Electronic ballasts for T8 fluorescent lamps

1

18-70 W 220-240 V, 50-60 Hz

- Only 21 mm high
- Optimal lamp operation
- Wide operational ambient temperature range
- Standard & sidemount possibilities
- Optional terminals for automatic wiring
- Low power losses
- Silent operation
- Stabilized flickerfree light
- High power factor

A2

Lamp type	Wattage	No. of lamps	Ballast	EEI	Dimensions	Connection (p.18)	Weight (g)	Circuit power (W)	Mains current (A)	Lamp power (W)
	18	1	EL1x18s	A2	1	1	190	18	0.09-0.08	16
	18	2	EL2x18s	A2	2	2	230	34.5	0.16-0.15	16
	18	3	EL3/4x18s	A2	2	5	250	52	0.25-0.23	16
	18	3	EL3/4x18s-u [2]	A2	3	7	210	52	0.25-0.23	16
	18	4	EL3/4x18s	A2	2	6	250	69	0.33-0.30	16
	18	4	EL3/4x18s-u [2]	A2	3	8	210	69	0.33-0.30	16
	32	1	EL1x49s [1]	A2	1	1	190	34.5	0.15	32
	32	2	EL2x49s [1]	A2	2	3	260	72	0.31	32
	36	1	EL1x36/40/18s	A2	1	1	190	35	0.16-0.15	32
	36	1	EL1x36/40s-u [2]	A2	3	1	190	35	0.16-0.15	32
	36	2	EL2x36/40s	A2	2	2	245	69	0.32-0.29	32
	36	2	EL2x36/40s-u [2]	A2	4	4	245	69	0.32-0.29	32
	58	1	EL1x58s	A2	1	1	200	54	0.26-0.23	50
	58	1	EL1x58s-u [2]	A2	3	1	200	54	0.26-0.23	50
	58	2	EL2x58s	A2	2	2	260	106.5	0.50-0.45	50
	58	2	EL2x58s-u [2]	A2	4	4	260	106.5	0.50-0.45	50
	70	1	EL1x70s	A2	1	1	200	64.5	0.30-0.28	60
	70	2	EL2x70s	A2	2	2	260	128	0.59-0.54	60

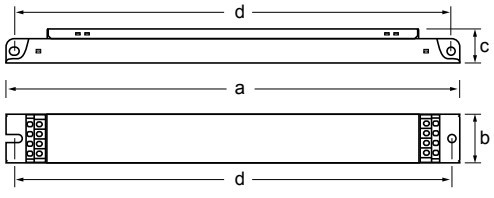
Note: *See pages 18-19 for connection diagrams and additional characteristics.*

1) Tested and recommended by Helvar, not ENEC approved

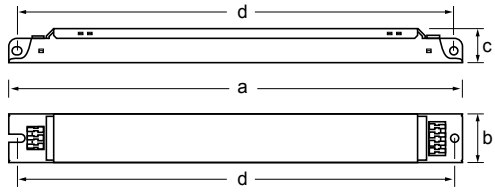
2) With terminals for both manual and automatic wiring (IDC & push-in)

Dimensions	1	2	3	4
drawing	a	a	b	b
Length 'a' (mm)	280	360	280	360
Width 'b' (mm)	30	30	30	30
Height 'c' (mm)	21	21	21	21
'd' (mm)	270	350	270	350

a



b



Delivery information

Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	One-way pallet 1200 x 820 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x s	10	●	2000	350 - 420	57
EL2 x s	10	●	1500	395	57
EL3/4 x s	10	●	1500	385	57

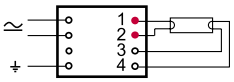
Connection diagrams

1

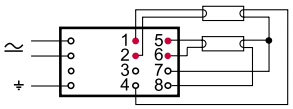
EL-s, EL-su, EL-ngn, EL-TCs

NOTE: *All wiring to the connectors marked with a red dot (hot wires) should be as short as possible.*

