A high intensity discharge lamp generally shows peculiar negative resistance characteristic, while striking the lamp it exhibits a very high impedance thus drawing no current. As starter circuit ignites, the arc establishes the current path between two electrodes. The impedance reduces fast and current rises. Unless this inrush current is controlled, lamp arc tube may lead to active failure.

Ballast normally ensures that this current supplied to lamp is limited and established to desired level. Often therefore it is called "current limiting device".

Ballast popular in India are of two types :

a) Electromagnetic

b) Electronic.

While electromagnetic ballast offer low power factor and compensating circuits are needed to improve it, electronic ballast invariably offer better power factor and are ideal for reliable ignition especially even at low voltage areas.

Electromagnetic Ballast

Selection of proper ballast not only ensures prolonging maintenance cycle but also helps optimization of lamp performance. A ballast like most electrical components, generates heat due to its ohmic resistance and magnetic losses. It is the temperature of the choke coil during operation that is important. The max permissible coil temperature tw is required to be marked on ballast.

A tw value of 120°C is achieved with coil insulating class E. Under the specified conditions average ballast life of ten years may be expected for a continuous operations at coil temperature specified in tw°C. However a 10°C temperature rise above tw°C value will halve its expected life. A 20°C above tw value, a ballast life of not more than 2.5 years of continuous operation be expected.

If ballast has no tw marking, a maximum of 105°C is assumed for the coil temperature. (Class A insulation tw is 105°C, Class E insulation tw is 120°C and for Class F insulation tw is 150°C.)

Another value to be marked on any ballast is the coil temp rise Δt. This is differentiation between the absolute coil temp and ambient temp in standard condition. (This is measured as specified in IEC 920 (EN 60920). Common values for Δt are from 50°C to 70°C in steps of 5°C).

A ballast selected therefore marked with say tw 120° and Δt 70 will have specified 10 years average life in continuous operation at standard condition at an ambient temperature of 120°C-70°C = 50°C. If ambient around ballast is higher, shorter ballast life will result unless adequate air circulation in cooling is applied within gear compartment.

The ambient temperature of 50°C indicated is not a room temperature or environmental temperature but is a temperature of the micro-environment of the ballast. Ballast in luminaire or control gear, the air temperature around it is higher than outside ambient temperature. Therefore higher temperature has to be added to coil temperature rise Δt to find absolute coil temperature $tc = t2 + \Delta t$.

Ballast losses published are maximum "cold" values. Published Δt & tw ratings are for standard conditions and shall vary differently in different enclosures if measured. For perennial low voltage areas ballast lower tappings rating can be used. A caution is however needed if voltage shows tendancy to rise beyond the rated voltage in late night hours, if used in lower tapping; premature failure of ballast may be inevitable.

Electronic Ballast

To over come the heat, ignition at low voltage and circuit compensation problems, it is prudent to select more refined yet energy saving ballast commonly available for fluorescent and selectively available for low wattage HID circuits.

The vagaries of Indian mains supply across the country must protect the ballast from malfunction. Multiple types of ballasts are available in market. A guidance therefore is necessary for unsuspecting purchaser, following are few of the tips:

- Instant start EB is essentially cold start ballast and do inflict damage to filament of FTL if used in multi switching (>3 cycles/ day) installation. Lamp life is reduced.
- Rapid start EB is (pre-heat) warm start ballast and prolongs the life of FTL to its declared life and is ideal for multi switching installation.
- Circuit protection to be built-in are: In-rush current protection a must in Instant Start EB, while Rapid Start it is not warranted.
- Source aging protection will lead to safety of the ballast during aging of lamp.
- Over voltage auto shut off circuit. It will ensure that the circuit shuts off in case of mains voltage over shoots the specified designed voltage(290 - 295V)
- Preheat current in warm start EB should be reduced to minimum once the filament temperature reaches 700K. Else the continuous pre-heat current leads to premature failure of filament.

Published series in this catalogue of industrial and domestic electronic ballast confirm to relevant standards. Our digital ballast series are Active Power Factor Circuits (APFC) and are constant wattage output ballast for wide range of mains voltage variance (170-265V). The service life of our Digital ballast in standard condition is in excess of 35000 hours with failure rate of less than 2 for every 100 ballast installed in 3 phase 4 wire balanced circuit installations. Our complete range of electronic ballasts operate at >40 KHz and are immune to infra-red remote operations. These are designed for complete hum and flicker free operations for your safety.

Published data is as per specified test procedures laid in relevant BIS & IEC publications. These are measured in stand alone condition at 230V, 50Hz for domestic products and 240V, 50Hz for industrial products at perfect sinusoidal wave form.

At actual working environment due to variance in mains supply wave form and frequency this publish data may show changes if THD and frequency level of the utility supply is not as per the norms.

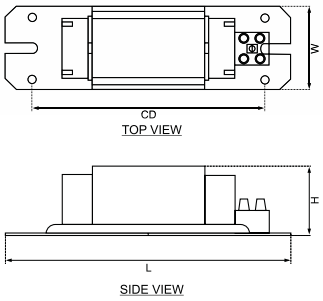
Note:

All types of ballast especially HID and electronic, are exposed to premature failure if these are run with the lamps reaching its end of service life. It is advisable therefore to ensure that lamps/tubes are replaced at the end of its service life rather than awaiting lamp failure to occure.

Domestic Ballast FTL

Domestic grade vaccum impregnated (VPIT) ballast designed to be operated only at 230V/ 50Hz mains supply.

