

BCD
T5
Series

1-10V dimmable electronic control gear units for T5 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	
BCD35.1F-01/220-240/1-10V	10097244	1 x T5	14 W
		1 x T5	21 W
		1 x T5	28 W
		1 x T5	35 W
BCD39.1F-01/220-240/1-10V	10097246	1 x T5	24 W
		1 x T5	39 W
BCD49.1F-01/220-240/1-10V	10097247	1 x T5	49 W
BCD54.1F-01/220-240/1-10V	10097248	1 x T5	54 W
BCD80.1F-01/220-240/1-10V	10097249	1 x T5	80 W
		1 x TC-L	80 W
BCD35.2F-01/220-240/1-10V	10097294	2 x T5	14 W
		2 x T5	21 W
		2 x T5	28 W
		2 x T5	35 W
BCD39.2F-01/220-240/1-10V	10097296	2 x T5	24 W
		2 x T5	38 W
BCD49.2F-01/220-240/1-10V	10097297	2 x T5	49 W
BCD54.2F-01/220-240/1-10V	10097298	2 x T5	54 W
BCD80.2F-01/220-240/1-10V	10097299	2 x T5	80 W
		2 x TC-L	80 W
BCD14.3F-01/220-240/1-10V	10097281	3 x T5	14 W
BCD14.4F-01/220-240/1-10V	10097291	4 x T5	14 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 80.1, BCD 80.2, BCD 14.3, BCD 14.4	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)
BCD35.1F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 75°C
BCD39.1F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 70°C
BCD49.1F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 70°C
BCD54.1F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 70°C
BCD80.1F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 70°C
BCD35.2F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 75°C
BCD39.2F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 70°C
BCD49.2F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 70°C
BCD54.2F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 75°C
BCD80.2F-01/220-240/1-10V	+ 5°C... + 55°C	max. + 75°C
BCD14.3F-01/220-240/1-10V	+ 5°C... + 60°C	max. + 75°C
BCD14.4F-01/220-240/1-10V	+ 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-Typ	10 A	16 A	20 A	25 A
BCD35.1F-01	16 A / 215 μ s	B	23	38	47	59
		C	39	63	79	99
BCD39.1F-01	16 A / 215 μ s	B	23	38	48	59
		C	39	63	79	99
BCD49.1F-01	18 A / 280 μ s	B	15	24	30	38
		C	25	41	51	64
BCD54.1F-01	18 A / 200 μ s	B	22	35	44	55
		C	32	52	65	81
BCD80.1F-01	33 A / 220 μ s	B	7	12	15	19
		C	12	20	25	31
BCD35.2F-01	29 A / 310 μ s	B	7	12	15	19
		C	13	21	26	36
BCD39.2F-01	33 A / 323 μ s	B	7	11	14	18
		C	12	19	24	30
BCD49.2F-01	33 A / 323 μ s	B	7	11	14	18
		C	12	19	24	31
BCD54.2F-01	32 A / 323 μ s	B	7	12	15	19
		C	12	20	25	31
BCD80.2F-01	41 A / 431 μ s	B	4	6	8	10
		C	7	11	14	18
BCD14.3F-01	30 A / 333 μ s	B	7	12	15	19
		C	13	21	26	32
BCD14.4F-01	30 A / 315 μ s	B	8	13	16	21
		C	14	22	28	38