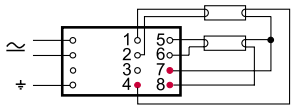
1



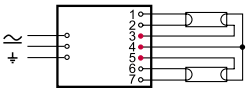
2



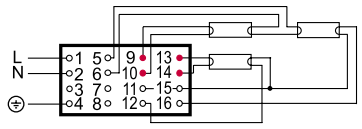
3



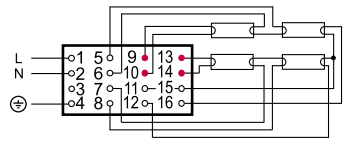
4



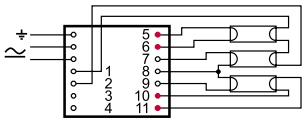
5



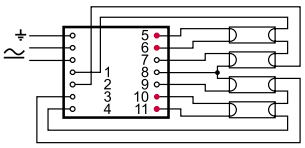
6



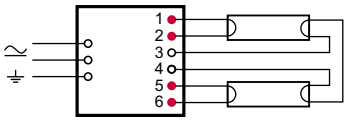
7



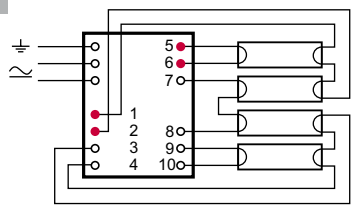
8



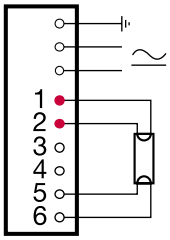
9



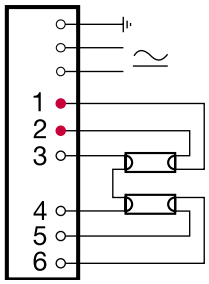
10



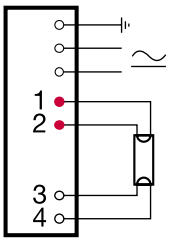
11



12



13



1	EL1x ...s, EL1x...ngn
2	EL2x18s, EL2x24s, EL2x36/40s, EL2x39/36s, EL2x54s, EL2x55s, EL2x58s, EL2x70s
3	EL2x14-35s, EL2x49s
4	EL2x14-35s-u, EL2x36/40s-u, EL2x49s-u, EL2x58s-u, EL2x80s-u
5	EL3/4x14s, EL3/4x18s (three lamp connection)
6	EL3/4x14s, EL3/4x18s (four lamp connection)
7	EL3/4x14s-u, EL3/4x18s-u, EL3/4x24s-u (three lamp connection)
8	EL3/4x14s-u, EL3/4x18s-u, EL3/4x24s-u (four lamp connection)
9	EL2x18ngn, EL2x36ngn, EL2x58ngn
10	EL4x18ngn
11	EL1/2x14/17TCs , EL1/2x18-42TCs, EL1/2x18TCs, EL1/2x9-13TCs, EL1/2x36/38TCs
12	EL1/2x14/17TCs , EL1/2x18-42TCs, EL1/2x18TCs, EL1/2x9-13TCs, EL2x32/42TCs, EL1/2x36/38TCs
13	EL1x14/17TCs , EL1x18-42TCs, EL1x18TCs, EL1x9-13TCs

Characteristics

	EL-s / EL-su	EL-ngn	EL-TCs
Max.temperature at t_C point	75 °C [3) 4)]	75 °C	75 °C
Ambient temperature range	-20…+50 °C [7)]	-20...+50 °C	-20…+50 °C
Storage temperature range	-40…+80 °C	-40...+80 °C	-40…+80 °C
Maximum relative humidity	no condensation	no condensation	no condensation
Number of starts per lamp	> 50 000	> 50 000	> 50 000
AC Range	198-264 VAC [5)6)]	198-264 VAC	198-264 VAC
DC range (starting voltage >190VDC)	176-280 VDC [6)]	176-280 VDC	176-280 VDC [1)]
Over voltage duration	320 VAC, 1 h	320 VAC, 1 h	320 V / 1 h
Power factor (at maximum), typical	0.98	0.98	> 0.95
Earth leakage current	< 0.4 mA	< 0.4 mA	< 0.4 mA
Maximum working voltage (Uout)	400 V	350 V	250 V [2)]
Lifetime (90 % survival)	50 000 h, at t_C	50 000 h, at t_C	50 000 h, at t_C
Max length of ballast to lamp wiring	2 m	1.5 m	1 m / 2 m (hot / cold)
Ignition time, typical	~1.0 s	< 1 s	~1 s

1) For 2 x 42 W lamp, DC range is 190-280 V
2) EL2x32/42TCs 300 V
3) For EL 3/4x14s and EL 3/4x18s, t_C = 80 °C
4) For EL 2x70s, t_C = 70 °C
5) For EL2x70s and EL2x80s-u AC range is 204-264 V
6) EL2x70s, EL2x55s and EL2x80s-u max 6 hours at 176-190 VDC
7) For 3/4x24W TC-F lamps, T_a = >18°C

Standards

	EL-s / EL-su	EL-ngn	EL-TCs
General and safety requirements EN61347-2-3	●	●	●
Additional safety requirements for AC/DC supplied ballasts acc. to EN61347-2-3 Annex J	●	●	●
Performance requirements EN60929	●	●	●
Preheat starting	●	●	●
Lamp life acc. to EN60081 / EN60901 *)	●	●	●
Mains current harmonics, acc. to EN61000-3-2	●	●	●
Radio Frequency Interference, acc. to EN55015	●	●	●
Immunity standard, acc.to EN61547	●	●	●
Vibration test EN60068-2-64 test Fh	●	●	●
Bump test EN60068-2-29 test Eb	●	●	●
Thermal protection class EN61347, C5e	●	●	●

** EN 60081 for T5 & T8 fluorescent lamps, EN 60901 for compact fluorescent lamps*