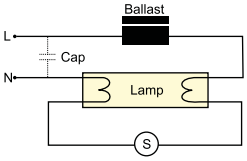
Dimensions (in mm)



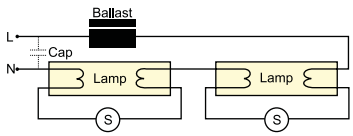
Specification

- Compact in size
- Designed for 230V/ 50Hz., AC supply
- Low loss silicon steel lamination
- Super enamelled copper wire
- Vaccum impregnated (VPIT) open construction
- Low watt loss (less than12W)
- Better heat dissipation
- Hum free operation
- Maximum winding temp. tw- 120^0 C, Temp. rise., Δt- 70^0 C
- Long life
- Conforms to IS: 1534(Part1) of 1977

Wiring Diagram



For Single tube of 18/20/36/40W FTL with universal starter (FSU)



For twin tubes of 18/20W FTL with 110V starter (FS2)

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
LHBF18902007	1x18/20W FTL	137	41	33	115
LHBF18904009	1x36/40W FTL	137	41	33	115
LHBF19902007	1x18/20W FTL	155	41	28	115/123
LHBF19904009	1x36/40W FTL	155	41	28	115/123

Technical Details

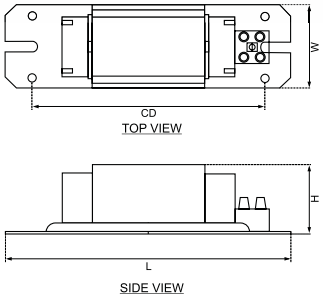
Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
LHBF18902007	1x18/20W FTL	230	0.340	12.0	≥0.42
LHBF18904009	1x36/40W FTL	230	0.410	12.0	≥0.55
LHBF19902007	1x18/20W FTL	230	0.350	12.0	≥0.42
LHBF19904009	1x36/40W FTL	230	0.410	12.0	≥0.52

Generally 230V ballasts are not provided with PF compensation capacitors.

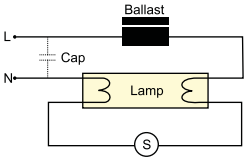
Industrial Ballast FTL

Industrial grade vaccum impregnated (VPIT) ballast designed to be operated at 220V-240V/ 50Hz mains supply. Also available in low loss (ACCURA) version.

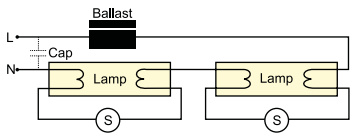
Dimensions (in mm)



Wiring Diagram



For Single tube of 18/20/36/40W FTL with universal starter (FSU)



For twin tubes of 18/20W FTL with 110V starter (FS2)

Specification

- Compact in size
- Designed for 240V/ 50Hz., AC supply
- Low loss silicon steel lamination
- Super enamelled copper wire
- Vaccum impregnated (VPIT) open construction
- Low watt loss (less than12W)
- Better heat dissipation
- Hum free operation
- Maximum winding temp. tw- 120^0 C, Temp. rise., Δt- 70^0 C
- Long life
- Conforms to IS: 1534(Part1) of 1977

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
LHBF18002015	1x18/20W FTL	137	41	33	115
LHBF18004011	1x36/40W FTL	137	41	33	115
LHBF19002015	1x18/20W FTL	155	41	28	115/123
LHBF19004011	1x36/40W FTL	155	41	28	115/123

Table -2 : For PF compensation

Lamp type	Ballast type	Mains Voltage (V)	Frequency (Hz)	Capacitor Value (mfd)*	Power Factor
1x36/40W FTL/ 36W FP-L	LHBF18004011	240	50	4.0	≥0.85
	LHBF19004011	240	50	4.0	≥0.85
2x36/40W FTL/ 36W FP-L	LHBF18004011	240	50	8.0	≥0.85
	LHBF19004011	240	50	8.0	≥0.85
3x 36W FP-L	LHBF18004011	240	50	12.0	≥0.85
	LHBF19004011	240	50	12.0	≥0.85
2x18/20W FTL/ 18W FP-L	LHBF18004011	240	50	4.0	≥0.85
	LHBF19004011	240	50	4.0	≥0.85

* Capacitors are of 250V grade.

Technical Details

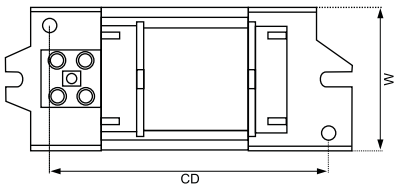
Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
LHBF18002015	1x18/20W FTL	240	0.370	12.0	≥0.42
LHBF18004011	1x36/40W FTL	240	0.430	12.0	≥0.52
LHBF19002015	1x18/20W FTL	240	0.370	12.0	≥0.42
LHBF19004011	1x36/40W FTL	240	0.430	12.0	≥0.52

Industrial Ballast CFL

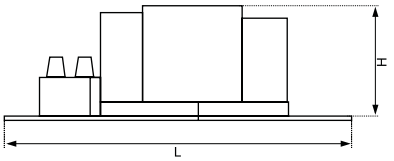
Industrial grade vaccum impregnated (VPIT) ballast designed to be operated at 220V-

240V/50Hz mains supply.

Dimensions (in mm)



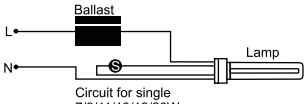
TOP VIEW



SIDE VIEW

Wiring Diagram

Circuit for single
7/9/11/13/18/26W
2 Pin CFL



Circuit for single
7/9/11/13/18/26W
4 Pin CFL

Specification

- Compact in size
- Designed for 240V/ 50Hz., AC supply
- Low loss silicon steel lamination
- Super enamelled copper wire
- Vaccum impregnated (VPIT) open construction
- Low watt loss
- Better heat dissipation
- Hum free operation
- Maximum winding temp. tw- 120^0 C, Temp. rise., Δt- 70^0 C
- Long life
- Conforms to IS: 1534(Part1) of 1977

