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 & Side mounting
- Dimming range 1-100 % [2]
- Microprocessor controlled
- User friendly, quick release connectors
- Low energy consumption
- Flickerless light

A1

2

Lamp type	Wattage	No. of lamps	Ballast	EEI	Dimensions	Connection (p.26)	Weight (g)	Circuit power (W)	Mains current (A)	Lamp power (W)
	18	1	EL1x18sc	A1	1	1	270	19	0.09-0.08	16
	18	2	EL2x18sc	A1	2	2	340	37	0.18-0.15	16
	18	4	EL4x18sc [2]	A1	2	3	340	72	0.33-0.30	16
	36	1	EL1x36sc	A1	1	1	270	37	0.17-0.16	32
	36	2	EL2x36sc	A1	2	2	340	71	0.33-0.30	32
	58	1	EL1x58sc	A1	1	1	270	55	0.27-0.26	50
	58	2	EL2x58sc	A1	2	2	340	108	0.50-0.46	50
	70	1	EL1x70sc	A1	1	1	270	65	0.31-0.27	60

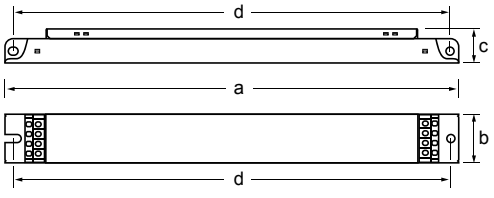
Note: *See pages 26-28 for connection diagrams and additional characteristics.*

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

2) Dimming range 3-100 % for 4x18sc

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

a



Delivery information

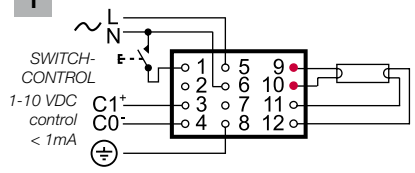
Ballast	Unit package		Transportation package		
	Minimum delivery amount	Plastic binding strip	EUR pallet 1200 x 800 (pcs.)	Pallet weight (kg)	Pallet height (cm)
EL1 x sc	10	●	980	300	40
EL2 x sc	10	●	840	325	43
EL4 x sc	10	●	840	325	43

Connection diagrams

EL-sc

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

1



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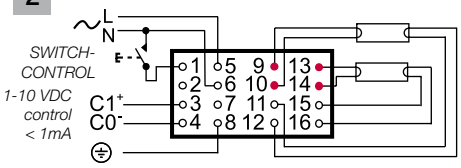

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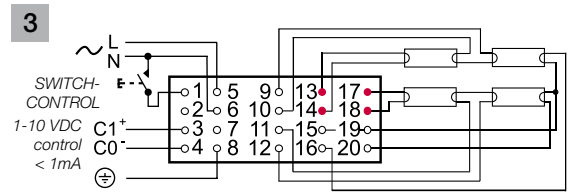

1	EL1x ...sc
2	EL2x ...sc
3	EL4x ...sc

Characteristics

	EL-sc
Max.temperature at t_C point	80 °C
Ambient temperature range	+10…+50 °C [1)]
Storage temperature range	-40…+80 °C
Maximum relative humidity	no condensation
Number of starts per lamp	> 50 000
AC Range	198-264 VAC
DC range (starting voltage >190VDC)	176-280 VDC
Over voltage duration	320 VAC, 1 h
Power factor (at maximum), typical	0.98
Earth leakage current	< 0.4 mA
Maximum working voltage (Uout)	400 V
Lifetime (90 % survival)	50 000 h, at 70 °C t_c
Max length of ballast to lamp wiring	1.5 m/2 m (hot/cold)[2)]
Ignition time, typical	<1.3 s

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)

Standards

	EL-sc
General and safety requirements EN61347-2-3	●
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*

Switch-Control information, EL-sc ballasts

Switch-Control provides ON/OFF switching and UP/DOWN dimming functionality from one or more simple switches. Switch-Control can be used together and simultaneously with other compatible control devices.

- EL-sc ballasts and analogue 1-10 V control.

Suitable switch:

- Automatic return type. Mains rated (Mains is still present at the ballast terminals if the lamps are switched off from Switch-Control).
- The switch should withstand a short circuit current of:
  - 0.2 mA per ballast

Connection:

- Between the Switch-Control input and N (or L).
- Wire length: 200 m maximum.
- Ballasts per switch: 50 (observe above).
- Ensure all ballasts and associated switches are connected to the same mains phase.

Operation:

- Switch off: Short push of the switch (<0.4 second).
- Switch on: Short push of the switch (<0.4 second).
  - Re-strike within 3 seconds of switch off is prevented to ensure optimal lamp warm start.
  - EL-sc ballasts will switch on to the analogue control set level.
- Dimming: Long push of the switch (>0.5 second).
  - If lamps are off, the ballast dims up from minimum.
  - If lamps are on, the ballast dims in the opposite direction to previously.

Regaining analogue control when Switch-Control is active:

- Dim the analogue control device from min. to max. and back to minimum within 1 second.

Correction of out of sequence operation:

- Switch the mains supply off and on, or…
- Long push (until all lamps are on), then a short push (all lamps off), then wait 3 seconds and switch on (short push).

Compatibility:

Some ballasts manufacturers have functionality similar to Helvar Switch-Control. In most cases these methods are NOT COMPATIBLE with each other.

Connection

Between the Switch-Control input (pin1) and L (or N).