%	50	12	20	018F6257
BF115CS	-40 – 80	100	-15%, 10%	50	11	19	018F6260
		115	-15%, 10%	60	13	22	
BF220BS	-40 – 80	220	-15%, 10%	60	14	23	018F6264
BF024BS	-40 – 80	24	-15%, 10%	60	14	25	018F6265
BF110CS	-40 – 50	110	±10%	50	15	29	018F6280
		110	±10%	60	13	23	
BF230CS	-40 – 50	220 – 230	±10%	50	16	31	018F6282
		220 – 230	±10%	60	14	24	

Table 14: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	1 m 3-core flying lead
Enclosure, IEC 529	IP67
Duty rating	Continuous

2.5.1 Dimensions and weight

Figure 11: BF, High performance coils

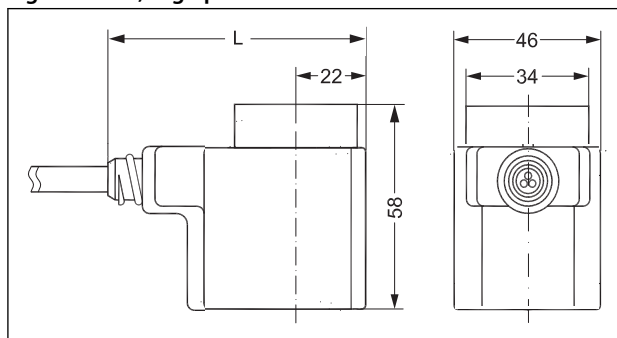


Table 15: BF, High performance coils

Type	L with 1m cable [mm]	Weight [kg]
BF	67	0.30

2.6 BG, High performance coils

Figure 12: BG, High performance coils



Features

- Enclosure: IP67 for moist environments with terminal box
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 16: BG, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BG024AS	-40 – 80	24	-15%, 10%	50	11	21	018F6807
BG110AS	-40 – 80	110	-15%, 10%	50	13	25	018F6811
BG230AS	-40 – 80	220 – 230	-15%, 10%	50	15	28	018F6801
BG240AS	-40 – 80	240	-15%, 10%	50	13	25	018F6802
BG400AS	-40 – 80	380 – 400	-15%, 10%	50	15	29	018F6803
BG024BS	-40 – 80	24	-15%, 10%	60	15	29	018F6815
BG110BS	-40 – 80	110	-15%, 10%	60	16	29	018F6813
BG220BS	-40 – 80	220	-15%, 10%	60	16	29	018F6814
BG012DS	-40 – 50	12	±10%	DC	20	–	018F6856
BG024DS	-40 – 50	24	±10%	DC	16	–	018F6857

Table 17: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Terminal box
Enclosure, IEC 529	IP67
Duty rating	Continuous
Plug type	Terminal box

2.6.1 Dimensions and weight

Figure 13: BG, High performance coils

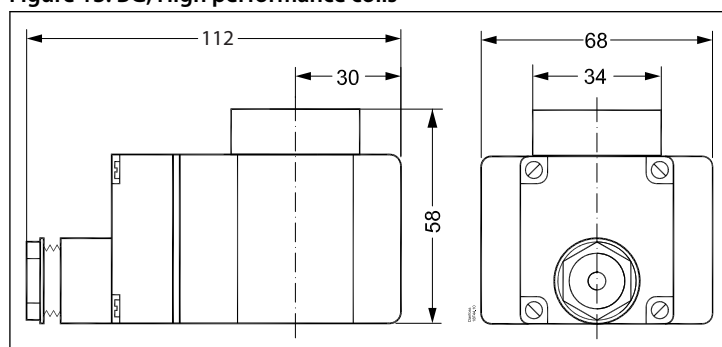
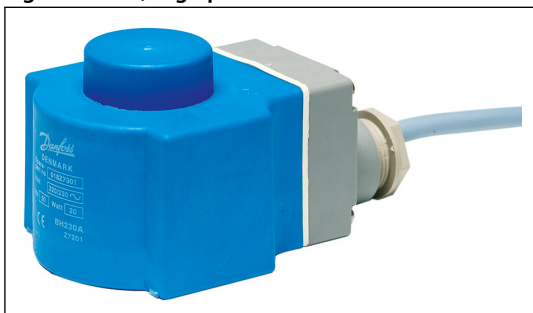


Table 18: BG, High performance coils

Type	L with terminal box [mm]	Weight [kg]
BG	112	0.50

2.7 BN, High performance coils Hum-free

Figure 14: BN, High performance coils



Features

- Hum-free
- Enclosure: IP67 for moist environments with flying lead
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 19: BN, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
BN230CS	-40 – 50	220 – 230	±10%	50	22	24	018F7301
		220 – 230	±10%	60	22	24	

Table 20: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	1 m 3-core flying lead
Enclosure, IEC 529	IP67
Duty rating	Continuous

