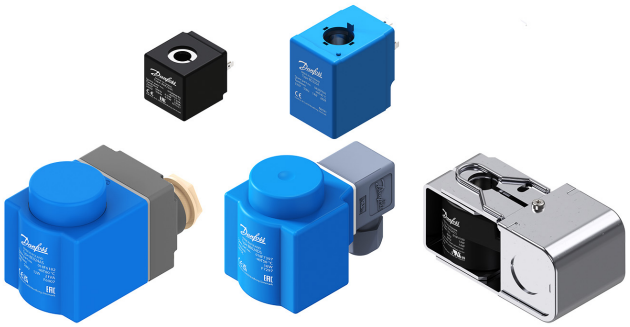
ENGINEERING TOMORROW

Data Sheet

Solenoid coils
Type **BA, BD, BB, BE, BF, BG, BH, BN, 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 and UL.

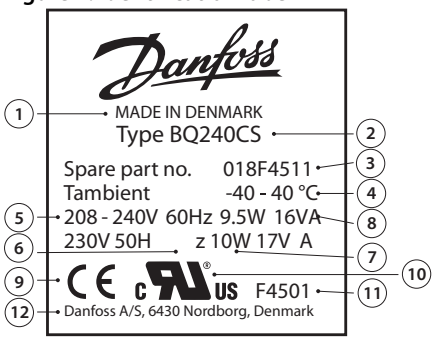
Features

- 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	Tambient [°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 (042N1256)

2.1.1 Dimensions and weight

Figure 3: BA, High performance coils

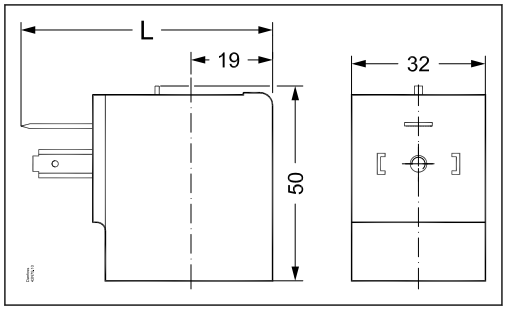


Table 3: BA, High performance coils

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 (042N1256)

2.2.1 Dimensions and weight

Figure 5: BD, High performance coils

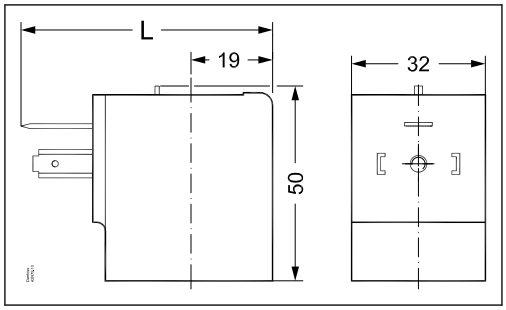


Table 6: BD, High performance coils

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	Tambient [°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 (042N1256)

