ENGINEERING TOMORROW



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.

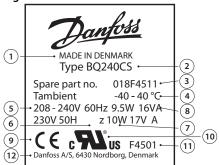
- Encapsulated coils with long operating life, even under extreme conditions
- Standard coils for AC or DC
- Standard coils from 12 V 400 V, 50, 60, 50 / 60 Hz or DC
- Standard coils available with:
- o Cable plugs
- Industrial plugs
- \circ Terminal box
- o 3 core cable
- Junction box
- Conduit hub



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: $(-40 40 \,^{\circ}\text{C} = \text{Ambient temperature range: } -40 \,^{\circ}\text{C} 40 \,^{\circ}\text{C})$
- **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:
 - o 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:
- o RoHS Directive 2011/65/EU
- ∘ Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Table 1: BA, High performance coils

Tuna	Tambient	Supply voltage	Voltage variation	Frequency	Power cor	sumption	Code no.
Туре	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code no.
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

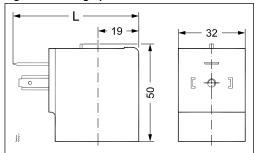


Table 3: BA, High performance coils

Туре	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



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

Table 4: BD, High performance coils

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

Table 5: Technical data

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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

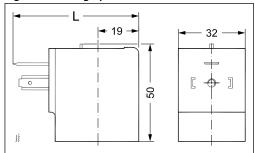


Table 6: BD, High performance coils

Туре	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



- · Enclosure:
- IP00 version with DIN 43650 A spade connectors
- IP20 version with protective cap
- o 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

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Type Tam	Tambient	Supply voltage	Voltage variation	Frequency	Power consumption		Code no.
Туре	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code 110.
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
BB440C3	-40 – 30	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
DBTTOCS	-40 - 30	110	±10%	60	13	22	01017300
BB230CS	-40 – 50	220 – 230	±10%	50	16	31	018F7363
DB230C3	-40 - 30	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

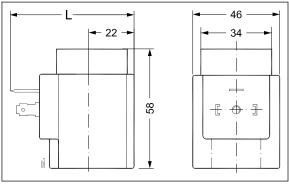


Table 9: BB, High performance coils

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

2.4 BE, High performance coils

Figure 8: BE, High performance coils



- 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	Supply voltage	Voltage variation	Voltage variation Frequency [Hz]	Voltogovogistion	Valta maniation Frequency	Frequency	Power consumption		Code no.
Туре	[°C]	[V]			[W]	[VA]	Code IIo.			
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			



Turno	Type	Supply voltage	upply voltage Voltage variation	Frequency	Power consumption		Code no.
Туре	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code no.
BE440CS	-40 – 80	380 – 400	-15%, 10%	50	13	23	018F6703
BE440C3	-40 - 80	440	-15%, 10%	60	14	24	01860703
BE024BS	-40 – 80	24	-15%, 10%	60	14	25	018F6715
BE115CS	-40 – 80	100	-15%, 10%	50	11	19	018F6710
BETTIGG	-40 - 80	115	-15%, 10%	60	13	22	01000/10
BE220BS	-40 – 80	220	-15%, 10%	60	13	23	018F6714
BE110CS	-40 – 50	110	±10%	50	15	28	018F6730
BETTOCS	-40 – 50	110	±10%	60	13	22	01000/30
BE230CS	-40 – 50	220 – 230	±10%	50	17	31	018F6732
BEZSOCS	-40 – 30	220 – 230	±10%	60	14	24	01010732
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

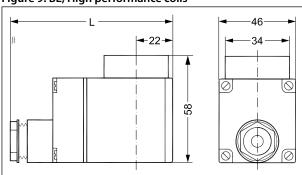


Table 12: BE, High performance coils

Туре	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



- 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

Туре	Tambient	Supply voltage	Voltage variation	Frequency	Power cor	sumption	Code no.
туре	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code no.
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
BF440C3	-40 – 80	440	-15%, 10%	60	15	24	018F6253
BF024AS	-40 – 80	24	-15%, 10%	50	12	20	018F6257
DE115 <i>C</i> C	BF115CS -40 - 80	100	-15%, 10%	50	11	19	018F6260
BETTOCS		115	-15%, 10%	60	13	22	01010200
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
BF110C3	-40 – 30	110	±10%	60	13	23	01010200
BF230CS	40 50	220 – 230	±10%	50	16	31	018F6282
DF230C3	-40 – 50	220 – 230	±10%	60	14	24	01000202