2.7.1 Dimensions and weight

Figure 15: BN, High performance coils Hum-free

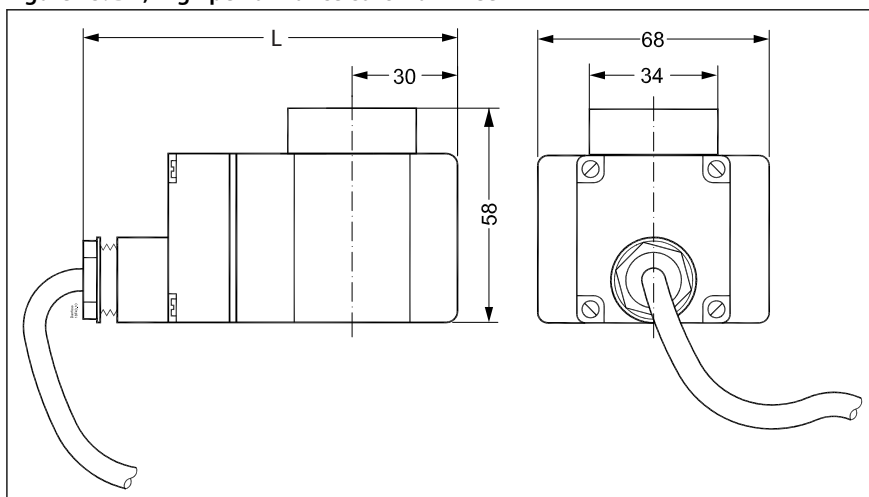


Table 21: BN, High performance coils

Type	L with 1m cable [mm]	Weight [kg]
BN	112	0.60

2.8 BN, High performance coils Center boss

Figure 16: BN, High performance coils



Features

- Enclosure:
 - Center boss for mounting IP65/IP67 cable plug in accordance with DIN43650 form A
 - IP65/IP67 for moist environments with terminal box
- Used with EV215B, EV225B, and EV245B up to 160 °C low pressure steam and max. ambient temperature 40 °C (see additional information in the respective solenoid valve data sheets)
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8
- Mounted with the solenoid valves EV210B, EV220B, EV215B and EV225B, the assembly is UL recognized

Table 22: BN, High performance coils Center boss

Type	Tambient [°C]	Supply voltage [V]	Voltage varia- tion	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
BN024DS	-40 – 50	24	±10%	DC	20	–		018F6968

Table 23: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Cable plug in accordance with DIN43650 form A or terminal box
Enclosure, IEC 529	IP65, IP67
Duty rating	Continuous

2.8.1 Dimensions and weight

Figure 17: BN, High performance coils Center boss

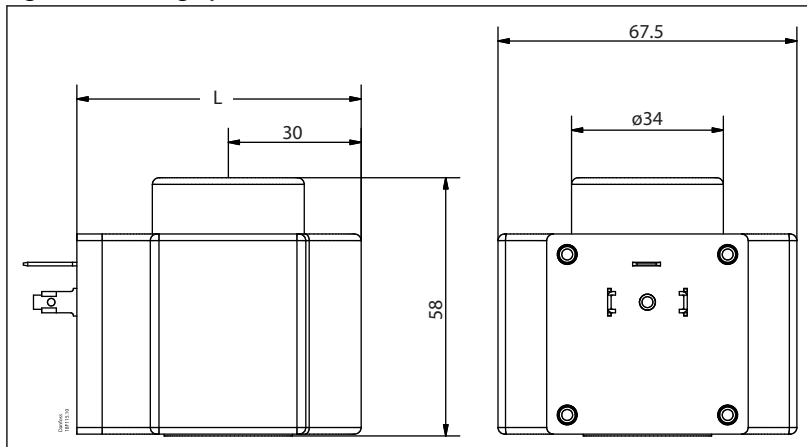


Table 24: BN, High performance coils Center boss

Type	L [mm]	Weight [kg]
BN	64	0.47

2.9 BO, High performance coils

Figure 18: BO, High performance coils



Features

- ATEX Zone 1
- Enclosure: IP67 seal kit for moist environment included
- Approved in accordance with:
 - ATEX 2014/34/EU
 - Ex mb IIC T4 Gb
 - ITS 09 ATEX 16835X
- Media temperature: Up to 90 °C

Table 25: BO, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
BO024C	-40 – 60	24	±10%	50 / 60	10	21	018Z6595
BO110C	-40 – 60	110	±10%	50 / 60	10	21	018Z6593
BO230C	-40 – 60	230	±10%	50 / 60	10	21	018Z6592
BO240C	-40 – 60	240	±10%	50 / 60	10	21	018Z6591
BO024D	-40 – k60	24	±10%	DC	10	–	018Z6596

Table 26: Technical data

Insulation of coil windings	Class H according to IEC 85
Connection	5 m 3 x 0.75 mm ² flexible cord
Enclosure, IEC 529	IP67 including seal kit
Media temperature	-40 °C – 90 °C
Duty rating	Continuous

Solenoid coils, type BA, BD, BB, BE, BF, BG, BN, BO, BJ, BX, BY, BQ, AM, AS, AZ and AP

Humidity	0 – 100%
Pollution degree	3 (EN60730-1)
Impulse withstand voltage	2.5 kV (EN60730-1)

Table 27: Accessory

Description	Application	Code no.
Seal kit (included as standard)	Wet environment (pollution degree 3)	018Z0090

2.9.1 Dimensions and weight

Figure 19: BO, High performance coils

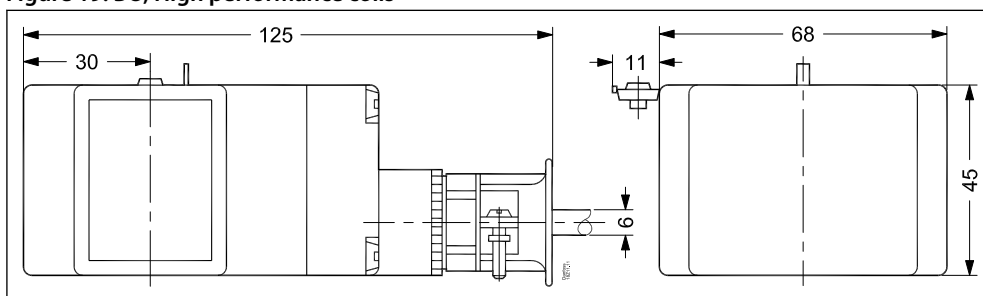


Table 28: BO, High performance coils

Type	L [mm]	Weight [kg]
BO	125	0.60

2.10 BJ, High performance coils Junction box

Figure 20: BJ, High performance coils



Features

- Enclosure: IP30 / NEMA 2
- For UL listed valves (UL 429 and CSA)
- Ambient temperature: Up to 50 °C / 122 °F
- Media temperature: Up to 185 °C / 364 °F steam

Table 29: BJ, High performance coils

Valve type	Coil type	Voltage tolerance	Supply voltage [V]	Frequency [Hz]	Power consumption [W]	Wire length		Code no.
						[in.]	[cm]	
EV220B 6-50 EV210B EV215B EV225B EV250B	BJ024CS	±10%	24	50 / 60	14	7	18	018F4100
	BJ120CS	±10%	110	50 / 60	16	7	18	018F4110
			120	60	15			
	BJ240CS	±10%	208 – 240	60	14	7	18	018F4120
			230	50	17			