2.3.1 Dimensions and weight

Figure 7: BB, High performance coils

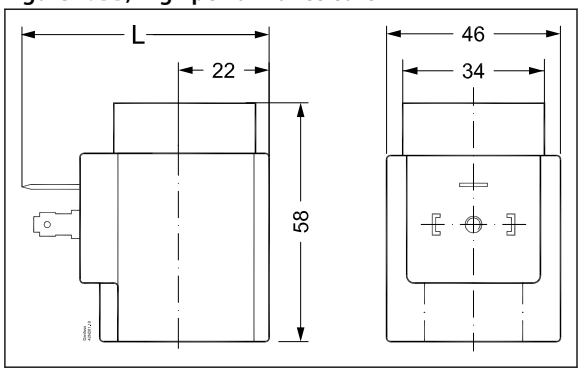


Table 9: BB, High performance coils

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

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

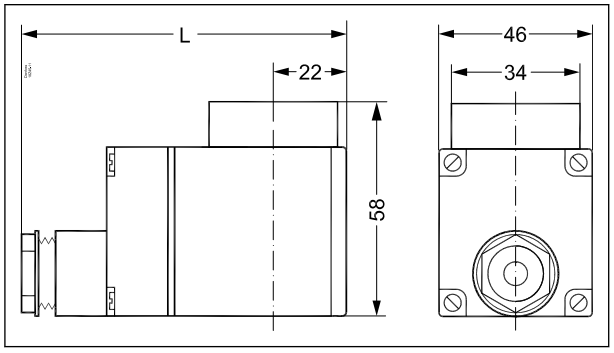
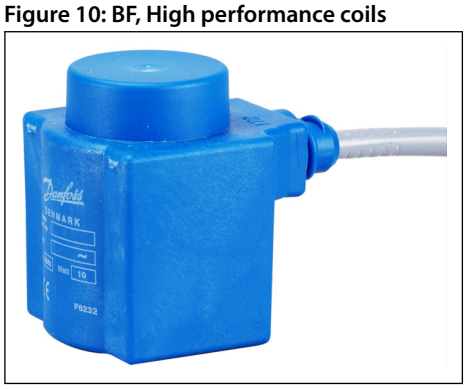


Table 12: BE, High performance coils

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

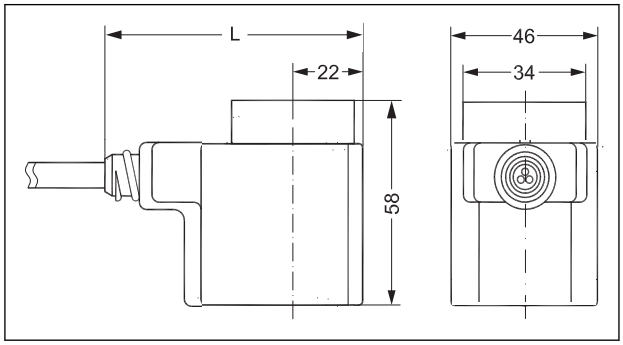
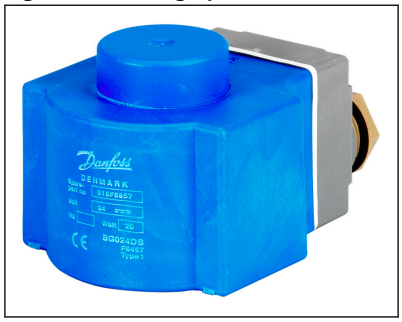


Table 15: BF, High performance coils

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	20	–	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

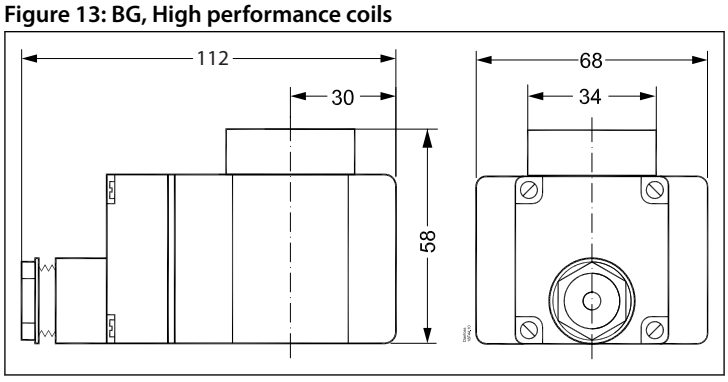
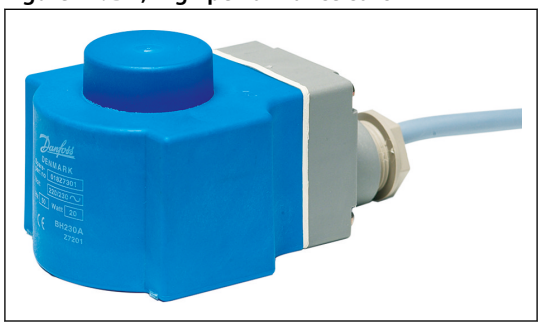


Table 18: BG, High performance coils

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

2.7 BH, High performance coils Hum-free

Figure 14: BH, 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 [W]	[VA]	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

