

EB-SELECTALUME



Definition

White plastic housing, high frequency (> 42kHz) electronic ballast for TLD fluorescent lamps at 220 –230V 50/60Hz.

Features & Benefits:

- Up to 25% reduction in energy consumption at constant luminous flux compared with conventional gear.
- Less strain on the eyes improves productivity as the electronic ballast with higher operating frequency (>42kHz) does not cause the lamp to flicker at 50Hz operation.
- Up to 30% longer lamp life than using conventional ballasts.
- Automatic stop circuit is activated within five seconds in case of lamp failure (Safety stop).

Applications

Typical areas of application include:

- Department stores, Malls, Shops, Hyper-and Supermarkets
- Office buildings, Banks, government ministries
- Industrial premises

Philips quality

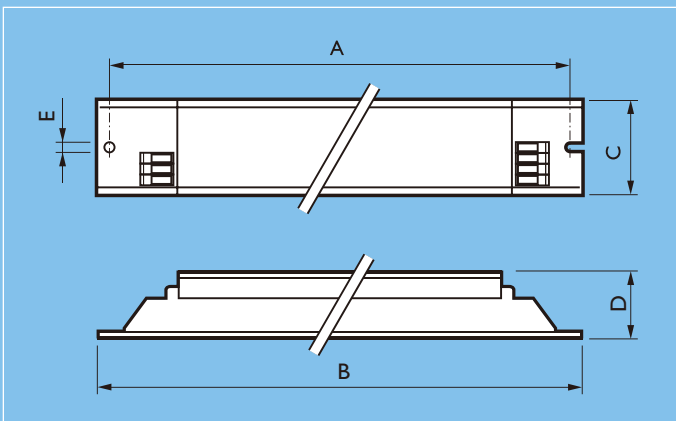
This assures optimum quality regarding:

- System supplier
As manufacturer of lamps, electronic control gear and lighting control equipment, Philips ensures that, from the earliest development stage, optimum lamp/ballast performance is maintained.
- International standards
Philips Electronic Ballast's complies with all relevant international standards and regulations.

Compliances and approvals

- EMI CISPR 15
- RFI<30 MHz EN 55015 (EMC)
- RFI>30 MHz EN 55015
- Harmonics IEC 61000-3-2
- Immunity EN 61547
- Safety IEC 61347-2-3
- Vibration & bump tests EN 60068-2-6-FC, EN 60068-2-29-Eb
- Quality standard ISO 9001
- Environmental standard ISO 14001, RoHS compliant
- Approval marks CE, CCC, C-Tick

Dimensions in mm



TYPE	A	B	C	D	E
EB-S 118 TLD	140	150	40	28	4.2
EB-S 218 TLD	210	200	40	30	4.2
EB-S 136 TLD	140	150	40	28	4.2
EB-S 236 TLD	210	200	40	38	4.2

Technical data in relation to energy saving (all typical values at Vmains =230V)

Lamp Nominal*	Qty. of Lamps W	Ballast	System Power W	Lamp Power W	Ballast Losses W	CELMA EEI	THD
TL-D 18W	1	EB-S 118 TLD	19	16.0	3.0	A3	15%
TL-D 18W	2	EB-S 218 TLD	37	32.0	4.0	A3	15%
TL-D 36W	1	EB-S 136 TLD	37	32.0	4.0	A3	15%
TL-D 36W	2	EB-S 236 TLD	72	64.0	8.0	A3	15%

Lamp	Qty. of Lamps	Ballast	Power Factor	Ballast Lumen	Oper Freq kHz	Wiring diagram fig.
TL-D 18W	1	EB-S 118 TLD	0.98	1.00	44	1
TL-D 18W	2	EB-S 218 TLD	0.98	1.00	44	2
TL-D 36W	1	EB-S 136 TLD	0.98	1.00	44	1
TL-D 36W	2	EB-S 236 TLD	0.98	1.00	44	2

Technical data for installation

Mains operation		Automatic restart after lamp replacement	No
Rated mains voltage	220-230 V		
With tolerances for safety: ± 10%	198-253 V ⁽³⁾		
⁽³⁾ Ignition and operation possible between	176-264 V	Insulation resistance test	500 V DC from Line/Neutral to Earth (not between Line and Neutral)
Mains frequency	50/60 Hz		Note: Ensure that the neutral is reconnected again after above mentioned test is carried out and before the installation is put in operation
DC voltage operation during emergency back-up	No		
For limited time (48Hrs) only:		Lamp current crest factor	< 1.7
Required battery voltage for guaranteed ignition	198V - 254V		
Required battery voltage for burning lamps	176V - 254V		

Notes:

- For continuous DC application, an external fuse should be used in the luminaires
- Continuous low DC voltages (<198V) can influence the lifetime of the ballast

Earth leakage current < 0.5 mA per ballast

Total Harmonic Distortion (THD) < 15%

Ignition time Typically 1.6 sec.