Table 30: Technical data

Design	In accordance with UL 429
Power consumption, cut in	49 VA
Insulation of coil windings	Class H according to IEC 85

Solenoid coils, type BA, BD, BB, BE, BF, BG, BN, BO, BJ, BX, BY, BQ, AM, AS, AZ and AP

Connection	Junction box
Enclosure, IEC 529	Junction box NEMA 2 ~ IP12 – 30
Ambient temperature	-40 – 50 °C / -40 – 122 °F

2.10.1 Dimensions and weight

Figure 21: BJ, High performance coils Junction box

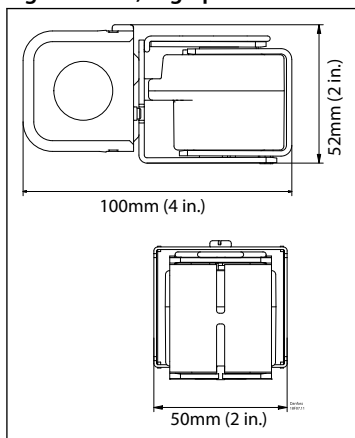
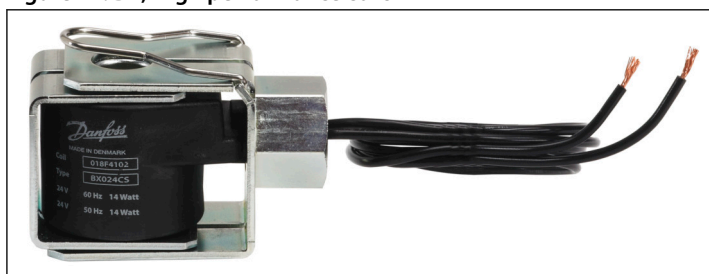


Table 31: BJ, High performance coils Junction box

Type	L [mm]	Weight [kg]
BJ	100	0.39

2.11 BX, High performance coils Conduit hub

Figure 22: BX, High performance coils



Features

- Enclosure: IP54 / NEMA 4
- For UL listed valves (UL 429 and CSA)
- Ambient temperature: Up to 50 °C / 122 °F
- Media temperature: Up to 185 °C / 364 °F steam

Table 32: BX, High performance coils

Valve type	Coil type	Voltage tolerance	Supply voltage [V]	Frequency [Hz]	Power consumption [W]	Wire length		Code no.
						[in.]	[cm]	
EV220B 6-50 EV210B EV215B EV225B EV250B	BX024CS	±10%	24	50 / 60	14	18	46	018F4102
	BX024CS	±10%	24	50 / 60	14	71	180	018F4103
	BX024CS	±10%	24	50 / 60	14	98	250	018F4104
	BX120CS	±10%	110 120	50 / 60 60	16 15	18	46	018F4112
	BX120CS	±10%				36	91	018F4113
	BX120CS	±10%				71	180	018F4114
	BX120CS	±10%	208 – 240 230	60 50	14 17	98	250	018F4115
	BX240CS	±10%				18	46	018F4122
	BX240CS	±10%				98	250	018F4123

Table 33: Technical data

Design	In accordance with UL 429
Power consumption, cut in	49 VA
Insulation of coil windings	Class H according to IEC 85
Connection	Conduit hub
Enclosure, IEC 529	Conduit hub NEMA 4 ~ IP54
Ambient temperature	-40 – 50 °C / -40 – 122 °F

2.11.1 Dimensions and weight

Figure 23: BX, High performance coils Conduit hub

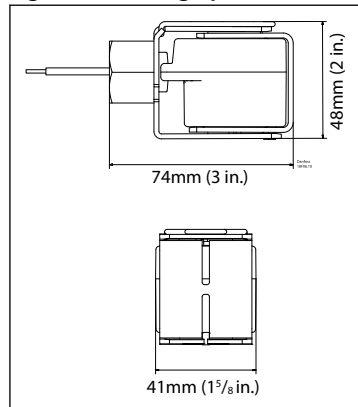


Table 34: BX, High performance coils Conduit hub

Type	L [mm]	Weight [kg]
BX	74	0.33

2.12 BY, High performance coils

Figure 24: BY, High performance coils



Features

- Enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with mounted cable plug
- For UL recognised valves
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU

- EN60730-1
- EN60730-2-8

Table 35: BY, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage varia- tion	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
BQ024CS	-40 – 50	24	±10%	50	14	26		018F7655
		24	±10%	60	12	21		
BQ120BS	-40 – 50	230	±10%	50	16	32		018F7658
		208 – 240	±10%	60	14	28		
BQ240CS	-40 – 50	110	±10%	50	14	27		018F7663
		110 – 120	±10%	60	14	27		

Table 36: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	Up to IP65 / NEMA 4
Plug type	Cable plug (042N0156)

2.12.1 Dimensions and weight

Figure 25: BY, High performance coils

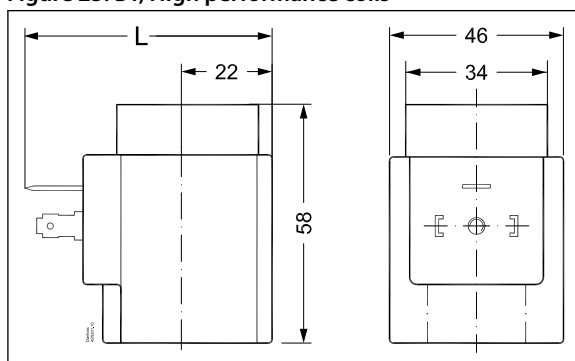


Table 37: BY, High performance coils

Type	L without cable plug [mm]	L with protective cap [mm]	L with cable plug [mm]	Weight [kg]
BY	62	77	85	0.24

2.13 BQ, High performance coils

Figure 26: BQ, High performance coils



Features

- Enclosure:

Solenoid coils, type BA, BD, BB, BE, BF, BG, BN, BO, BJ, BX, BY, BQ, AM, AS, AZ and AP