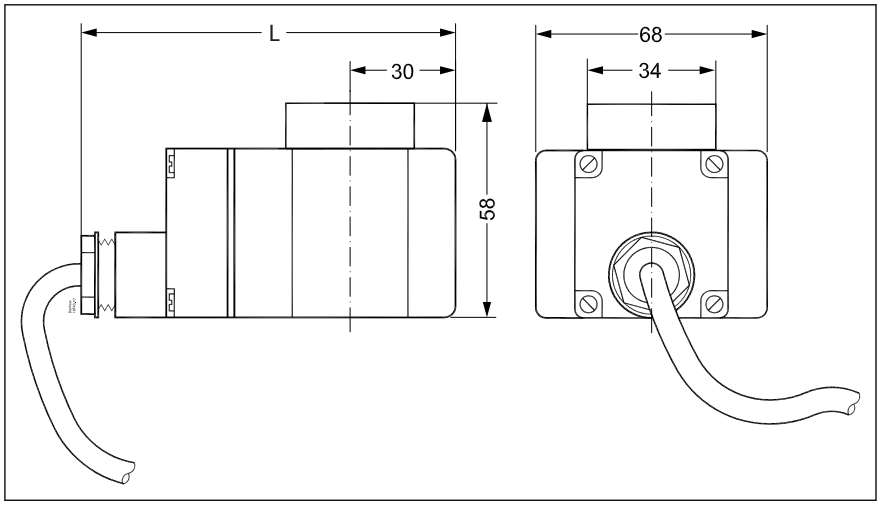
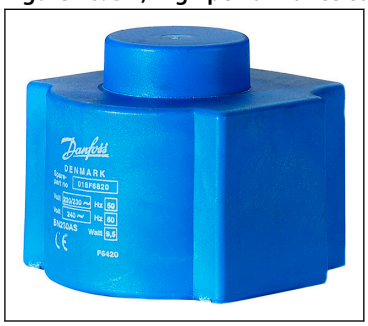


Table 21: BN, High performance coils

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 variation	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
BN024DS	-40 – 50	24	±10%	DC	20	–	c UL us	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

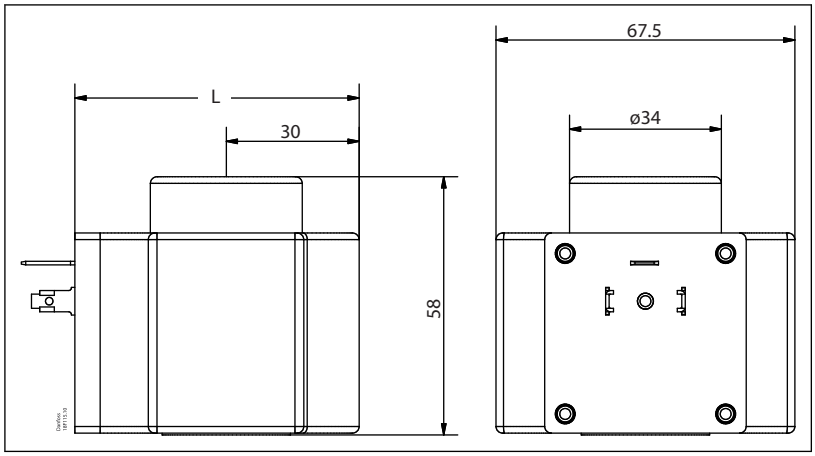


Table 24: BN, High performance coils Center boss

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

2.9 BJ, High performance coils Junction box

Figure 18: 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 25: 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 26: 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	Junction box
Enclosure, IEC 529	Junction box NEMA 2 ~ IP12 – 30
Ambient temperature	-40 – 50 °C / -40 – 122 °F

2.9.1 Dimensions and weight

Figure 19: BJ, High performance coils Junction box

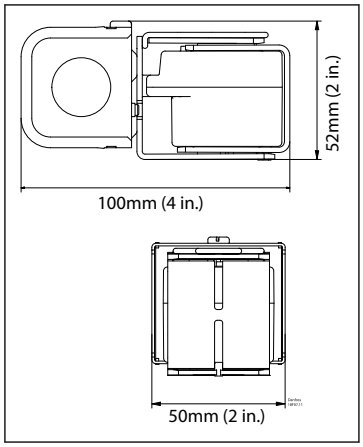
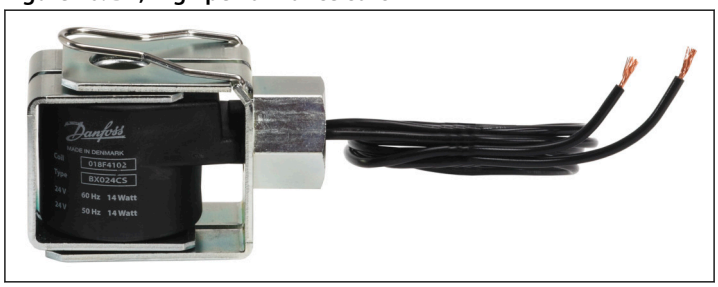


