

Electronic ballasts for T8 fluorescent lamps



18-58 W 220-240 V, 50-60 Hz

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- Energy saving
- Warm Start according to lamp standards
- Flickerless light
- Covers EMC requirements
- Low harmonics
- Low power losses
- Stabilized output

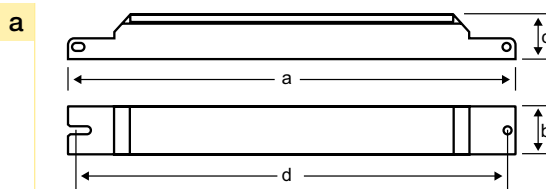


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Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power
						(p.18)	(g)	(W)	(A)	(W)
	18	1	EL1x18ngn	A2	1	1	190	19	0.09-0.08	16
	18	2	EL2x18ngn	A2	1	9	200	37	0.16-0.15	16
	18	4	EL4x18ngn	A2	1	10	200	72	0.33-0.30	16
	36	1	EL1x36ngn	A2	1	1	191	36	0.16-0.15	32
	36	2	EL2x36ngn	A2	1	9	205	71	0.32-0.29	32
	58	1	EL1x58ngn	A2	1	1	193	55	0.26-0.23	50
	58	2	EL2x58ngn	A2	1	9	218	108	0.50-0.45	50

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

Dimensions	1
Length 'a' (mm)	280
Width 'b' (mm)	30
Height 'c' (mm)	28
'd' (mm)	270



Delivery information

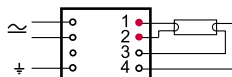
Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	One-way pallet 1200 x 820 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x ngn	10	●	1600	330	60
EL2 x ngn	10	●	1600	320-360	60
EL4 x ngn	10	●	1600	370	60

Connection diagrams

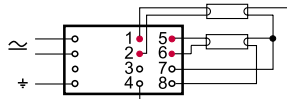
1 EL-s, EL-su, EL-ngn, EL-TCs

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

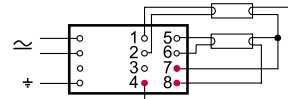
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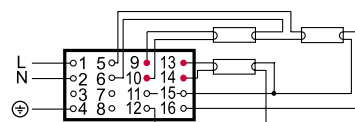
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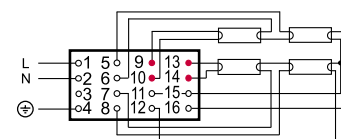
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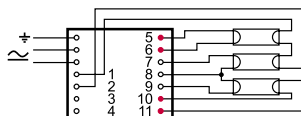
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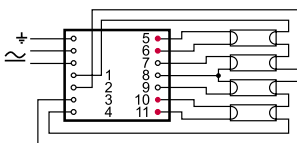
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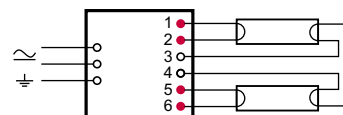
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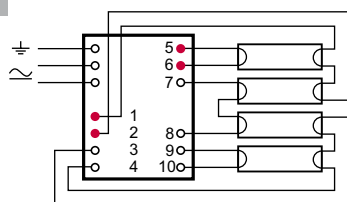
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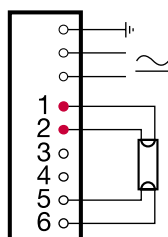
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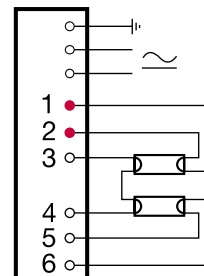
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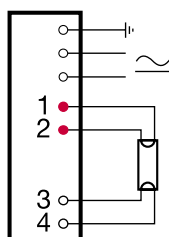
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12



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- | | |
|----|---|
| 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

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	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