- IP00 version with DIN 43650 A spade connectors
- IP20 version with protective cap
- IP65/IP67 version with mounted cable plug
- Max. media temperature: 185 °C steam
- For UL recognised valves **cRU[®]us**
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 38: BQ, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage varia- tion	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
BQ024CS	-40 – 40	24	-15%, 10%	50	10	17	cRU[®]us	018F4517
		24	-15%, 10%	60	9	16		
BQ120BS	-40 – 40	110 / 120	-15%, 6%	60	13.5	19	cRU[®]us	018F4519
BQ240CS	-40 – 40	230	-15%, 6%	50	10	17	cRU[®]us	018F4511
		208 / 240	-6%, 6%	60	9.5	16		

Table 39: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	Up to IP65 / NEMA 4
Plug type	Cable plug (042N0156)

2.13.1 Dimensions and weight

Figure 27: BQ, High performance coils

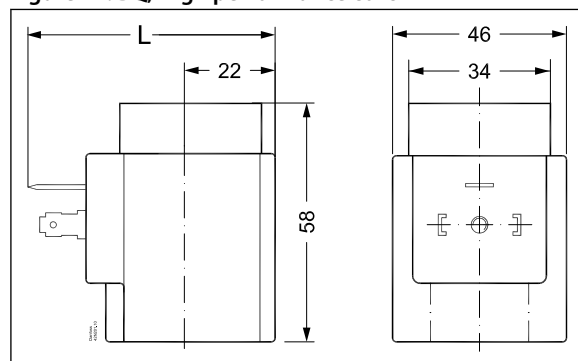
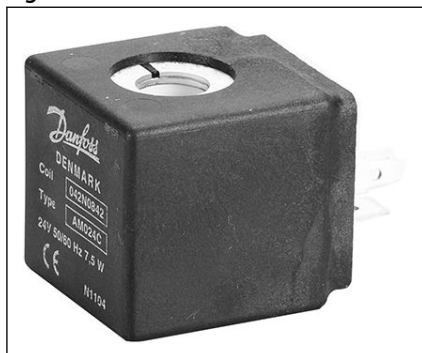


Table 40: BQ, High performance coils

Type	L without cable plug [mm]	L with protective cap [mm]	L with cable plug [mm]	Weight [kg]
BY	62	77	85	0.24

2.14 AM coil

Figure 28: AM coi



Features

- Cable plug enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with cable plug
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 41: AM coil

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Code no.
					[W]	[VA]	
AM024C	-40 – 50	24	±10%	60	5.5	11	042N0842
		24	±10%	50	7.5	14	
AM110C	-40 – 50	110	±10%	60	5.5	11	042N0845
		110	±10%	50	7.5	14	
AM230C	-40 – 50	230	±10%	60	6.5	13	042N0840
		230	±10%	50	9.5	18	
AM240C	-40 – 50	240	±10%	60	5.5	11	042N0841
		240	±10%	50	7.5	15	
AM012D	-40 – 50	12	±10%	DC	8.5	–	042N0848
AM024D	-40 – 50	24	±10%	DC	9	–	042N0843

Table 42: Technical data

Design	In accordance with VDE 0580
Power consumption, cut in	22.5 VA AC coils only
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	IP00 with spade connector, IP65 with cable plug
Duty rating	Continuous
Plug type	Cable plug (042N0156)

2.14.1 Dimensions and weight

Figure 29: AM coil

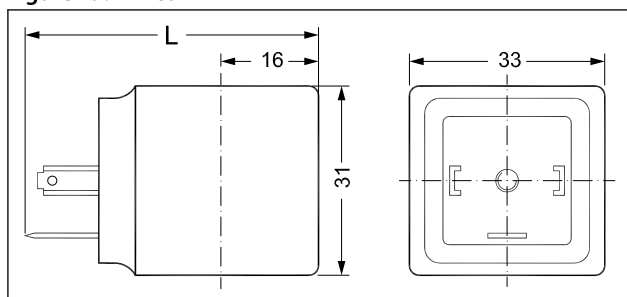
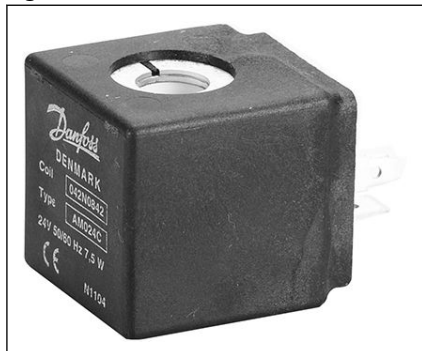


Table 43: AM coil

Type	L without cable plug [mm]	L with cable plug [mm]	L with protective cap [mm]	Weight [kg]
AM	48	72	64	0.10

2.15 AP, Compact UL recognised coils

Figure 30: AP Coil



Features

- Cable plug enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with cable plug
- For UL recognised valves
- Ambient temperature: Up to 50 °C / 122 °F
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 44: AP, Compact UL recognised coils

Type	Tambient [°C / °F]	Supply voltage [V]	Voltage varia- tion	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
AP240C	-40 – 50 / -40 – 122	208 – 240	±10%	60	5.5	11		042N4291
		230		50	7.5	15		
AP120B	-40 – 50 / -40 – 122	110 – 120	±10%	60	5	11		042N4292
AP024B	-40 – 50 / -40 – 122	24	±10%	60	5	11		042N4293

Table 45: Technical data

Design	In accordance with VDE 0580
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	IP00 with spade connector, IP65 / NEMA 2 with cable plug
Duty rating	Continuous
Plug type	Cable plug (042N0156)