Table 27: BJ, High performance coils Junction box

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

2.10 BX, High performance coils Conduit hub

Figure 20: 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 28: 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%				98	250	018F4115
	BX240CS	±10%	208 – 240	60	14	18	46	018F4122
	BX240CS	±10%	230	50	17	98	250	018F4123

Table 29: 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

2.10.1 Dimensions and weight

Figure 21: BX, High performance coils Conduit hub

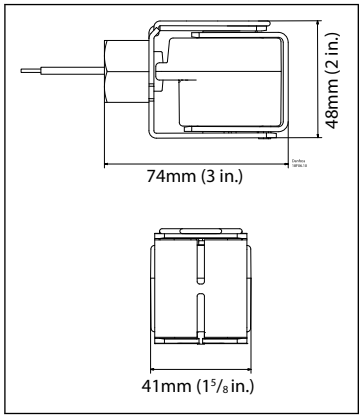


Table 30: BX, High performance coils Conduit hub

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

2.11 BY, High performance coils

Figure 22: 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 31: BY, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
BY024CS	-40 – 50	24	±10%	50	14	26	c UL us	018F7655
		24	±10%	60	12	21		
BY240CS	-40 – 50	230	±10%	50	16	32	c UL us	018F7658
		208 – 240	±10%	60	14	28		
BY120BS	-40 – 50	110	±10%	50	14	27	c UL us	018F7663
		110 – 120	±10%	60	14	27		

Table 32: 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 (042N1256)

2.11.1 Dimensions and weight

Figure 23: BY, High performance coils

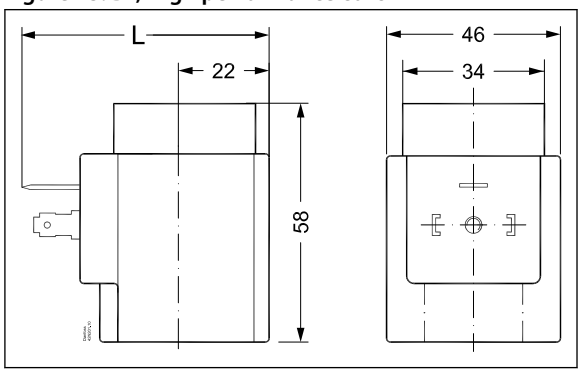


Table 33: BY, High performance coils

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

2.12 BQ, High performance coils

Figure 24: BQ, 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

- Max. media temperature: 185 °C steam
- For UL recognised valves
- In accordance with:
  - RoHS Directive 2011/65/EU
  - Low Voltage Directive 2014/35/EU
    - EN60730-1
    - EN60730-2-8

Table 34: BQ, High performance coils

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
BQ024CS	-40 – 40	24	-15%, 10%	50	10	17		018F4517
		24	-15%, 10%	60	9	16		
BQ120BS	-40 – 40	110 / 120	-15%, 6%	60	13.5	19		018F4519
BQ240CS	-40 – 40	230	-15%, 6%	50	10	17		018F4511
		208 / 240	-6%, 6%	60	9.5	16		
BQ220BS	-40 – 40	220	-15%, 6%	60	12	19		018F4520

Table 35: 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 (042N1256)

2.12.1 Dimensions and weight

Figure 25: BQ, High performance coils

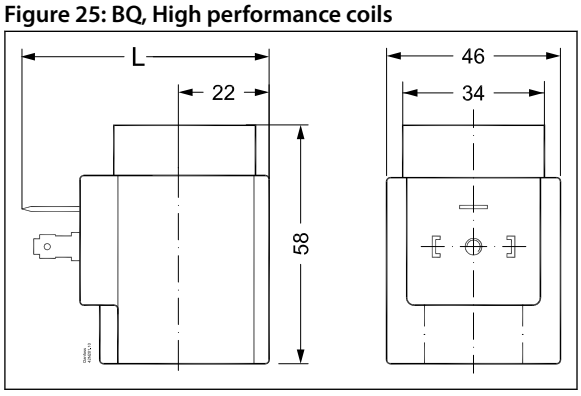


Table 36: BQ, High performance coils

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

2.13 AM coil

Figure 26: 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 37: 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 38: 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 (042N1256)

