

Controllable (1-10 V) electronic ballasts for T8 fluorescent lamps

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

- Switch-Control / Analogue control ¹⁾
- Only 21 mm high
- Standard & sidemount possibilities
- Dimming range 1-100 % ²⁾
- Microprocessor controlled
- User friendly, quick release connectors
- Low energy consumption
- Flickerless light



A1											
Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power	
						[p.14]	[g]	[W]	[A]	[W]	
T8	18	1	EL1x18sc	A1	1	8	270	19	0.09-0.08	16	
	18	2	EL2x18sc	A1	2	9	340	37	0.18-0.15	16	
	18	4	EL4x18sc ²⁾	A1	2	10	340	72	0.33-0.30	16	
	36	1	EL1x36sc	A1	1	8	270	37	0.17-0.16	32	
	36	2	EL2x36sc	A1	2	9	340	71	0.33-0.30	32	
	58	1	EL1x58sc	A1	1	8	270	55	0.27-0.26	50	
	58	2	EL2x58sc	A1	2	9	340	108	0.50-0.46	50	

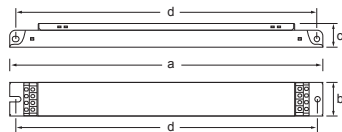
Note: See pages 14-17 for connection diagrams and additional characteristics.

1) Simultaneous lighting control by Switch-Control and Analogue control

2) Dimming range 3-100 % for 4x18sc

For information on compatibility with amalgam lamps, please contact your local Helvar representative.

Dimensions	1	2
Length 'a' [mm]	360	430
Width 'b' [mm]	30	30
Height 'c' [mm]	21	21
'd' [mm]	350	420



Delivery information					
Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	EUR pallet 1200 x 800 [pcs.]	Pallet weight [kg]	Pallet height [cm]
EL1 x sc	10	●	980	300	40
EL2 x sc	10	●	840	325	43
EL4 x sc	10	●	840	325	43

Controllable (1-10 V) electronic ballasts for compact fluorescent lamps

24-80 W 220-240 V, 50-60 Hz

- Switch-Control / Analogue control ¹⁾
- Only 21 mm high
- Standard & sidemount possibilities
- Dimming range 1-100 %
- Microprocessor controlled
- User friendly, quick release connectors
- Low energy consumption
- Flickerless light



A1											
Lamp type	Wattage	No. of lamps	Ballast	EEL	Dimensions	Connection	Weight	Circuit power	Mains current	Lamp power	
						[p.14]	[g]	[W]	[A]	[W]	
TC-L	24	2	EL2x24sc ²⁾	A1	2	9	340	50	0.24-0.20	24	
	36	1	EL1x36sc	A1	1	8	270	37	0.17-0.16	32	
	36	2	EL2x36sc	A1	2	9	340	71	0.33-0.30	32	
	40	1	EL1x39sc ²⁾	A1	1	8	270	44	0.20-0.18	40	
	55	1	EL1x55sc	A1	1	8	270	61	0.28-0.26	55	
	55	2	EL2x55sc	A1	2	9	340	117	0.53-0.49	55	
TC-F	80	1	EL1x80sc ²⁾	A1	1	8	270	88	0.41-0.38	80	
	24	2	EL2x24sc ²⁾	A1	2	9	340	50	0.24-0.20	24	
T5c	36	1	EL1x36sc ²⁾	A1	1	8	270	37	0.17-0.16	32	
	36	2	EL2x36sc ²⁾	A1	2	9	340	71	0.33-0.30	32	
	40	1	EL1x39sc ²⁾	A1	1	8	270	43	0.20-0.18	40	

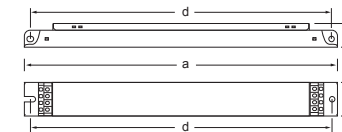
Note: See pages 14-17 for connection diagrams and additional characteristics.

1) Simultaneous lighting control by Switch-Control and Analogue control

2) Tested and recommended by Helvar, not ENEC approved combination

For information on compatibility with amalgam lamps, please contact your local Helvar representative.

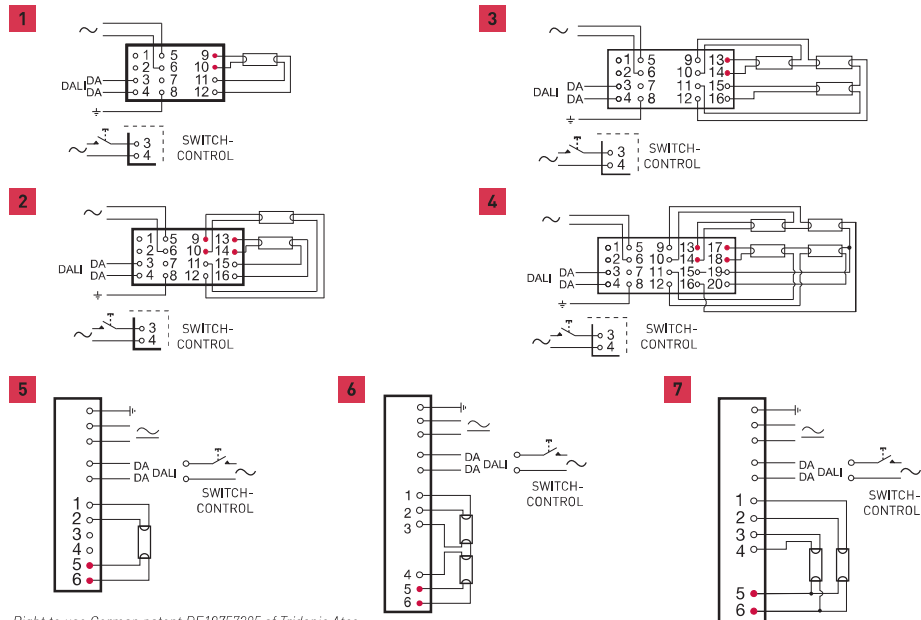
Dimensions	1	2
Length 'a' [mm]	360	430
Width 'b' [mm]	30	30
Height 'c' [mm]	21	21
'd' [mm]	350	420