2.15.1 Dimensions and weight

Figure 31: AP, Compact UL recognised coils

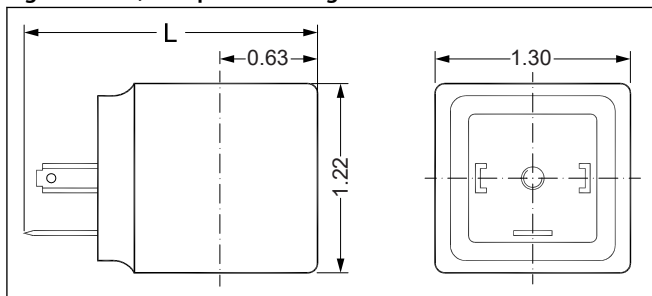


Table 46: AP, Compact UL recognised coils

Type	L without cable plug [mm]	L with cable plug [mm]	L with protective cap [mm]	Weight [kg]
AP	48	72	64	0.10

2.16 AS/AZ, Compact UL recognised clip-on coils

Figure 32: AS/AZ Coil



Features

- Cable plug enclosure:
 - IP00 version with DIN 43650 A spade connectors
 - IP20 version with protective cap
 - IP65/IP67 version with cable plug
- Ambient temperature: Up to 50 °C / 122 °F
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8
- UL recognized

Table 47: AS/AZ, Compact UL recognised clip-on coils

Type	Tambient [°C / °F]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
AS024CS	-40 – 50 / -40 – 122	24	-10%, +6%	50	9.5	18		042N7608
		24		60	7.0	14		
AS230CS	-40 – 50 / -40 – 122	230	-10%, +6%	50	8.0	16		042N7601
		208 – 240	±6%	60	7.0	14		
AZ012DS	-40 – 50 / -40 – 122	12	-10%, +6%	DC	6.0	-		042N7616
AZ024DS	-40 – 50 / -40 – 122	24	-10%, +6%	DC	6.5	-		042N7617

Table 48: Technical data

Design	In accordance with UL 429
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	IP00 with spade connector, IP65 / IP67 with cable plug
Duty rating	Continuous
Plug type	Cable plug (042N1256)

2.16.1 Dimensions and weight

Figure 33: AS/AZ, Compact UL recognised clip-on coils

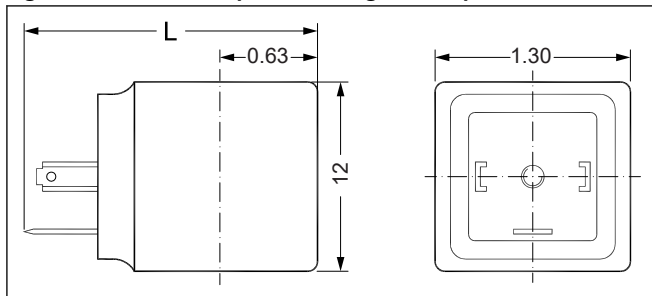
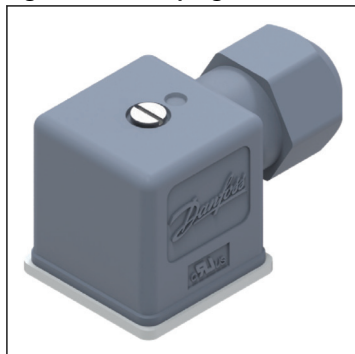


Table 49: AS/AZ, Compact UL recognised clip-on coils

Type	L without cable plug [mm]	L with cable plug [mm]	L with protective cap [mm]	Weight [kg]
AS/AZ	48	72	64	0.10

2.17 Cable plug

Figure 34: Cable plug



Features

- Enclosure: IP67 / NEMA 4X
- For use with Danfoss coils type AL, AM, AS, AZ, BA, BB, BD, BN (Center boss), BQ, and BY
- AC / DC all voltages up to 250 V
- In accordance with:
 - RoHS 2011/65/EU
 - LVD 2014/35/EU
 - **UL** **US**
- Design according to:
 - Flammability
 - UL94 V0
 - IEC 60695-11-5

Table 50: DIN 18

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

Figure 35: Pin

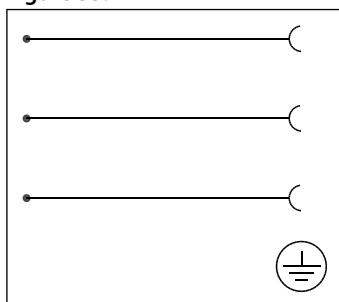


Table 51: Technical data

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	
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 (Polymide)
	Terminal block	PA66 GF (Polymide)
	Profiled gasket	Silicone

2.17.1 Dimensions and weight

Figure 36: Cable plug

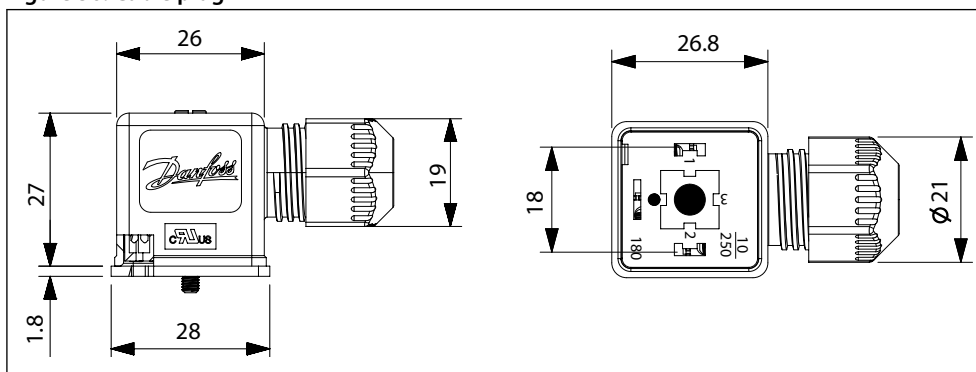


Table 52: Cable plug

Type	Weight [kg / lbs]
Cable plug	0.026 / 0.057

2.18 Cable plug

Figure 37: Cable plug



Features

- Enclosure: IP65 / NEMA 4
- For use with Danfoss coils type AL, AM, AS, AZ, BA, BB, BD, BN (Center boss), BQ, and BY
- AC / DC all voltages up to 250 V
- In accordance with:
 - RoHS 2011/65/EU
 - LVD 2014/35/EU
 - US
- Design according to:
 - Flammability
 - UL94 V0
 - IEC 60695-11-5