2.13.1 Dimensions and weight

Figure 27: AM coil

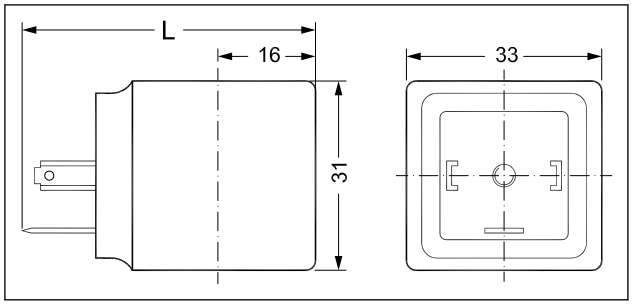


Table 39: AM coil

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

2.14 AP, Compact UL recognised coils

Figure 28: 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 40: AP, Compact UL recognised coils

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

Table 41: 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 (042N1256)

2.14.1 Dimensions and weight

Figure 29: AP, Compact UL recognised coils

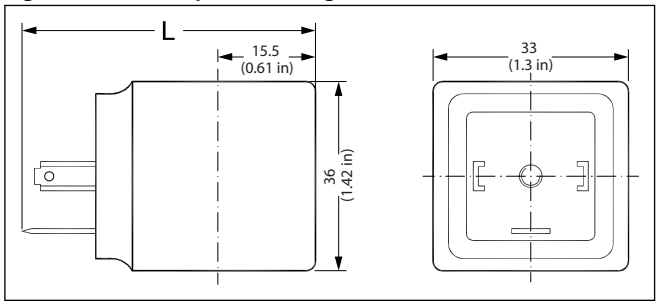
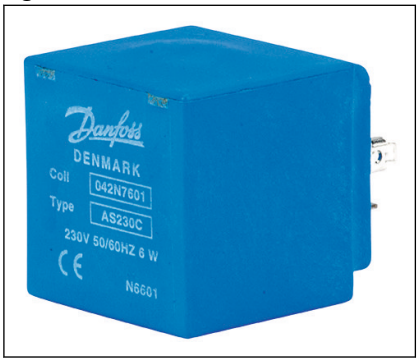


Table 42: AP, Compact UL recognised coils

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

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

Figure 30: 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 43: 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 44: 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)

2.15.1 Dimensions and weight

Figure 31: AS/AZ, Compact UL recognised clip-on coils

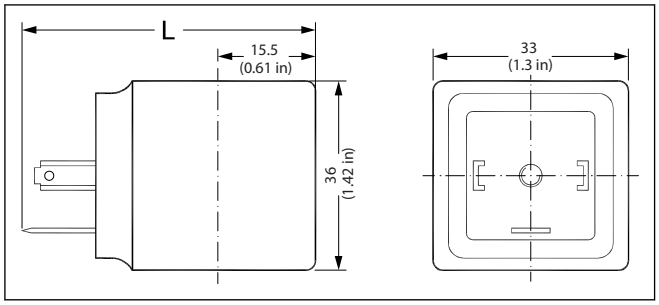
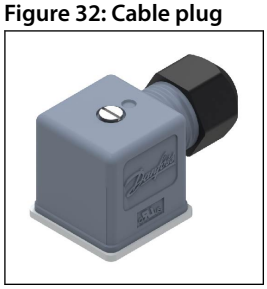


Table 45: AS/AZ, Compact UL recognised clip-on coils

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

2.16 Cable plug

Figure 32: 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
  - c UL us
- Design according to:
  - Flammability
    - UL94 V0
    - IEC 60695-11-5

