

BCD T8 Series

1-10V dimmable electronic control gear units for T8 and TC-L/F Lamps



Performance characteristics

- Dimming interface: 1–10 V
- Dimming range 1...100% luminous flux
- Construction height just 21 mm
- Electrode preserving warm start for maximum lamp life, even at increased switching frequency; starting time < 1.5 s
- Over Voltage Protected: 320 VAC 48 h/ 350 VAC 2 h
- Multipower- Technology: Suitable for operation of different lamps and wattages with same ECG
- Automatic restart after lamp replacement
- Safety switch-off in case of abnormal lamp operation, e.g. defective electrode and end of lamp life; tested acc. to EN 61347-2-3
- Certified as thermally protected ballasts, e.g. for application in ∇ -luminaires
- Suitable for direct current operation and application in emergency lighting installations : Conforms to requirements for emergency lighting acc. to EN 61347-2-3/J
- Nominal service life: 50,000 h with failure rate $\leq 10\%$ and operation at $t_c = t_{c, max}$
- Energy efficiency index EEL=A1
- Conformance with international regulations regarding safety and operation, electromagnetic compatibility and immunity to interference

ECG model

Version	Order no.	Lamp
BCD18.1F-01/220-240/1-10V	10097143	1 x T8 18 W
		1 x T8 30 W
BCD36.1F-01/220-240/1-10V	10097144	1 x T8 36 W
		1 x TC-L/-F 36 W
		1 x TC-L 40 W
BCD58.1F-01/220-240/1-10V	10097145	1 x T8 58 W
BCD18.2F-01/220-240/1-10V	10097193	2 x T8 18 W
		2 x T8 30 W
BCD36.2F-01/220-240/1-10V	10097194	2 x T8 36 W
		2 x TC-L/-F 36 W
		2 x TC-L 40 W
BCD58.2F-01/220-240/1-10V	10097195	2 x T8 58 W
BCD55.1F-01/220-240/1-10V	10097079	1 x TC-L 55 W
BCD55.2F-01/220-240/1-10V	10097089	2 x TC-L 55 W
BCD18.3-4F-01/220-240/1-10V	10097171	3 x T5 24 W
		3 x T8 18 W
		3 x TC-L 18 W
		4 x T8 18 W
		4 x TC-L 18 W

Markings



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Technical data

Mains voltage supply	
Rated voltage range	220 V – 240 V
Max. admissible voltage range (continuous)	198 V – 254 V
Frequency	0, 50 Hz ... 60 Hz
Battery operation	
Voltage range for continuous operation	176 VDC – 276 VDC ¹⁾
BCD 18.3-4	176 VDC – 198 VDC for max. 2 h
Behaviour at mains overvoltage	
Switch-off of the lamp(s) at	approx. 320 VAC ²⁾
Overvoltage protection	350 VAC / 2 h
1-10V control current	< 0.2 mA / (typ. 0,15mA)
Ignition time of the lamp	< 1.5 s
Dimming range	1...100 % luminous flux
Behaviour in case of defective lamp	Switch-off of the lamp
Automatic restart after lamp replacement	yes
Max. temperature at housing surface	+ 110 °C (acc. EN 61 347-2-3/C)
Nominal service life:	50,000 h with failure rate ≤ 10 % and operation at $t_c = t_{c, max}$
Lamp and mains terminals	
Wire cross section	
Push - in contact:	0.5 mm ² -1 mm ² solid
IDC - contact:	0.5 mm ² solid 0.75 mm ² stranded
Wire stripping length	8.0 mm ² – 9.0 mm ²
Lamp wire lengths	see "wiring diagrams"

¹⁾ Reliable lamp ignition only for ≥ 198 VDC

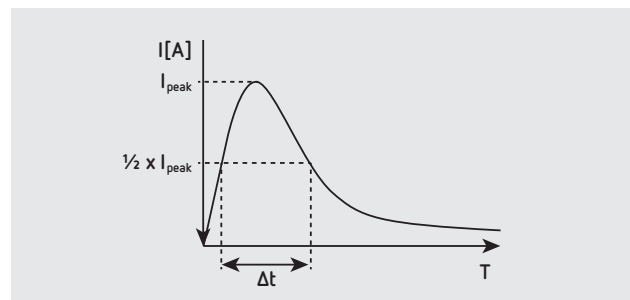
²⁾ Lamp restart after mains voltage interruption