Constant light operation In case of AC mains voltage fluctuations, within 202-254 V, the luminous flux Changes by a maximum of ± 5%

Overvoltage protection 48 hrs at 270 V AC

Cable Capacity Max 120pF between lamp wires Ip-Ip
Max 120pF between lamp wires and earth Ip-gnd

Dual fixture: master-slave Possible, in general a maximum of 2m lamp wires between ballast and lamps are allowed

Mains current at 220/230V/240V

Ballast		Input current at 220 / 230 / 240 A
EB-S 118 TLD	(1x18W TL-D)	0.08 / 0.09 / 0.07
EB-S 218 TLD	(2x18W TL-D)	0.17 / 0.18 / 0.14
EB-S 136 TLD	(1x36W TL-D)	0.16 / 0.17 / 0.15
EB-S 236 TLD	(2x36W TL-D)	0.31 / 0.32 / 0.29

Inrush current

		Max. quantity of ballast per Miniature Circuit Breaker Type B16 A	Inrush current ½ value time at typical mains impedance
EB-S 118 TLD	(1x18W TL-D)	24	25A/200 µS
EB-S 218 TLD	(2x18W TL-D)	24	25A/200 µS
EB-S 136 TLD	(1x36W TL-D)	24	25A/200 µS
EB-S 236 TLD	(2x36W TL-D)	24	25A/200 µS

Conversion table for max. quantities of ballasts on other types of Miniature Circuit Breaker

MCB Type	Relative quantity of ballasts
B	16A 100%(see table above)
B	10A 63%
C	16A 170%
C	10A 104%
L, I	16A 108%
L, I	10A 65%
G, U, II	16A 212%
G, U, II	10A 127%
K, III	16A 254%
K, III	10A 154%

Notes:

- Data is based on a mains supply with an impedance of 400 mΩ (equal to 15 m cable of 2.5mm² and another 20m to the middle of the power distribution), under worst case conditions. With an impedance of 800 mΩ the number of ballasts can be increased by 10%.
- Measurements will be verified in real installations; therefore data are subject to change.
- In some cases the maximum number of ballasts is not determined by the MCB but by the maximum electrical load of the lighting installation.
- Note that the maximum number of ballasts is given when these are all switched on the same moment, i.e. by a wall switch.
- Measurements were carried out on single-pole MCB's. For multi-pole MCB's it is advisable to reduce the number of ballasts by 20%.
- The maximum number of ballasts which can be connected to one Residual Current Detector of 30mA is 30.
- The average cable capacity Lp-Gnd is 100pF per meter for standard installation wire Diameter 1.0 mm (bundled lamp wiring situation). For more information regarding this subject consult the Philips Application guide to fluorescent lamp control gear.

Wiring diagrams

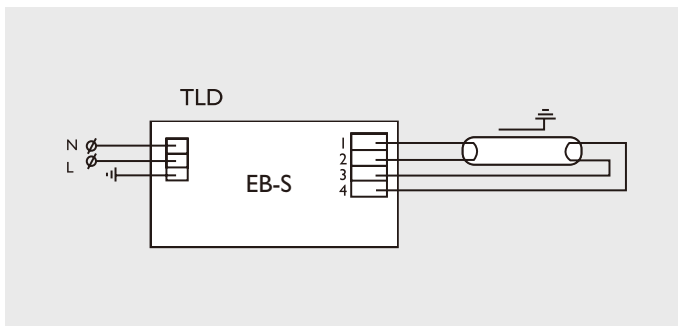


Fig. 1

Connector type:

Connection wiring is greatly simplified through use of insert contacts with push buttons. Earth connection can be made via housing.

Wire lengths:

For optimal performance, note that following wires need to be kept short;

For one lamp circuits keep wires to terminals 1 and 2 short;

For two lamp circuits keep wires to terminals 1,2,3 and 4 short.

Technical data for design and mounting in fixtures

Temperatures	
Temperature range to ignite lamp with ignition aid	-55° C to +50° C
Storage Temperature	-40° C to +50° C
Lifetime	30,000 Hrs
Failure rate	less than 0.2% per 1000hrs of operation
Max t _{case}	65° C

Lifetime of a ballast depends on the temperature of the ballast. This means there is a relation between the Tc point on the ballast and its lifetime. For more information regarding this subject consult the Philips Application guide to fluorescent lamp control gear (3222 635 59771 *May 2006)

Hum and noise level	inaudible (< 30 dBA at 1 meter)
Outdoor use	Ballast IP=23, in outdoor applications the Luminaires has to be sufficient IP rated. Permitted humidity is tested according to IEC 61347-1 par 11 Note that no moisture or condensation may Enter the ballast.
Earthing	Earthing of the ballast in a luminaires is necessary for EMC (Electromagnetic Compatibility)

The ballasts that are thermally protected use a protective method of another type providing equivalent thermal protection.

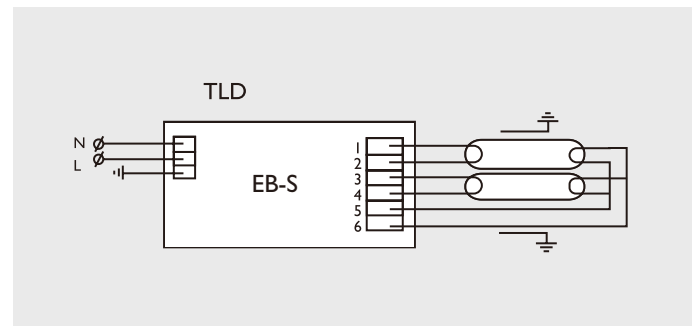


Fig. 2

Wire cross-section:

Mains	0.5mm – 1.5mm ²
Lamp(s) connector	0.5mm – 1.5mm ²
Strip length	9.0 – 10.0 mm



Ordering and packing data

Ballast	Ordering Number	weight kg	Packing Qty. pcs	Dimensions L x W x H cm	Volume m ³	Weight Gross kg	EAN code	EOC
EB-S 118 TLD	9137 130 21314	0.160	12	32.8x20.6x8.7	0.0058	2.9	8710163063928	871016306393530
EB-S 218 TLD	9137 130 21414	0.250	12	32.8x20.6x8.7	0.0058	3.2	8710163063966	871016306396630
EB-S 136 TLD	9137 130 21514	0.160	12	32.8x20.6x8.7	0.0058	3.0	8710163063942	871016306395930
EB-S 236 TLD	9137 130 21614	0.250	12	32.8x20.6x8.7	0.0058	3.0	8710163063980	871016306399730