Table 46: DIN 18

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

Figure 33: Pin

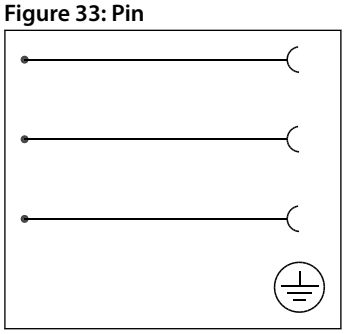


Table 47: Technical data

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

2.16.1 Dimensions and weight

Figure 34: Cable plug

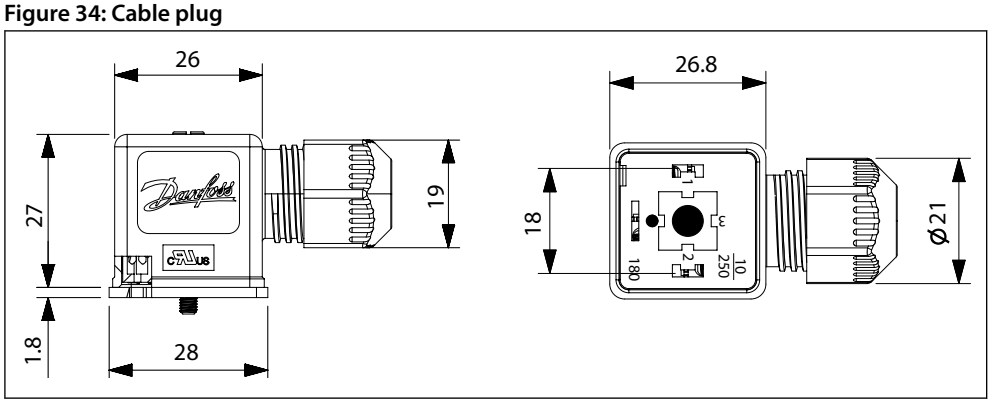
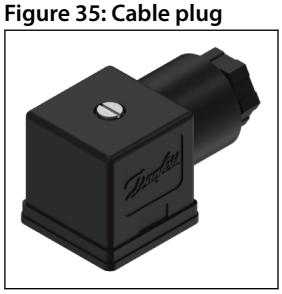


Table 48: Cable plug

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

2.17 Cable plug

Figure 35: 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
  - c UL us
- Design according to:
  - Flammability

- UL94 V0
- IEC 60695-11-5

Table 49: DIN 18

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

Figure 36: Pin

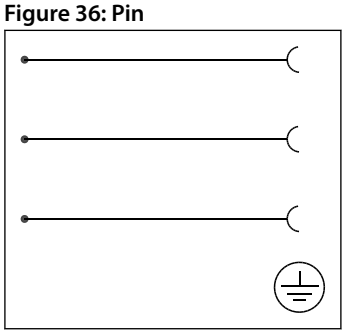


Table 50: Technical data

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 mm²	
Ambient temperature	-40 - 90°C / -40 - 194°F	
Materials	Housing	PA66 GF (Polymide)
	Terminal block	PA66 GF (Polymide)
	Profiled gasket	NBR

2.17.1 Dimensions and weight

Figure 37: Cable plug

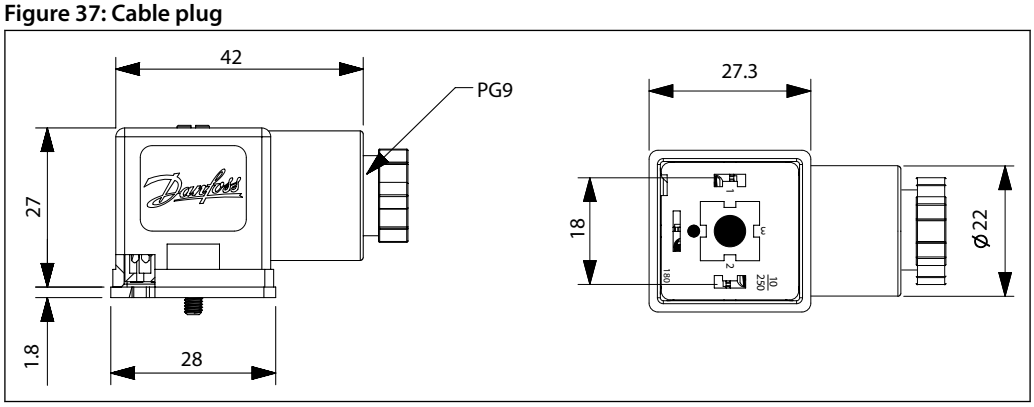


Table 51: Cable plug

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

2.18 Industrial plug

Figure 38: 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:
  - c UL us
  - CSA