Table 53: DIN 18

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

Figure 38: Pin

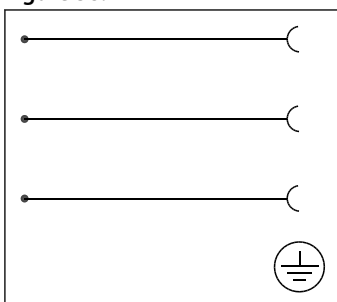


Table 54: Technical data

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	
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 (Polymide)
	Terminal block	PA66 GF (Polymide)
	Profiled gasket	NBR

2.18.1 Dimensions and weight

Figure 39: Cable plug

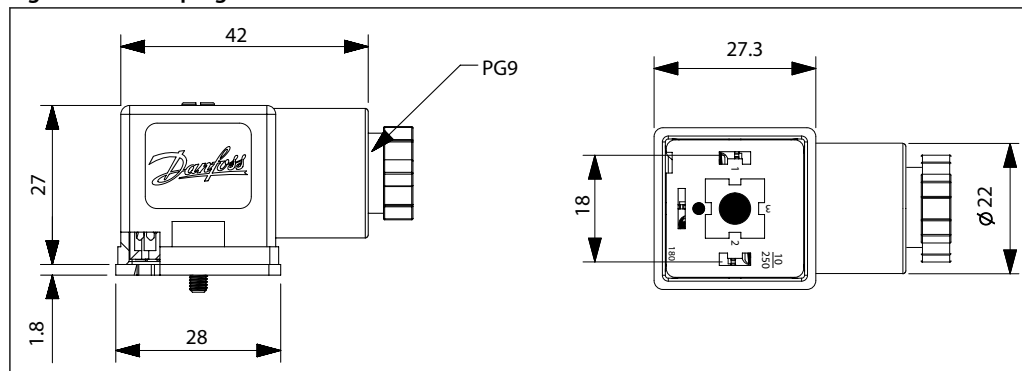
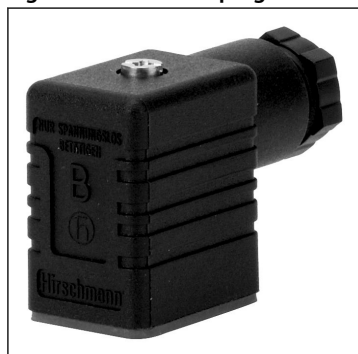


Table 55: Cable plug

Type	Weight [kg / lbs]
Cable plug	0.031 / 0.067

2.19 Industrial plug

Figure 40: Industrial plug



Features

- Enclosure: Up to IP65
- For use with Danfoss coils type AB and AC
- AC / DC all voltages up to 250 V
- Approved in accordance with:

- US
- CSA

Table 56: DIN 11

Industrial plug size	Description	Suitable for coil types	Code no.
DIN 11	Cable plug for 6.3 x 0.8 mm spade connectors	AB, AC	042N0139

Figure 41: Pin

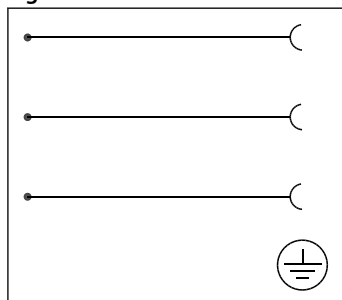


Table 57: Technical data

Type	GM 209 J (Black)	
Design	DIN 43650-B	
Cable gland	PG 9	
Poles	2 + PE	
Max. voltage	250 V AC / DC	
Enclosure	IP65 (IEC 60529)	
Max. operating current	16 A	
Contact resistance	< 10m Ω	
Cable diameter	Ø4.5 – 7 mm	
Wire cross section	Max. 1.5 mm ²	
Ambient temperature	-30 – 90 °C / -22 – 194 °F	
Materials	Contacts:	CuSn (Tin plated)
	Terminal block:	PA 6 GF
	Flat gasket:	NBR
	Housing:	PA 6 GF

2.19.1 Dimensions and weight

Figure 42: Industrial plug

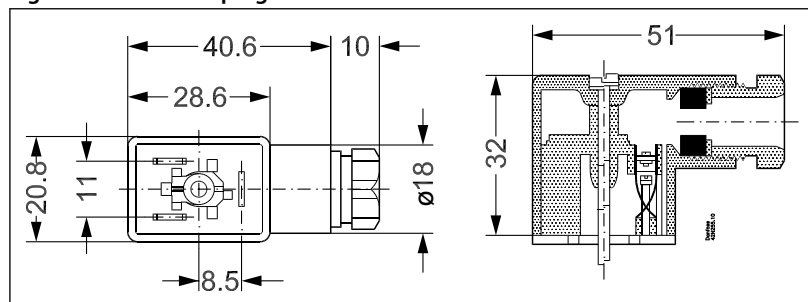


Table 58: Industrial plug

Type	Weight [kg / lbs]
Industrial plug	0.023 / 0.050

2.20 Cable plug (LED + Varistor)

Figure 43: Cable plug



Features

- Enclosure: Up to IP65
- For use with Danfoss coils type AM, AK, AL, AS, AZ, BA, BD, BB, and BY
- 24 V AC / DC and 230 V AC version
- DIN 18
- Approved in accordance with: CSA
- In accordance with:
 - RoHS 2011/65/EU
 - LVD 2014/35/EU

Table 59: DIN 18

Industrial plug size	Voltage		Voltage variation	Suitable for coil types	LED colour	Built-in VDR ⁽¹⁾ resistor	Code no.
	[V AC]	[V DC]					
DIN 18	24	24	±10%	AM, AL, AS, AZ, BA, BB, BD, BY	Red	Yes	042N0263
DIN 18	230	–	±10%	AM, AL, AS, AZ, BA, BB, BD, BY	Red	Yes	042N0265

⁽¹⁾ Protects against voltage peaks

Figure 44:

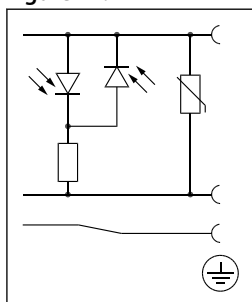


Table 60: Technical data

Design	EN 175301-803 A		
Power consumption	Max. 5 mA		
Approval	CSA		
Enclosure	IP65 (IEC 60529)		
Max. operating current	1.5 A clamping contact		
Contact resistance	≤ 4m Ω		
Protection against wrong polarity	Yes		
Cable diameter	6 – 8 mm and 8 – 10 mm		
Wire cross section	Max. 1.5 mm ²		
Ambient temperature	-25 – 60 °C / -13 – 140 °F		
Materials	Contacts:	CuZn, Cu/Sn-plated	
	Terminal block:	PA6 + 30% FG, black	
	Flat gasket:	NBR LABS-fre	
	Housing:	PA6	
	Wire holder:	PA6.6 + 50% FG P7,5 black	

2.20.1 Dimensions and weight

Figure 45: Cable plug (LED + Varistor)

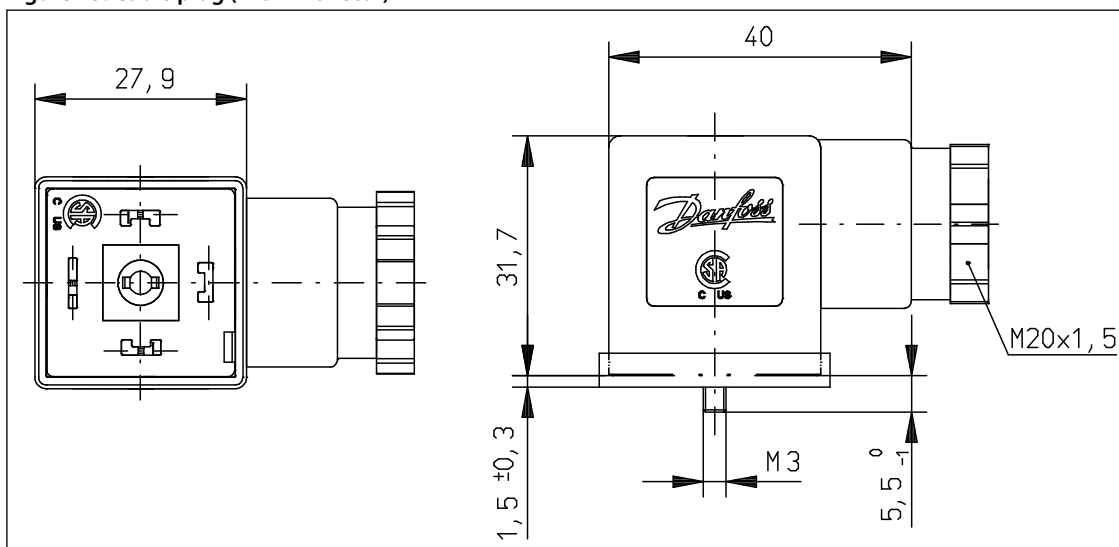
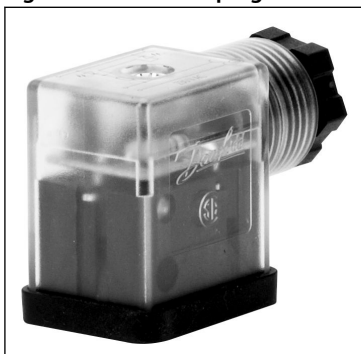


Table 61: Cable plug (LED + Varistor)

Type	Weight [kg / lbs]
Cable plug (LED + Varistor)	0.027 / 0.059

2.21 Industrial plug (LED + Varistor)

Figure 46: Industrial plug



Features

- Enclosure: Up to IP65
- For use with Danfoss coils type AB and AC
- 24 V AC
- Approved in accordance with: CSA
- In accordance with:
 - RoHS 2011/65/EU
 - LVD 2014/35/EU

Table 62: DIN 11

Industrial plug size	Voltage		Suitable for coil types	LED colour	Built-in VDR ⁽¹⁾ resistor	Code no.
	[V AC]	[V DC]				
DIN 11	24	24	AB, AC	Red	Yes	042N0267

⁽¹⁾ Protects against voltage peaks.

Figure 47:

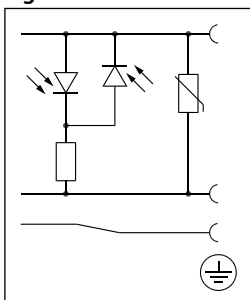


Table 63: Technical data

Design	Industrial form
Supply voltage variation	±10%
Power consumption	Max. 5 mA
Approval	CSA
Enclosure	IP65 (IEC 60529)
Max. operating current	1.5 A clamping contact
Contact resistance	≤ 4m Ω
Protection against wrong polarity	Yes
Cable diameter	5 – 6 mm and 6 – 9 mm
Wire cross section	Max. 1 mm ²
Ambient temperature	-25 – 60 °C / -13 – 140 °F

Solenoid coils, type BA, BD, BB, BE, BF, BG, BN, BO, BJ, BX, BY, BQ, AM, AS, AZ and AP

Materials	Contacts:	CuZn, Cu/Sn-plated
	Terminal block:	PA6 + 30% FG, black
	Flat gasket:	NBR LABS-fre
	Housing:	PA6
	Wire holder:	PA6.6 + 50% FG P7,5 black

2.21.1 Dimensions and weight

Figure 48: Industrial plug (LED + Varistor)