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

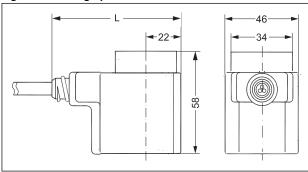


Table 15: BF, High performance coils

Туре	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

Turne	Tambient	Supply voltage	Voltage variation	Frequency	Power cor	sumption	Code no.
Туре	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code no.
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

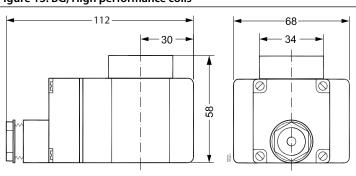




Table 18: BG, High performance coils

Туре	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

Туре	Tambient	Supply voltage	Voltage variation	Frequency	Power consumption	on	Code no.
	[°C]	[V]		[Hz]	[W]	[VA]	
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

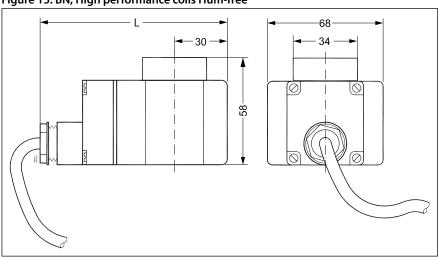




Table 21: BN, High performance coils

Туре	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

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

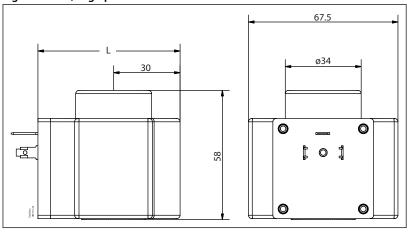


Table 24: BN, High performance coils Center boss

Туре	L [mm]	Weight [kg]
BN	64	0.47

2.9 BO, High performance coils

Figure 18: BO, High performance coils



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

Table 25: BO, High performance coils

Tuno	Tambient	Supply voltage	Voltage variation Frequency		Power cor	Code no.	
Type	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code IIo.
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

Table 20. 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

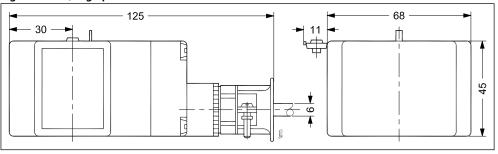


Table 28: BO, High performance coils

Туре	L [mm]	Weight [kg]
ВО	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 tol	Voltage toler-	Supply voltage F	Frequency	Power con- sumption [W]	Wire length			
	_		[Hz]		[in.]	[cm]	Code no.	
EV220B 6-50	BJ024CS	±10%	24	50 / 60	14	7	18	018F4100
EV220B 6-30 EV210B	BJ120CS	±10%	110	50 / 60	16	7	18	018F4110
EV215B	15B	120	60	15	,	10	01014110	
EV225B EV250B BJ240CS	±10%	208 – 240	60	14	7	18	018F4120	
		230	50	17				

Table 30: Technical data

14410 201 1001111041 4414	
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

2.10.1 Dimensions and weight

Figure 21: BJ, High performance coils Junction box

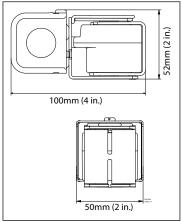


Table 31: BJ, High performance coils Junction box

Туре	L [mm]	Weight [kg]
ВЈ	100	0.39

2.11 BX, High performance coils Conduit hub

Figure 22: BX, High performance coils



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

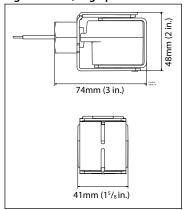


Table 34: BX, High performance coils Conduit hub

Туре	L [mm]	Weight [kg]
BX	74	0.33

2.12 BY, High performance coils

Figure 24: BY, High performance coils



- Enclosure:
- IP00 version with DIN 43650 A spade connectors
- IP20 version with protective cap
- o 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