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
LHBC18011017	1x9/11W CFL (PL-S)	95	42	33	85
LHBC18013018	1x13W CFL (PL-C)	95	42	33	85
LHBC18018020	1x18W CFL (PL-C)	95	42	33	85
LHBC18026021	1x26W CFL (PL-C)	137	42	33	115
LHBC19011017	1x9/11W CFL (PL-S)	95	42	28	85
LHBC19013018	1x13W CFL (PL-C)	95	42	28	85
LHBC19018020	1x18W CFL (PL-C)	95	42	28	85

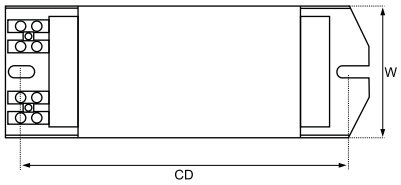
Technical Details

Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
LHBC18011017	1x9/11W CFL (PL-S)	240	0.150	6.0	$\geq$ 0.47
LHBC18013018	1x13W CFL (PL-C)	240	0.165	6.0	$\geq$ 0.45
LHBC18018020	1x18W CFL (PL-C)	240	0.220	9.0	$\geq$ 0.51
LHBC18026021	1x26W CFL (PL-C)	240	0.320	12.0	$\geq$ 0.50
LHBC19011017	1x9/11W CFL (PL-S)	240	0.150	6.0	$\geq$ 0.47
LHBC19013018	1x13W CFL (PL-C)	240	0.165	6.0	$\geq$ 0.45
LHBC19018020	1x18W CFL (PL-C)	240	0.220	9.0	$\geq$ 0.51

Industrial Ballast HID - Open construction

Industrial grade vaccum impregnated (VPIT) ballast designed to be operated at 220V-240V/50Hz mains supply. Suitable for HPMV/SV/MH lamps.

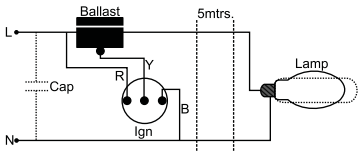
Dimensions (in mm)



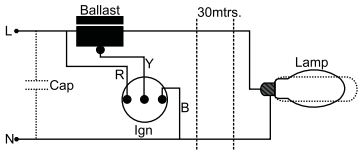
TOP VIEW

SIDE VIEW

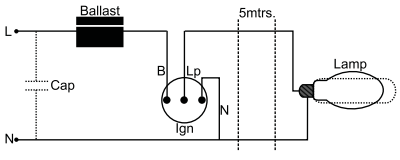
Wiring Diagram



For HPSV/ MH lamp with impulse ignitor - LHNM05000D99/ LHNW07000A99



For HPSV/ MH lamp with impulse ignitor- LHNW17000B99



For HPSV/ MH lamp with super imposed ignitor - LHNW27000C99

Specification

- Compact in size
- Designed for 240V/ 50Hz., AC supply
- Low loss silicon steel lamination
- Super enamelled copper wire
- Vaccum impregnated (VPIT) open construction
- Low watt loss
- Better heat dissipation
- Hum free operation
- Maximum winding temp. tw- 120^0 C, Temp. rise., Δt- 70^0 C
- Long life
- Conforms to IS: 6616-1982, IEC 922 & IEC 923

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
HPMV OC BALLASTS					
LHBG08112036	1x125W HPMV	112	66	52	95
LHBG08125036	1x250W HPMV	145	66	52	127
HPSV/MH OC BALLASTS					
LHBW08170036	1x70W SON/MH	112	66	52	95
LHBW08115036	1x150W SON/MH	145	66	52	118

Technical Details

Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor*	Capacitor Value (mfd)
HPMV OC BALLASTS						
LHBG08112036	1x125W HPMV	240	1.15	15.0	≥0.51	10.0
LHBG08125036	1x250W HPMV	240	2.15	21.0	≥0.52	15.0
HPSV/MH OC BALLASTS						
LHBW08170036	1x70W SON/MH	240	0.98	16.0	≥0.37	10.0
LHBW08115036	1x150W SON/MH	240	1.80	22.0	≥0.40	20.0

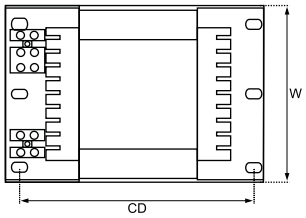
* With PF compensation capacitor, power factor improves to ≥0.85.

Industrial Ballast HID - Open construction

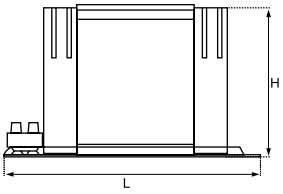
Industrial grade vaccum impregnated (VPIT) ballast designed to be operated at 220V-

240V/50Hz mains supply. Suitable for HPMV/SV/MH lamps.

Dimensions (in mm)

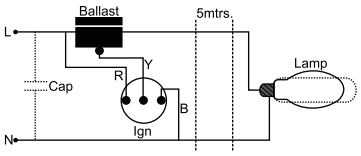


TOP VIEW

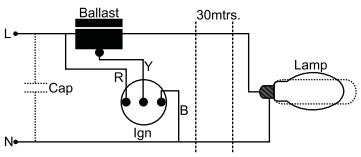


SIDE VIEW

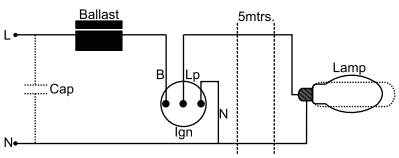
Wiring Diagram



For HPSV/ MH lamp with impulse ignitor - LHNM05000D99/ LHNW07000A99



For HPSV/ MH lamp with impulse ignitor- LHNW17000B99



For HPSV/ MH lamp with super imposed ignitor - LHNW27000C99

Specification

- Compact in size
- Designed for 240V/ 50Hz., AC supply
- Low loss silicon steel lamination
- Super enamelled copper wire
- Vaccum impregnated (VPIT) open construction
- Low watt loss
- Better heat dissipation
- Hum free operation
- Maximum winding temp. tw- 120^0 C, Temp. rise., Δt- 70^0 C
- Long life
- Conforms to IS: 6616-1982, IEC 922 & IEC 923