Table 52: 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 39: Pin

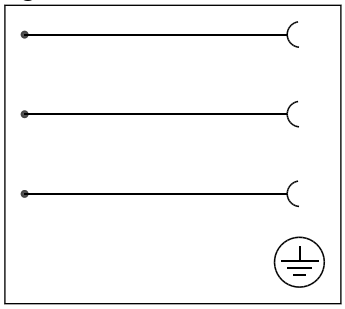


Table 53: Technical data

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

2.18.1 Dimensions and weight

Figure 40: Industrial plug

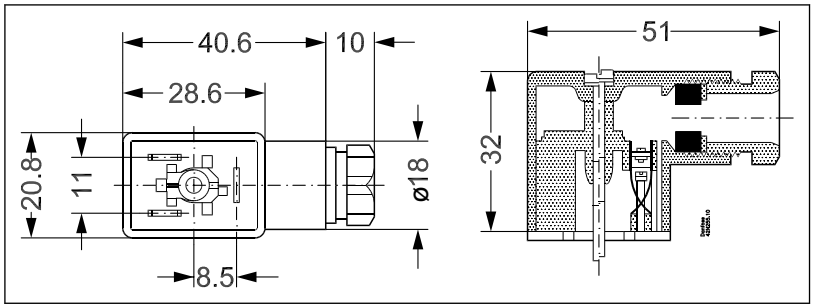


Table 54: Industrial plug

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

2.19 Cable plug (LED + Varistor)

Figure 41: 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 55: 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 42:

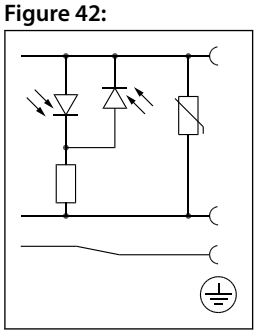


Table 56: Technical data

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

2.19.1 Dimensions and weight

Figure 43: Cable plug (LED + Varistor)

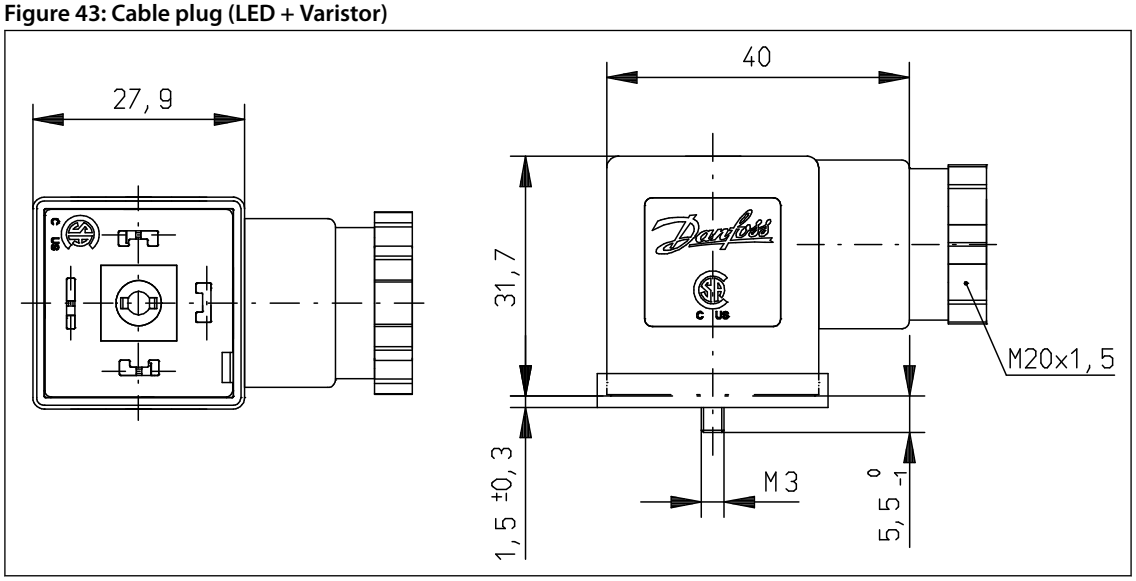


Table 57: Cable plug (LED + Varistor)

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

2.20 Industrial plug (LED + Varistor)

Figure 44: 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 58: 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 45:

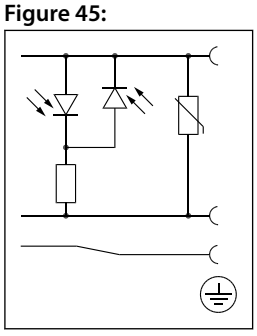


Table 59: Technical data

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	
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 46: Industrial plug (LED + Varistor)