Admissible temperatures

Version	Ambient (t_a)	Case (t_c)
BCD18.1F	+ 5°C... + 55°C	max. + 70°C
BCD36.1F	+ 5°C... + 55°C	max. + 70°C
BCD58.1F	+ 5°C... + 55°C	max. + 70°C
BCD18.2F	+ 5°C... + 55°C	max. + 70°C
BCD36.2F	+ 5°C... + 55°C	max. + 75°C
BCD58.2F	+ 5°C... + 55°C	max. + 75°C
BCD55.1F	+ 5°C... + 55°C	max. + 70°C
BCD55.2F	+ 5°C... + 55°C	max. + 70°C
BCD18.3-4F	+ 5°C... + 60°C	max. + 75°C

Inrush current / Circuit breaker

Version	typ. $I_{peak} / \Delta t$	No. of ECG at single-pole circuit breakers				
		LS-Type	10 A	16 A	20 A	25 A
BCD18.1F-01	16 A / 215 μ s	B	24	38	48	60
		C	40	64	80	100
BCD36.1F-01	16 A / 215 μ s	B	23	38	47	59
		C	39	63	79	99
BCD58.1F-01	18 A / 185 μ s	B	24	38	48	60
		C	34	54	68	85
BCD18.2F-01	18 A / 211 μ s	B	21	24	42	53
		C	35	56	70	88
BCD36.2F-01	32 A / 323 μ s	B	7	12	15	19
		C	12	20	25	31
BCD58.2F-01	32 A / 235 μ s	B	10	17	21	27
		C	17	28	35	44
BCD55.1F-01	18 A / 185 μ s	B	24	38	48	60
		C	34	54	68	85
BCD55.2F-01	32 A / 235 μ s	B	10	17	21	27
		C	17	28	35	44
BCD18.3-4F-01	31 A / 333 μ s	B	7	11	14	18
		C	12	19	24	31



All data for $U_{supply} = 230$ VAC, mains impedance = 1 Ω

In case of multipolar CB the max. no. is reduced by 20 %

The max. number may differ depending on CB manufacturer. Please consider the specifications of the manufacturer. Basically, CB with C-characteristics are recommended to be used in lighting groups.

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Operating data



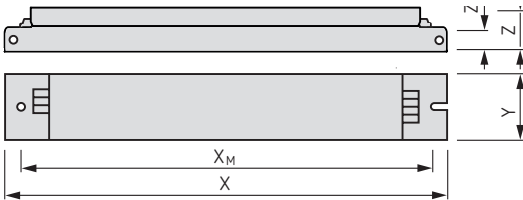
Version	Lamp	System rating	Input current*	Operating frequency	Power factor	Lamp power	EEI	Approvals
		W	A	kHz		W		
BCD18.1F-01/220-240/1-10V	1 x T8 18 W	19	0.09	50...100	0.96	16	A1BAT	a
	1 x T8 30 W	30	0.13	50...100	0.96	26	A1BAT	-
BCD36.1F-01/220-240/1-10V	1 x T8 36 W	36	0.16	45...90	0.98	32	A1BAT	a
	1 x T8 18 W	36	0.16	45...90	0.98	32	A1BAT	a
	1 x TC-L 40 W	46	0.21	45...90	0.98	42	A1BAT	a
BCD58.1-017220-240/1-10V	1 x T8 58W	57	0.25	50...110	0.97	50	A1BAT	a
BCD18.2F-01/220-240/1-10V	2 x T8 18 W	39	0.17	45...140	0.97	16	A1BAT	a
	2 x T8 30 W	58	0.26	45...140	0.97	26	A1BAT	-
BCD36.2F-01/220-240/1-10V	2 x T8 36 W	74	0.31	40...110	0.97	32	A1BAT	a
	2 x TC-L/-F 36 W	74	0.31	40...110	0.97	32	A1BAT	a
	2 x TC-L 40 W	89	0.38	40...110	0.97	40	A1BAT	a
BCD58.2F-01/220-240/1-10V	2 x T8 58W	110	0.48	40...145	0.97	50	A1BAT	a
BCD55.1F-01/220-240/1-10V	1 x TC-L 55 W	59	0.27	45...120	0.98	55	A1BAT	a
BCD55.2F-01/220-240/1-10V	2 x TC-L 55 W	122	0.54	50...140	0.98	55	A1BAT	a
BCD18.3-4F-01/220-240/1-10V	3 x T5FQ 24 W	76	0.33	47...75	0.95	24	A1BAT	a
	3 x T8 18 W	57	0.25	47...75	0.95	16	A1BAT	a
	3 x TC-L 18 W	57	0.25	47...75	0.95	16	A1BAT	a
	4 x T8 18 W	74	0.32	47...75	0.95	16	A1BAT	a
	4 x TC-L 18 W	74	0.32	47...75	0.95	16	A1BAT	a