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
HPMV OC BALLASTS :					
LHBG08140036	1x400W HPMV	148	102	92	135
HPSV/MH OC BALLASTS :					
LHBW18125036	1x250W SON/MH	148	102	92	135
LHBW08140036	1x400W SON/MH	148	102	92	135
LHBW08160036	1x600W SON-T	180	102	92	165

Technical Details

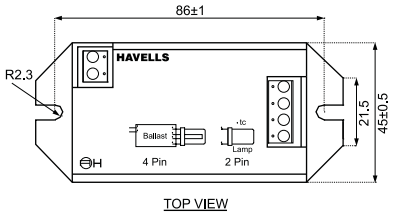
Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor*	Capacitor Value (mfd)
HPMV OC BALLASTS						
LHBG08140036	1x400W HPMV	240	3.25	28.0	≥0.55	20.0
HPSV/MH OC BALLASTS						
LHBW18125036	1x250W SON/MH	240	3.00	32.0	≥0.40	33.0
LHBW08140036	1x400W SON/MH	240	4.45	44.0	≥0.42	42.0
LHBW08160036	1x600W SON-T	240	6.20	54.0	≥0.44	52.0

* With PF compensation capacitor, power factor improves to ≥0.85.

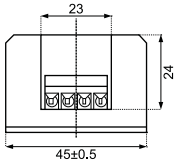
CFL Electronic Ballast

Compact, high frequency, energy efficient electronic ballast suitable for 2pin & 4 pin CFL.

Dimensions (in mm)



TOP VIEW



SIDE VIEW

Specification

2 Pin/4 Pin CFL electronic ballast:
Economical solution for enrgy saving in low voltage areas of rural India.
Suitable for non-retrofit CFL.
Rated Voltage : 240V/ 50Hz
Power Factor (PF) : ≥0.90
Crest Factor (CF) : ≤1.70
Output Frequency : 40-55 KHz
Total Harmonic Distortion (THD) : ≤40%

4 Pin CFL electronic ballast:
Economical solution for enrgy saving in low voltage areas of rural India.
Suitable for non-retrofit CFL.
Rated Voltage : 240V/ 50Hz
Power Factor (PF) : ≥0.90
Crest Factor (CF) : ≤1.70
Output Frequency : 40-55 KHz
Total Harmonic Distortion (THD) : ≤40%

Advantages:
Compact in size, energy efficient and with universal mounting holes for easy replacement of electromagnetic ballast.
Ideal for areas of low voltage pick-ups.

Technical Details

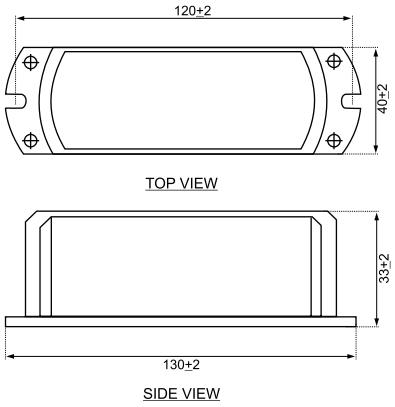
Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
2Pin/4Pin CFL EB					
LHBC07113054	1x9/11/13W CFL	240	0.055	2.0	≥0.90
LHBC07118054*	1x18W CFL	240	0.085	2.0	≥0.90
LHBC07112655	1x26W CFL	240	0.120	2.0	≥0.90
4Pin CFL EB					
LHBC07113055	1x9/11/13W CFL	240	0.055	2.0	≥0.90
LHBC07118055*	1x18W CFL	240	0.085	2.0	≥0.90

* Not suitable for FP-L

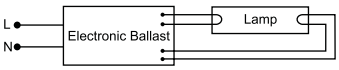
Electronic Ballast

Compact, high frequency, energy efficient ballast suitable for single T12/T8 linear fluorescent lamp or 18/36W FP-L. Available in basic circuit or with over voltage and end of life protection circuits.

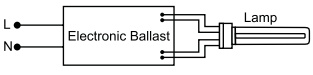
Dimensions (in mm)



Wiring Diagram



For 1x18/20/36/40W FTL



For 1x36W FP-L

Specification

El-star electronic ballast:
Economical solution for enrgy saving in low voltage areas of rural India.
Suitable for linear fluoresent lamp (T12/ T8) only in domestic circuit.
Rated Voltage : 230V/ 50Hz
Power Factor (PF) : ≥0.55
Crest Factor (CF) : ≤1.70
Output Frequency : 40-55 KHz
Total Harmonic Distortion (THD) : ≤140%

Olympian electronic ballast:
Suitable for domestic/ indusrial application.
Suitable for linear fluorescent (FTL) lamp/ compact fluorescent lamp (FP-L)
Designed to protect from high voltage surge (285-315 VOLTS) and ageing protection.

Rated Voltage : 220-240V/ 50Hz
Power Factor (PF) : ≥0.90
Crest Factor (CF) : ≤1.90
Output Frequency : 50-60 KHz
Total Harmonic Distortion (THD) : ≤33%

Advantages:
Both ballasts are pre-wired, compact in size, energy efficient and with universal mounting holes for easy replacement of electromagnetic ballast. Ideal for areas of low voltage pick-ups.

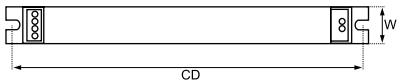
Technical Details

Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
EL-STAR BALLAST					
LHBF17902024	1x18/20W FTL	230	0.170	4.0	≥0.55
LHBF17904025	1x36/40W FTL	230	0.260	4.0	≥0.55
OLYMPIAN BALLAST					
LHBF27902024	1x18/20W FTL	240	0.100	5.0	≥0.90
LHBF27904025	1x36/40W FTL	240	0.160	5.0	≥0.90

Industrial Electronic Ballast - High Performance

Industrial electronic ballast suitable for single or twin T12/T10/T8/T5 linear fluorescent lamps. In-built preheat start and cut-off circuits ensure enhanced lamp life with failure resistant ballast.