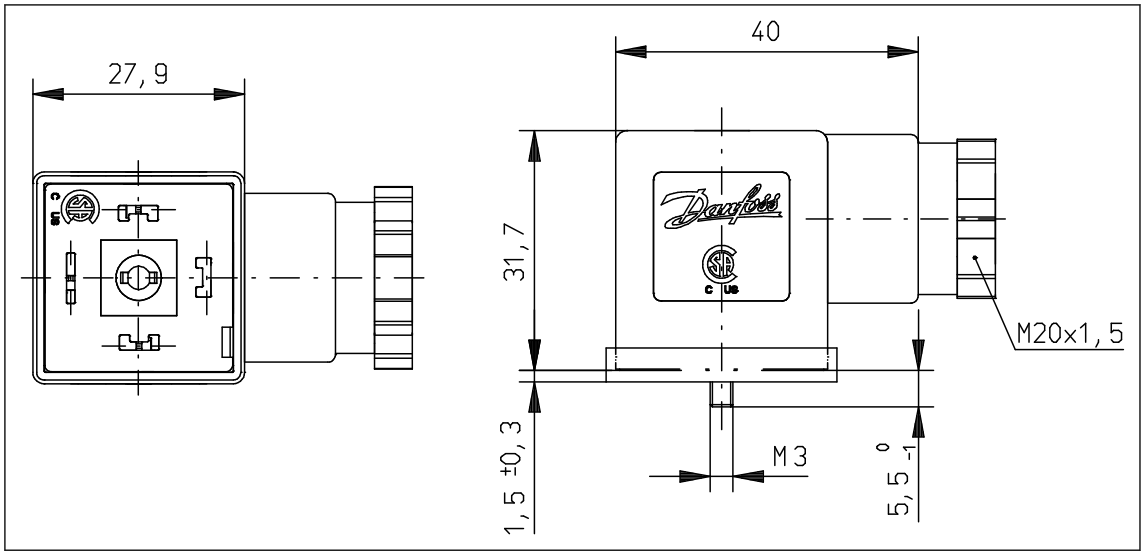


Table 60: Industrial plug (LED + Varistor)

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

2.21 Universal electronic multi-timer Type ET 20 M

Figure 47: 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 61: BA024A

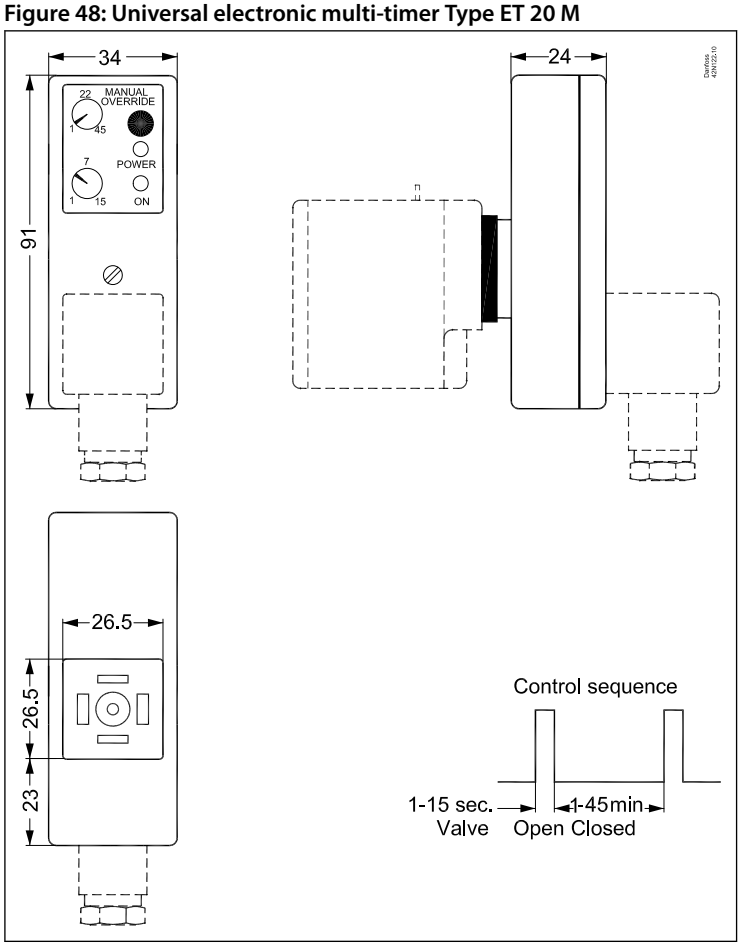
Type	Voltage [V]	Suitable for coil types	Code no.
BA024A	24 – 240	AL, AM, AS, AZ, BA, BD, BB	042N0185

Table 62: 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.

2.21.1 Dimensions and weight

Figure 48: Universal electronic multi-timer Type ET 20 M



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