* at U_{Mains} = 230 VAC

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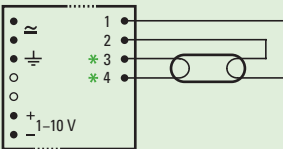
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Dimensions

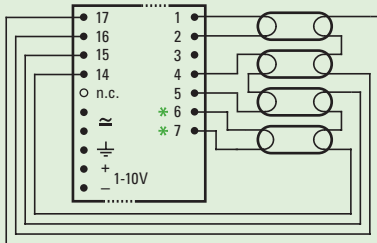
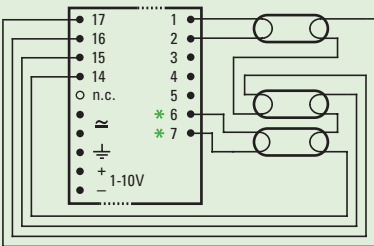
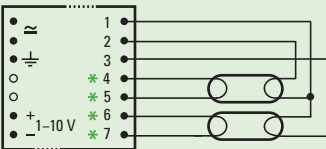


Version	X mm	X _M mm	Y mm	Z mm	Z _M mm	Weight kg
BCD18.1F-01	360	350	30	21	9	0,25
BCD36.1F-01	360	350	30	21	9	0,25
BCD58.1F-01	360	350	30	21	9	0,26
BCD18.2F-01	425	415	30	21	9	0,33
BCD36.2F-01	425	415	30	21	9	0,33
BCD58.2F-01	425	415	30	21	9	0,33
BCD55.1F-01	360	350	30	21	9	0,26
BCD55.2F-01	425	415	30	21	9	0,35
BCD18.3-4F-01	360	350	39	21	9	0,31

Wiring diagrams



Keep wire pair 3-4 as short as possible (max. 0,5 m)
Wire pair 1-2 max. 2m
Pay attention to a symmetrical lamp wiring



Keep wire pairs 4-5 and 6-7 as short as possible (max. 0,5 m)
Wire pairs 1-2, 14-15, 16-17 max. 2m
Pay attention to a symmetrical lamp wiring.

Max. allowed cable capacity:
75 pF between each lamp line
150 pF between each lamp line and earth
Connection to the 1-10V interface by main rated cables (interface not in accordance with SELV)
To ensure a smooth operation an earth connection should be fitted.

Conformance with regulations

EN 61 347-1 General and safety requirements

EN 61 347-2-3

EN 61 347-2-3/C Requirements for thermally protected ballasts

EN 61347-2-3/J Particular additional safety requirements for a.c./d.c. supplied electronic ballasts for emergency lighting

EN 60 929 Performance requirements

EN 50 294 Measurement method of total input power of ballast-lamp circuits

EN 61 000-3-2 Limits for harmonic current emissions

EN 61 000-3-3 Limitation of voltage fluctuations and flicker

General EMC immunity:

EN 61 000-4-2 Electrostatic discharge

EN 61 000-4-3 Radiated, radio-frequency, electromagnetic field

EN 61 000-4-4 Electrical fast transient / burst

EN 61 000-4-5 Surge

EN 61 000-4-6 Conducted disturbances, induced by radio-frequency fields

EN 61 000-4-8 Power frequency magnetic field

EN 61 000-4-11 Voltage dips, short interruptions and voltage variations

EN 61 547 EMC immunity: equipment for general lighting purposes

EN 55 015 Radio disturbances, frequencies < 300MHz (CDN method)

Environmental tests for mechanical capacity:

IEC 60 068-2-6 Test Fc: vibrations (sinusoidal)

IEC 60 068-2-27 Test Ea: shock and bump

IEC 60 068-2-29 Test Eb: shock and bump

Quality management certified according to ISO 9001