Туре	Tambient	Supply voltage	Voltage varia-	Frequency	Power cor	sumption	Approval	Code no.
Туре	[°C]	[V]	tion	[Hz]	[W]	[VA]	Арргочаг	code no.
DV02.455	40 50	24	±10%	50	14	26		04057455
BY024CS	-40 – 50	24	±10%	60	12	21	c 711 us	018F7655
		230	±10%	50	16	32		
BY240CS	-40 – 50	208 – 240	±10%	60	14	28	c FLL us	018F7658
		110	±10%	50	14	27		
BY120BS	Y120BS -40 – 50	110 – 120	±10%	60	14	27	c 711 us	018F7663

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 (042N1256)

2.12.1 Dimensions and weight

Figure 25: BY, High performance coils

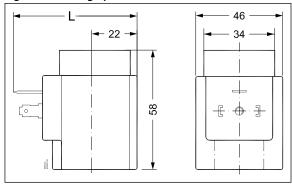


Table 37: BY, High performance coils

Туре	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:



- o 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 c subject of the control of the control
- 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

Туре	Tambient	Supply voltage	Voltage varia-	Frequency	Power cor	sumption	Approval	Code no.
Туре	[°C]	[V]	tion	tion [Hz]	[W]	[VA]	Арргочаг	code no.
D000466	40.40	24	-15%, 10%	50	10	17	~1 °	04054547
BQ024CS	-40 – 40	24	-15%, 10%	60	9	16	c Flu s	018F4517
BQ120BS	-40 – 40	110/120	-15%, 6%	60	13.5	19	c FL °us	018F4519
DO2 4055	40.40	230	-15%, 6%	50	10	17	-1 1°	04054544
BQ240CS	BQ240CS -40 – 40	208 / 240	-6%, 6%	60	9.5	16	c FL us	018F4511
BQ220BS	-40 – 40	220	-15%, 6%	60	12	19		018F4520

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 (042N1256)

2.13.1 Dimensions and weight

Figure 27: BQ, High performance coils

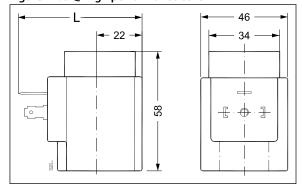


Table 40: BQ, High performance coils

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



2.14 AM coil

Figure 28: AM coi



Features

- Cable plug enclosure:
 - o 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

Tuna	Tambient	Supply voltage	Voltagovaviation	Voltage variation Frequency		Power consumption		
Туре	[°C]	[V]	voitage variation	[Hz]	[W]	[VA]	Code no.	
AM024C	-40 – 50	24	±10%	60	5.5	11	042N0842	
AIVI024C	-40 – 30	24	±10%	50	7.5	14	042110842	
AM110C	-40 – 50	110	±10%	60	5.5	11	042N0845	
AMITIOC	AWITIOC -40 – 30	110	±10%	50	7.5	14	042110843	
AM230C	-40 – 50	230	±10%	60	6.5	13	042N0840	
AIVIZSUC	-40 – 30	230	±10%	50	9.5	18	042110840	
AM240C	-40 – 50	240	±10%	60	5.5	11	042N0841	
AMZ40C	-40 - 30	240	±10%	50	7.5	15	042110041	
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 (042N1256)



2.14.1 Dimensions and weight

Figure 29: AM coil

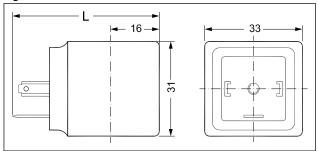


Table 43: AM coil

Туре	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:
 - o 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

Туре	Tambient	Supply voltage	Voltage varia-	Frequency	Power consumption		Annual	Code no.
Туре	[°C / °F]	[V]	tion	tion [Hz]	[W]	[VA]	Approval	code no.
	-40 – 50 / -40 –	208 – 240		60	5.5	11	~ 1°	
AP240C	122	230	±10%	50	7.5	15	c FL °us	042N4291
AP120B	-40 – 50 / -40 – 122	110 – 120	±10%	60	5	11	c SU °us	042N4292
AP024B	-40 – 50 / -40 – 122	24	±10%	60	5	11	c FL °us	042N4293