Dimensions (in mm)



TOP VIEW

SIDE VIEW

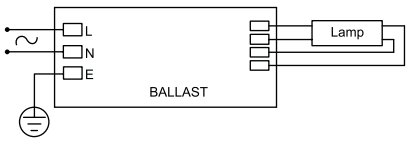
Specification

- Suitable for 220-240V/ 50Hz
- Ignition time <2 secs
- Crest Factor (CF) <1.90
- Output Frequency ≥40KHz
- High power factor (PF) ≥0.95
- Total Harmonic Distortion (THD) ≤33%
- IR radiation immune, hum free operation
- Circuit designed for higher (295V) mains voltage & ageing protection

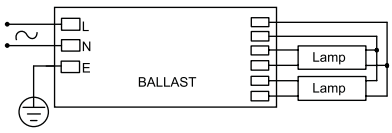
Advantages:

- Longer lamp life
- Push-fit type connector
- Striation free operation
- Low energy consumption with low heat generation
- Programmed warm start (pre-heat) circuit enables lamps for multiple switching cycles
- Conforms to EN 60928 & EN 60929

Wiring Diagram



For Single Lamp



For Twin Lamp

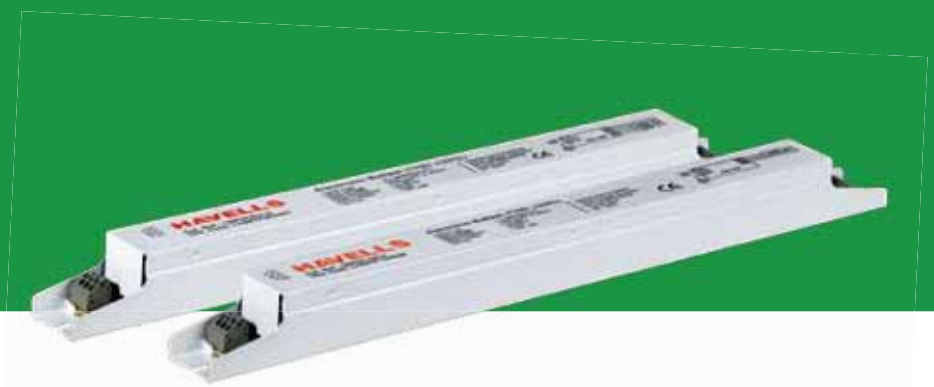
Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
LHBT01114031	1x14W T5 FTL	305	30	28	280
LHBT01214040	2x14W T5 FTL	305	30	28	358
LHBT01128032	1x28W T5 FTL	305	30	28	348
LHBT01228033	2x28W T5 FTL	305	30	28	348
LHBF07104026	1x36/40W FTL	305	30	28	280
LHBF07204027	2x36/40W FTL	305	30	28	348
LHBF07202039	2x18/20W FTL	305	30	28	348

Technical Details

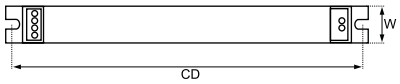
Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
LHBT01114031	1x14W T5 FTL	240	0.090	4.5	≥0.95
LHBT01214040	2x14W T5 FTL	240	0.155	10.0	≥0.95
LHBT01128032	1x28W T5 FTL	240	0.145	4.5	≥0.95
LHBT01228033	2x28W T5 FTL	240	0.290	10.0	≥0.95
LHBF07104026	1x36/40W FTL	240	0.165	4.5	≥0.95
LHBF07204027	2x36/40W FTL	240	0.325	10.0	≥0.95
LHBF07202039	2x18/20W FTL	240	0.165	10.0	≥0.95

Industrial Electronic Ballast - Digital Performance

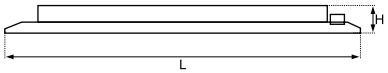


Industrial electronic digital performance ballast suitable for single or twin T12/T10/T8/T5 linear fluorescent lamps. Designed for specific hum-free application areas where much lower harmonic distortion desirable.

Dimensions (in mm)

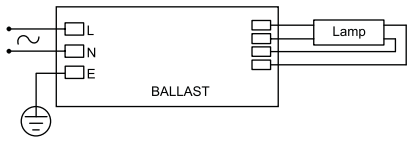


TOP VIEW

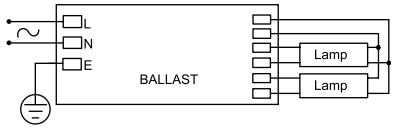


SIDE VIEW

Wiring Diagram



For Single Lamp



For Twin Lamp

Specification

- Suitable for 220-240V/ 50Hz
- Ignition time <2 secs
- Crest Factor (CF) ≤1.75
- Output Frequency ≥40KHz
- High power factor (PF) ≥0.99
- Total Harmonic Distortion (THD) ≤10%
- IR radiation immune, hum free operation
- Circuit designed for higher (295V) mains voltage protection

Advantages:

- Enhanced lamp life
- Push-fit type connector
- Striation free operation
- Low energy consumption with low heat generation
- Fairly constant-wattage output on wide range of voltage
- Programmed APFC regulated high frequency ballast perfect for multiple switching cycles
- Conforms to EN 60928 & EN 60929

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (in mm)	Width (in mm)	Height (in mm)	CD (in mm)
LHBT02114048	1x14W T5 FTL	365	30	28	355
LHBT02214049	2x14W T5 FTL	365	30	28	355
LHBT02128050	1x28W T5 FTL	365	30	28	355
LHBT02228051	2x28W T5 FTL	365	30	28	355
LHBF08104028	1x36/40W FTL	310	39	28	298
LHBF08204029	2x36/40W FTL	310	39	28	298
LHBF08202022	2x18/20W FTL	310	39	28	298