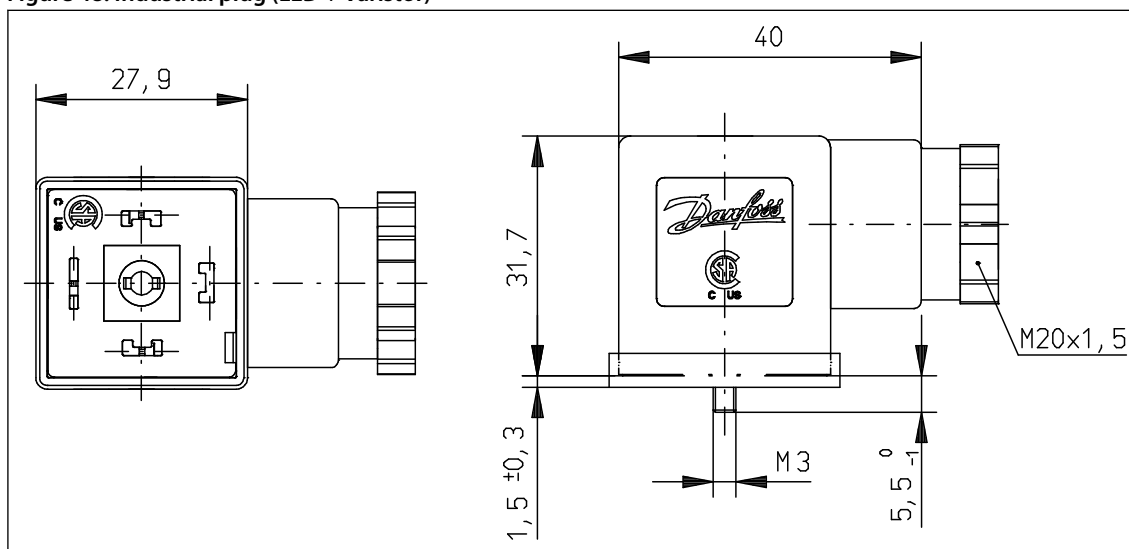


Table 64: Industrial plug (LED + Varistor)

Type	Weight [kg / lbs]
Industrial plug (LED + Varistor)	0.027 / 0.059

2.22 Universal electronic multi-timer Type ET 20 M

Figure 49: ET 20 M



Features

- Outside adjustments
- Light weight and small size
- External adjustable timing from 1 minute to 45 minutes with 1 to 15 seconds drain open
- One solid state timer fits all coil voltages from 24 – 240 V AC

- Light diodes for indication
- All in one unit
- Manual override (test button)

Table 65: BA024A

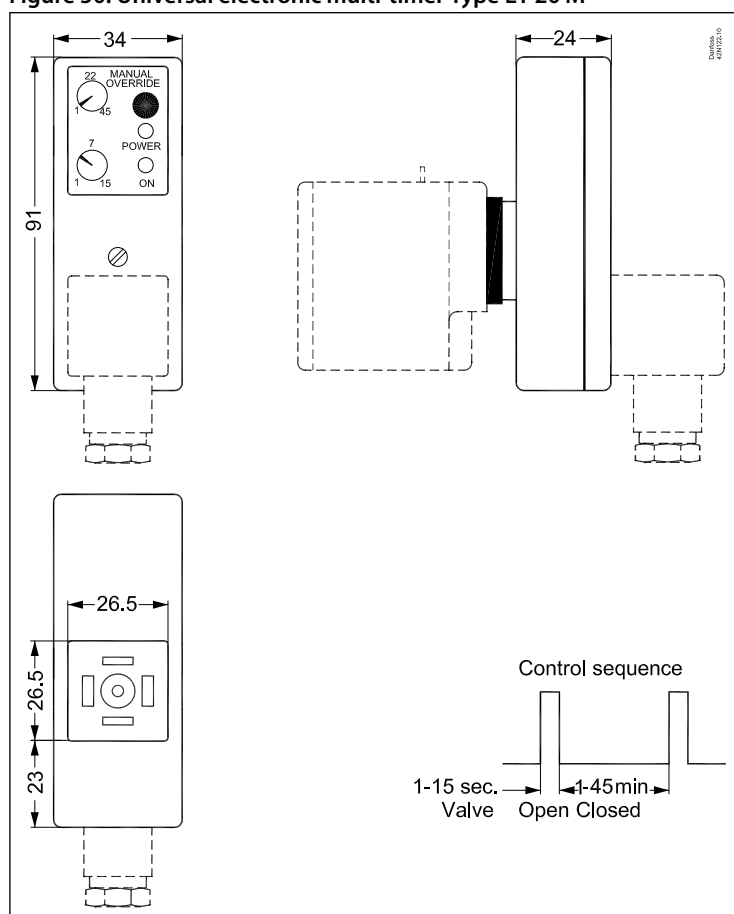
Type	Voltage [V]	Suitable for coil types	Code no.
BA024A	24 – 240	AL, AM, AS, AZ, BA, BD, BB	042N0185

Table 66: Technical data

Type	ET 20 M
Voltage	24 – 240 V AC / 50 – 60 Hz
Power rating	Max. 20 W
Enclosure	IP00, IP65 with cable plug
Electrical connection	DIN connector (DIN 43650-A)
Ambient operating temperature range	-10 – 50 °C
Function	Start with pulse
Interval timer	0 – 45 min.
"On" timer	0 – 15 sec.

2.22.1 Dimensions and weight

Figure 50: Universal electronic multi-timer Type ET 20 M



3 Online support

Danfoss offers a wide range of support along with our products, including digital product information, software, mobile apps, and expert guidance. See the possibilities below.

The Danfoss Product Store



The Danfoss Product Store is your one-stop shop for everything product related—no matter where you are in the world or what area of the cooling industry you work in. Get quick access to essential information like product specs, code numbers, technical documentation, certifications, accessories, and more.

Start browsing at store.danfoss.com.

Find technical documentation



Find the technical documentation you need to get your project up and running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more.

Start searching now at www.danfoss.com/en/service-and-support/documentation.

Danfoss Learning



Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications, industry topics, and trends that will help you do your job better.

Create your Danfoss Learning account for free at www.danfoss.com/en/service-and-support/learning.

Get local information and support



Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert—all in your own language.

Find your local Danfoss website here: www.danfoss.com/en/choose-region.

Spare Parts



Get access to the Danfoss spare parts and service kit catalog right from your smartphone. The app contains a wide range of components for air conditioning and refrigeration applications, such as valves, strainers, pressure switches, and sensors.

Download the Spare Parts app for free at www.danfoss.com/en/service-and-support/downloads.

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.