Table 45: Technical data

Design	In accordance with VDE 0580
Design	in accordance with VDE 0360
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)

2.15.1 Dimensions and weight

Figure 31: AP, Compact UL recognised coils

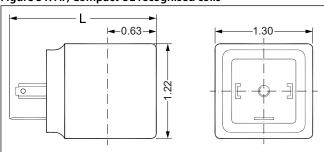




Table 46: AP, Compact UL recognised coils

Туре	L without cable plug	L with cable plug	L with protective cap	Weight
	[mm]	[mm]	[mm]	[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:
- o IP00 version with DIN 43650 A spade connectors
- o 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 c us

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

Туре	Tambient	Supply voltage	Voltage varia-	Frequency	Power con	sumption	Approval	Code no.
туре	[°C / °F]	[V]	tion	[Hz]	[W]	[VA]	Арргочаг	Code no.
1500155	-40 – 50 / -40 –	24	100/ 50/	50	9.5	18		0.40117.000
AS024CS	122	24	-10%, +6%	60	7.0	14	c FL °us	042N7608
	-40 – 50 / -40 –	230	-10%, +6%	50	8.0	16	~1 °	
AS230CS	122	208 – 240	±6%	60	7.0	14	c FL S us	042N7601
AZ012DS	-40 – 50 / -40 – 122	12	-10%, +6%	DC	6.0	-	c SU °us	042N7616
AZ024DS	-40 – 50 / -40 – 122	24	-10%, +6%	DC	6.5	-	c FL °us	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

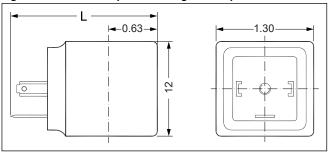


Table 49: AS/AZ, Compact UL recognised clip-on coils

Туре	L without cable plug	L with cable plug	L with protective cap	Weight
	[mm]	[mm]	[mm]	[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:
- o RoHS 2011/65/EU
- · LVD 2014/35/EU



- 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

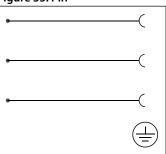




Table 51: Technical data

Туре	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		
	Housing	PA66 GF (Polymide)	
Materials	Terminal block	PA66 GF (Polymide)	
	Profiled gasket	Silicone	

2.17.1 Dimensions and weight

Figure 36: Cable plug

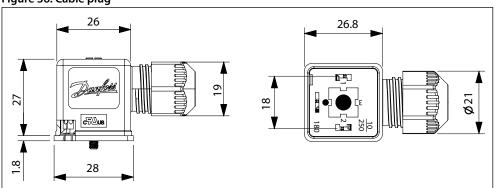


Table 52: Cable plug

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

2.18 Cable plug

Figure 37: Cable plug



- 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:
 - o RoHS 2011/65/EU
 - LVD 2014/35/EU
 - c **FL** 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

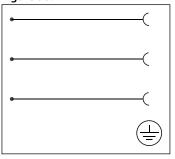


Table 54: Technical data

Туре	Cable plug with Danfoss logo			
Design	EN 175301-803 Form A			
Cable gland	PG 9			
Poles	2+1 (Earth)	2+1 (Earth)		
Max. voltage	250 V AC / DC			
Enclosure	IP65 (IEC 60529)			
Max. operating current	16 A			
Contact resistance	\leq 15 m Ω			
Cable diameter	Ø 6 - 8 mm			
Wire cross section	Max. 1.5 mm ²			
Ambient temperature	-40 - 90°C / -40 - 194°F			
	Housing	PA66 GF (Polymide)		
Materials	Terminal block	PA66 GF (Polymide)		
	Profiled gasket	NBR		

2.18.1 Dimensions and weight

Figure 39: Cable plug

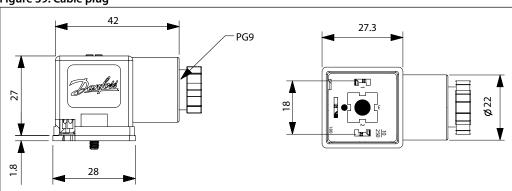


Table 55: Cable plug

Туре	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:



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

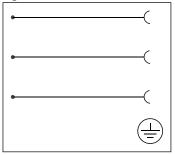


Table 57: Technical data

Туре	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	$< 10 m \Omega$		
Cable diameter	Ø4.5 – 7 mm		
Wire cross section	Max. 1.5 mm ²		
Ambient temperature	-30 – 90 °C / -22 – 194 °F		
	Contacts:	CuSn (Tin plated)	
Materials	Terminal block:	PA 6 GF	
waterials	Flat gasket:	NBR	
	Housing:	PA 6 GF	



2.19.1 Dimensions and weight

Figure 42: Industrial plug

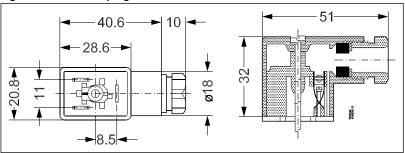


Table 58: Industrial plug

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

2.20 Cable plug (LED + Varistor)

Figure 43: Cable plug



- 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:
- o RoHS 2011/65/EU
- · LVD 2014/35/EU

Table 59: DIN 18

Industrial plug	Volt	tage	Voltage variation Suitable 1	Suitable for coil LED colour	Built-in VDR ⁽¹⁾ re-	Code no.	
size	[V AC]	[V DC]	voitage variation	types	LED COIOUR	sistor	code no.
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:

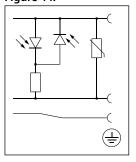


Table 60: Technical data

Table 55. Teermiear 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	\leq 4m Ω	$\leq 4m\Omega$		
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			
	Contacts:	CuZn, Cu/Sn-plated		
Materials	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)

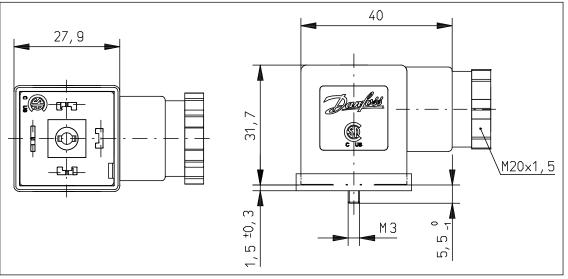


Table 61: Cable plug (LED + Varistor)

Туре	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:
- o RoHS 2011/65/EU
- · LVD 2014/35/EU

Table 62: DIN 11

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

⁽¹⁾ Protects against voltage peaks.

Figure 47:

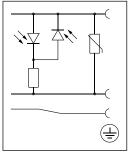


Table 63: Technical data

Design	Industrial form			
Supply voltage variation	±10%			
Power consumption	Max. 5 mA	Max. 5 mA		
Approval	CSA			
Enclosure	IP65 (IEC 60529)			
Max. operating current	1.5 A clamping contact			
Contact resistance	\leq 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			
	Contacts:	CuZn, Cu/Sn-plated		
Materials	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)

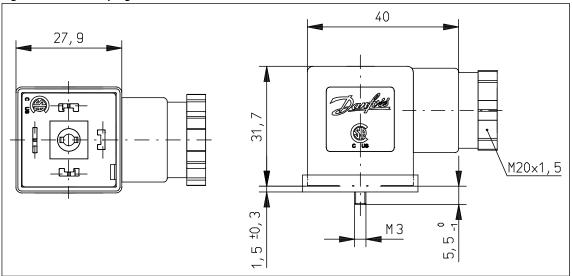


Table 64: Industrial plug (LED + Varistor)

Туре	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

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

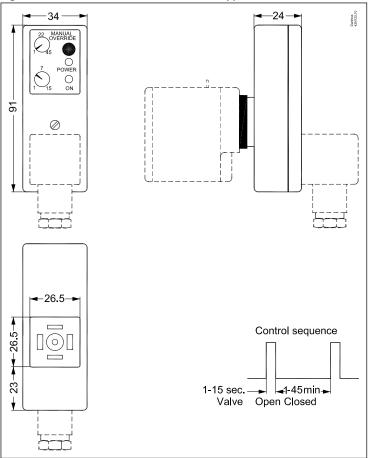


Table 66: Technical data

Туре	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





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