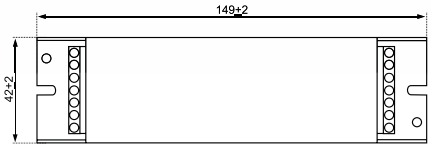
Technical Details

Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Wattloss (W)	Power Factor
LHBT02114048	1x14W T5 FTL	240	0.080	4.5	≥0.99
LHBT02214049	2x14W T5 FTL	240	0.150	10.0	≥0.99
LHBT02128050	1x28W T5 FTL	240	0.140	4.5	≥0.99
LHBT02228051	2x28W T5 FTL	240	0.280	10.0	≥0.99
LHBF08104028	1x36/40W FTL	240	0.155	4.5	≥0.99
LHBF08204029	2x36/40W FTL	240	0.320	10.0	≥0.99
LHBF08202022	2x18/20W FTL	240	0.155	10.0	≥0.99

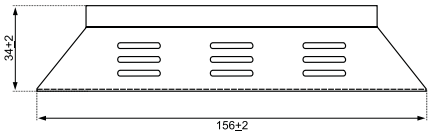
Emergency Kit

Emergency lighting kit with battery power emergency lighting systems for different type of fluorescent lamps for office lighting application & in many work places event of power fail people can find their way around safely.

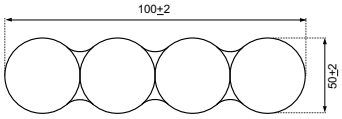
Dimensions (in mm)



TOP VIEW

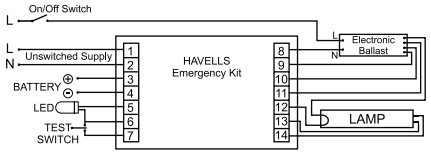


FRONT VIEW



BATTERY FOR EMERGENCY KIT

Wiring Diagram



Specification

- Compact in size
- 1hr. to 3hr. discharge period
- Optional test switch
- Deep discharge protection
- Reverse battery polarity protected
- High temperature Ni-cd cells
- Conform to EN 55015 in accordance with EN 60598-2-22
- Compatible with electronic ballast only

Application

- Cine halls
- Auditorium
- Office lighting
- Shopping malls

Table -1 : Dimensional Details

Ballast type	Lamp Type	Discharging Period	Catagory
LHBF07104026	1x36W FTL (T8) 1x40W FTL (T12) 1x36W FP-L	80 min 60 min 50 min	60 60 45
LHBT01114031	1x14W FTL (T5)	115 min	90
LHBT01128032	1x28W FTL (T5)	80 min	60
LHBC07118055	1x18W FP-L	165 min	90
LHBF07102039	1x18W FTL (T8)	130 min	90

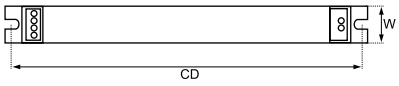
Technical Details

Ordering Code	Lamp Type	Charging Period	Suitable for
LHEF01018075	4.8V DC, 2.3AH Ni-cd Battery	8 hrs.	All type of commercial Luninaries & CFL downlighters.

DIMMABLE ELECTRONIC BALLASTS

Energy saving HF electronic analog dimmable ballast suitable for dimming single or twin T8/ T5/FP-L fluorescent lamps. Designed for use with Aura Energy Management systems for dimming applications.

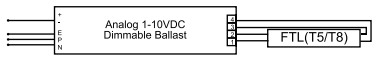
Dimensions (in mm)



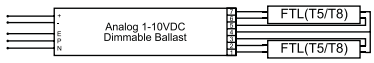
TOP VIEW

SIDE VIEW

Wiring Diagram



For Single Lamp



For Twin Lamp

Specification

Dimmable Analog (1-10V DC) HF Electronic ballast
Rated Voltage : 230V AC, 50Hz
Control input : 1 – 10V DC, 0.5mA
Power Factor (PF) : 0.98
Total Harmonic Distortion (THD) : < 15%
Long service life
Complies with IEC61347-1, IEC61347-2-3, IEC61000-3-2, EN60929, EN55015, EN61547

Advantages

Energy savings by dimming capabilities (1-100% T8, 3-100% T5, 5-100% FP-L)
50% Longer lamp life than with conventional ballasts
Desired illumination levels creating efficient working conditions
Auto reset after lamp replacement comforms to EN 60928 & EN 66929

Table -1 : Dimensional Details

Ballast type	Lamp Type	Length (L in mm)	Width (W in mm)	Height (H in mm)	CD (in mm)
LHBF05136062	1x18, 30, 36W T8	360	30	27	346
	1x18, 24, 36, 40W FP-L	360	30	27	346
LHBF05236062	2x18, 30, 36W T8	360	30	27	346
	2x18, 24, 36, 40W FP-L	360	30	27	346
LHBT05135062	1x14, 21, 28, 35W T5	360	30	27	346
LHBT05235062	2x14, 21, 28, 35W T5	360	30	27	346
LHBF05158062	1x54W T5	360	30	27	346
	1x58W T8	360	30	27	346
LHBF05258062	2x54W T5	360	30	27	346
	2x58W T8	425	30	27	412