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Operating data



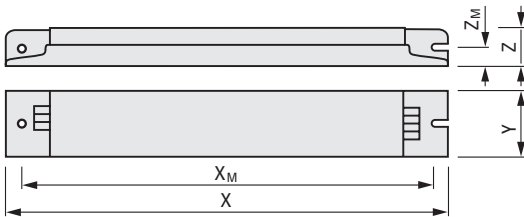
Version	Lamp	System rating	Input current*	Operating frequency	Power factor	Lamp power	EEL	Approvals
		W	A	kHz		W		
BCD35.1F-01/220-240/1-10V	1 x T5 14 W	18	0.08	50...85	0.96	14	A1BAT	a
	1 x T5 21 W	25	0.12	50...85	0.96	21	A1BAT	a
	1 x T5 28 W	32	0.15	50...85	0.96	28	A1BAT	a
	1 x T5 35 W	39	0.19	50...85	0.96	35	A1BAT	a
BCD39.1F-01/220-240/1-10V	1 x T5 24 W	26	0.12	45...105	0.98	24	A1BAT	a
	1 x T5 39 W	38,5	0.17	45...105	0.98	39	A1BAT	a
BCD49.1F-01/220-240/1-10V	1 x T5 49 W	55	0.24	55...80	0.97	49	A1BAT	a
BCD54.1F-01/220-240/1-10V	1 x T5 54 W	58	0.26	55...120	0.97	54	A1BAT	a
BCD80.1F-01/220-240/1-10V	1 x T5 80 W	86	0.37	45...115	0.98	80	A1BAT	a
	1 x TC-L 80 W	86	0.37	45...115	0.98	80	A1BAT	a
BCD35.2F-01/220-240/1-10V	2 x T5 14 W	34	0.15	45...90	0.97	14	A1BAT	a
	2 x T5 21 W	48	0.21	45...90	0.97	21	A1BAT	a
	2 x T5 28 W	64	0.28	45...90	0.97	28	A1BAT	a
	2 x T5 35 W	78	0.35	45...90	0.97	35	A1BAT	a
BCD39.2F-01/220-240/1-10V	2 x T5 24 W	53	0.23	40...110	0.97	24	A1BAT	a
	2 x T5 39 W	78	0.34	40...110	0.97	39	A1BAT	a
BCD49.2F-01/220-240/1-10V	2 x T5 49 W	106	0.47	50...90	0.98	49	A1BAT	a
BCD54.2F-01/220-240/1-10V	2 x T5 54 W	115	0.51	40...145	0.97	54	A1BAT	a
BCD80.2F-01/220-240/1-10V	2 x T5 80 W	172	0.75	45...120	0.97	80	A1BAT	a
	2 x TC-L 80 W	172	0.75	45...120	0.97	80	A1BAT	a
BCD14.3F-01/220-240/1-10V	3 x T5 14 W	50	0.22	56...66	0.95	14	A1BAT	a
BCD14.4F-01/220-240/1-10V	4 x T5 14 W	66	0.29	48...80	0.95	14	A1BAT	a

* at $U_{\text{Mains}} = 230 \text{ VAC}$

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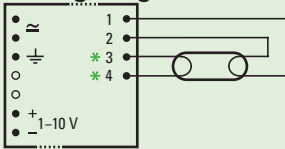
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Dimensions

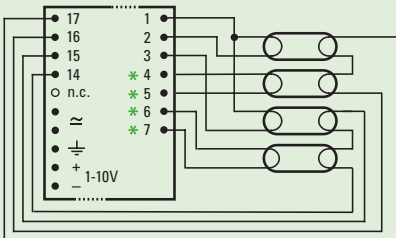
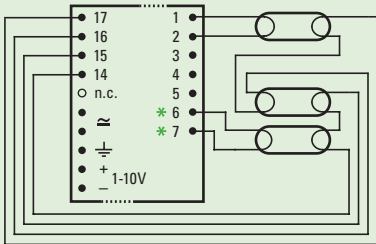
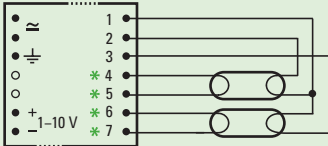


Version	X mm	X _M mm	Y mm	Z mm	Z _M mm	Weight kg
BCD35.1F-01	360	350	30	21	9	0,26
BCD39.1F-01	360	350	30	21	9	0,25
BCD49.1F-01	360	350	30	21	9	0,26
BCD54.1F-01	360	350	30	21	9	0,26
BCD80.1F-01	360	350	30	21	9	0,26
BCD35.2F-01	425	415	30	21	9	0,33
BCD39.2F-01	425	415	30	21	9	0,33
BCD49.2F-01	425	415	30	21	9	0,36
BCD54.2F-01	425	415	30	21	9	0,33
BCD80.2F-01	425	415	30	21	9	0,39
BCD14.3F-01	360	350	39	21	9	0,32
BCD14.4F-01	360	350	39	21	9	0,32

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, 1-3, 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	