Delivery information					
Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	EUR pallet 1200 x 800 [pcs.]	Pallet weight [kg]	Pallet height [cm]
EL1 x sc	10	●	980	300	40
EL2 x sc	10	●	840	325	43
EL4 x sc	10	●	840	325	43

EL-iDim

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

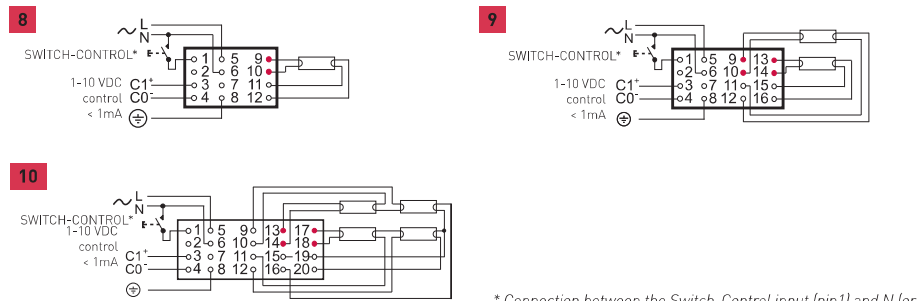


Right to use German patent DE19757295 of Tridonic Atco

1	EL1x ...iDim
2	EL2x ...iDim
3	EL3x ...iDim
4	EL4x ...iDim
5	EL1/2x...iDim-c
6	EL1/2x...iDim-c
7	EL2x...iDim-c

EL-sc

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



* Connection between the Switch-Control input (pin1) and N (or L).

1	EL1x ...sc
2	EL2x ...sc
3	EL4x ...sc

	EL-iDim	EL-iDim-c	EL-sc
Max. temperature at t _c point	75 °C ³⁾	75 °C	80 °C
Ambient temperature range	+10...+50 °C ¹⁾⁵⁾⁴⁾	+10...+50 °C ⁵⁾	+10...+50 °C ¹⁾
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	198-264 VAC	198-264 VAC
DC range (starting voltage >198VDC)	176-280 VDC	176-280 VDC	176-280 VDC
Over voltage duration	320 VAC, 1h	320 VAC, 1h	320 VAC, 1 h
EBLF (Emergency Ballast Lumen Factor)	N/A	> 0,5 ⁷⁾	N/A
BLF (Ballast Lumen Factor), steady state	-1	-1	-1
Programmable light output for DC operation	yes	yes	N/A
Power factor (at maximum), typical	0,96	0,96	0,98
Earth leakage current	< 0,4 mA	< 0,4 mA	< 0,4 mA
Maximum working voltage (Uout)	400 V	400 V	400 V
Lifetime (90 % survival)	50 000 h, at t _c	50 000 h, at t _c	50 000 h, at 70 °C t _c
Max length of ballast to lamp wiring	1,5 m / 2 m (hot / cold) ²⁾⁴⁾	1 m / 1 m (hot / cold) ⁴⁾	1,5 m/2 m (hot/cold) ²⁾
Max length of DALI control wires	300 m ⁹⁾	300 m ⁹⁾	N/A
Ignition time, typical	1,0 s	1,0 s ⁸⁾	<1,3 s
Type of starting	Preheat (warm start)	Preheat (warm start)	Preheat (warm start)

- 1) To ensure stable operation of TC-L lamps in ambient temperatures below 18 °C it is not recommended to dim the light level below 3 %
- 2) For TC-L lamps 1 m / 2 m (hot/cold lamp wires)
- 3) For EL 3x14iDim, t_c = 65 °C
- 4) Minimise lamp wire length variations in order to avoid imbalance in light output.
- 5) When using EL3x14iDim, EL4x14iDim and EL1/2x18/24iDim-c ballasts in ambient temperatures below 15 °C it is not recommended to dim the light level below 10 % to ensure stable lamp operation.
- 6) For EL2x80iDim, it is not recommended to dim the light below 5 % in temperatures below 15 °C
- 7) EL2x26-42iDim-c; EBLF > 0,3
- 8) EL1/2x18/24iDim-c ignition time = 1.4 s
- 9) Maximum allowed voltage drop is 2 V in 250 m wire

Standards

	EL-iDim	EL-iDim-c	EL-sc
General and safety requirements EN61347-2-3	●	●	●
Additional safety requirements for AC/DC supplied ballasts acc. to EN61347-2-3 Annex J	●	●	N/A
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	●	●	●
Tested and proven compatible with DALI V1 (IEC62386, 2009)	●	●	N/A

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