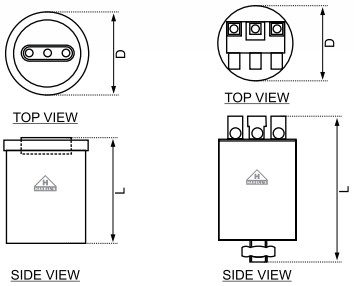
Technical Details

Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (mA)	THD	Power Factor
LHBF05136062	1x18, 30, 36W T8	230	28-156	≤15	0.98
	1x18, 24, 36, 40W FP-L	230	28-156	≤15	0.98
LHBF05236062	2x18, 30, 36W T8	230	150-315	≤15	0.98
	2x18, 24, 36, 40W FP-L	230	150-315	≤15	0.98
LHBT05135062	1x14, 21, 28, 35W T5	230	74-170	≤15	0.98
LHBT05235062	2x14, 21, 28, 35W T5	230	140-340	≤15	0.98
LHBF05158062	1x54W T5	360	250	≤15	0.98
	1x58W T8	360	250	≤15	0.98
LHBF05258062	2x54W T5	360	490	≤15	0.98
	2x58W T8	425	490	≤15	0.98

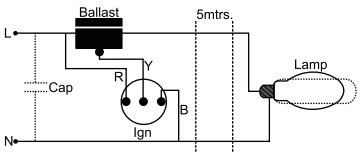
Electronic Ignitors

Electronic ignitors for variety of gas discharge lamps of multiple wattages.

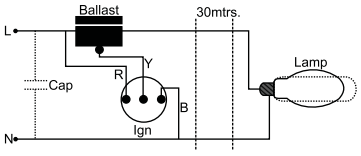
Dimensions (in mm)



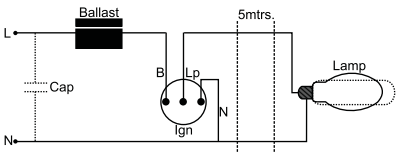
Wiring Diagram



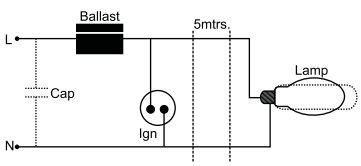
For HPSV/ MH lamp with impulse ignitor - LHNM05000D99/ LHNW07000A99



For HPSV/ MH lamp with impulse ignitor- LHNW17000B99



For HPSV/ MH lamp with super imposed ignitor - LHNW27000C99



For HPMH lamp with super imposed 2 lead ignitor LHNW3700C99

Specification

- Designed to give reliable initial ignition voltage pulse to facilitate the discharge in HID arc tubes.
- Active until the lamp current sets in
- Designed voltage peak occur at the correct phase angle for ignition
- HF pulses can be transfered only over short distance as per the guidance below Distance(m) = $\frac{\text{Approved load capacity of Ign (pF)}}{\text{Actual supply line capacity (pF)}}$
- Impulse (semi - parallel) & Superimposed pulse SIP (series/parallel) versions available.
- Seperate wired lead for direct ballast terminations eliminates voltage (pulse) drops at multiple junctions.
- Short and long distance versions ensure quick and reliable ignition to most of HID lamps under 220/230/240V, 50Hz mains supply conditions.
- For hard strike lamps (aged lamps /MH) higher pulse amplitude may be necessary.
- Complies with EN 60926 (safety) and EN 60927 (Performance)

Table -1 : Dimensional Details

Ordering Code	Lamp Type	Length L (in mm)	Dia. D (in mm)
LHNW07000A99	Upto 600W HPSV	52	40
LHNM05000D99	Upto 400W HPSV/MH	52	40
LHNW17000B99	Upto 400W HPSV/MH	70	40
LHNW27000C99	Upto 600W HPSV/MH	93	35

Technical Details

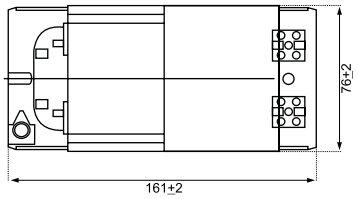
Ordering Code	Lamp Type	Suitable upto Distance (in mtrs)	No. of pulses	Pulse height (in Kv)
LHNM05000D99	Upto 400W HPSV/MH	5 mtrs (Int)	1 per cycle	3Kv-4.5Kv
LHNW17000B99	Upto 400W HPSV/MH	30 mtrs (Non-Int)	3 per 5 cycles	3Kv-4.5Kv
LHNW27000C99	Upto 600W HPSV/MH	5 mtrs (Int)	6 per cycle	3Kv-4.5Kv

Note : Long distance (30mtr) ignitor will work on 3x2.5 sq.mm. copper/al. wire of 30 mtrs. or 3x4 sq.mm. Al. wire of 20 mtrs or 3x6 sq.mm. Al. wire of 15mtrs.

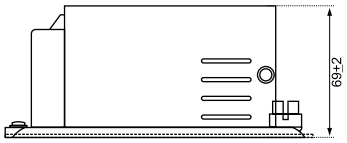
Composite Gear Unit

Compact encapsulated electromagnatic copper wound integrated CGU for reliable ignition of HID SON/MH lamps for indoor use.

Dimensions (in mm)

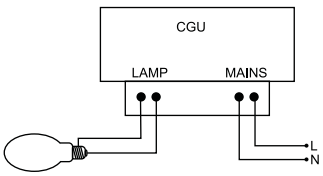


TOP VIEW



SIDE VIEW

Wiring Diagram



Specification

- Compact size encapsulated copper wound gear integrated with Short distance/Long distance ignitor and pf improvement capacitor.
- Electrical grade steel and double insulated grade enamel wire ensures long and reliable operation.
- Buit in capacitor eleminates external wiring of compensation circuits.
- Designed for only indoor/ shielded out door environments. Hazardous if used in exposed out door conditons.
- Designated mains and lamp terminals for ease of direct wiring.

Technical Details

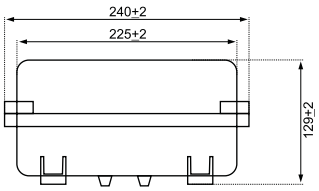
Ordering Code*	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Power Factor	Capacitor Value (mfd)
SHORT DISTANCE					
LHGW31170D36	1x70W SON/MH	240	0.40	≥0.85	10.0
LHGW31115D36	1x150W SON/MH	240	0.82	≥0.85	20.0
LONG DISTANCE					
LHGW11170B36	1x70W SON/MH	240	0.40	≥0.85	10.0
LHGW11115B36	1x150W SON/MH	240	0.82	≥0.85	20.0

* for indore use only. Distance limit between CGU & Lamp - 5mtr for short destance, 30mtr for long distance.

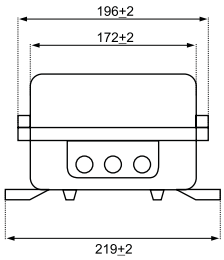
Cast-Aluminium Power Pack

Out door heavy duty cast aluminium (CA) body control gear box housing suitable for single high pressure mercury vapour/ sodium vapour/ metal halide lamp upto 400W.

Dimensions (in mm)

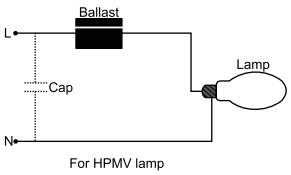


FRONT VIEW

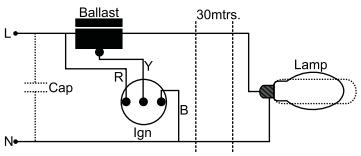


SIDE VIEW

Wiring Diagram



For HPMV lamp



For HPSV/ MH lamp with impulse ignitor- LHNW17000B99

Specification

- Die-cast aluminium body housing with textured powder coated siemen's grey shade.
- Body mounted ballast, ignitor and capacitor helps better heat dissipation.
- 3 knock-outs at bottom help loop-in-loop out connections if required (change the mains i/c connector to proper circuit amp rating).
- Good quality hardware ensures long life maintenability.
- Built in mounting arrangement in body housing ensures rigid 1 fixing on mouting structure.
- Pre wired with power factor improvement capacitor and impulse ignitor for reliable ignition upto terminal block, copper wound ferromagnetic ballast supplied separately be wired as per instruction.

Technical Details

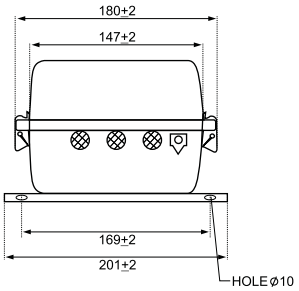
Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Power Factor	Capacitor Value (mfd)
HPMV OC BALLASTS					
LHGG03112036	1x125W HPMV	240	0.69	≥0.85	10.0
LHGG03125036	1x250W HPMV	240	1.30	≥0.85	15.0
LHGG03140036	1x400W HPMV	240	2.10	≥0.85	20.0
HPSV/MH OC BALLASTS					
LHGW03170B36	1x70W SON/MH	240	0.40	≥0.85	10.0
LHGW03115B36	1x150W SON/MH	240	0.82	≥0.85	20.0
LHGW03125B36	1x250W SON/MH	240	1.32	≥0.85	33.0
LHGW03140B36	1x400W SON/MH	240	2.20	≥0.85	42.0

IP65 HPF F

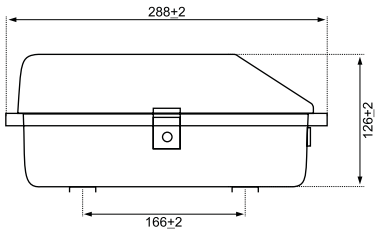
Deep Drawn Power Pack

Out door heavy duty cast aluminium (CA) body control gear box housing suitable for single high pressure mercury vapour/ sodium vapour/ metal halide lamp upto 400W.

Dimensions (in mm)

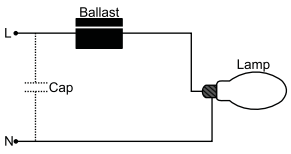


FRONT VIEW

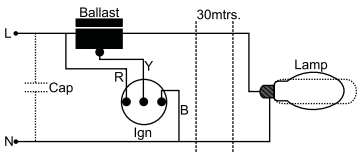


SIDE VIEW

Wiring Diagram



For HPMV lamp



For HPSV/ MH lamp with impulse ignitor- LHNW17000B99

Specification

- Aerodynamic shaped deep drawn from EOD grade MS body housing with powder coated in siemen's grey shade.
- Built in tray facilitates housing of ballast, ignitor and capacitor mounting.
- 3 knock-outs provided help loop-in-loop out connections if required (change the mains i/c connector to proper circuit amp rating).
- Fixed with quick release side toggels help secure wheather proof cover in normal operation. Hooked in connection for cover ensures easy maintenance of componants
- Mounting brackets at back helps regid fixing of CG box on to structure.
- Bottom knock-out for cable entry for terminating in improved quality glass filled connectors.
- Pre wired with power factor improvement capacitor and impulse ignitor for reliable ignition upto terminal block, copper wound ferromagnetic ballast supplied separately be wired as per instruction.

Technical Details

Ordering Code	Lamp Type	Nominal Voltage (V)	Mains Current (A)	Power Factor	Capacitor Value (mfd)
HPMV OC BALLASTS					
LHGG02112036	1x125W HPMV	240	0.69	≥0.85	10.0
LHGG02125036	1x250W HPMV	240	1.30	≥0.85	15.0
LHGG02140036	1x400W HPMV	240	2.10	≥0.85	20.0
HPSV/MH OC BALLASTS					
LHGW02170B36	1x70W SON/MH	240	0.40	≥0.85	10.0
LHGW02115B36	1x150W SON/MH	240	0.82	≥0.85	20.0
LHGW02125B36	1x250W SON/MH	240	1.32	≥0.85	33.0
LHGW02140B36	1x400W SON/MH	240	2.20	≥0.85	42.0

IP55 HPF F