Helvar

EL-sc controllable ballasts

lighting the way **forward**

The EL-sc range - Ballasts for superior luminaires

"Standard and side-mount in a 21mm high case"

Today's constantly changing needs of lighting means that flexibility has to be an integral part of your lighting solution. To meet this, Helvar have developed EL-sc ballasts for T5, TC-L and T8 lamps.

Utilising the latest digital technology, the features of EL-sc make it ideal for use in applications where the highest quality flexible lighting control is needed.

Meeting the needs

Whether you are looking for the most cost-effective solution, the simplest control, energy saving, system flexibility or unsurpassed performance of your fluorescent lighting, Helvar can provide the solution with EL-sc and Lighting Control Products.

Features

Our unique offering of features has made Helvar EL-sc the first choice of reputable users. All ballasts in Helvar's EL-sc range are only 21mm high and enable the design of innovative low profile dimmable luminaires meeting the trend for slim, elegant lighting.

Unlike any other available method, the full EL-sc range is unique in that it can be connected and used together and simultaneously with standard analogue control devices, simple returnable switches and constant light sensors. This Multicontrol feature provides huge advantages in system flexibility and energy saving. Switch-Control ensures that dimming could not be simpler, by providing control over the full 1%-100% dimming range and ON/OFF functionality.

Multi-point control can be achieved just by adding more switches to the system.

OCC - digital concept

The microprocessor controlled EL-sc range ensures that no part of the system is subjected to stresses that could lead to premature failure. It provides optimum lamp parameters at all dimming levels and smooth starting of the lamps even at 1%.

This results in minimised system losses, reduced temperatures and the longest possible lamp and ballast lifetime.

To ensure that the fitting you design, specify and use is equipped to provide you with the ultimate performance, just look inside. If the ballast has the OCC Key mark you have got the optimum solution.

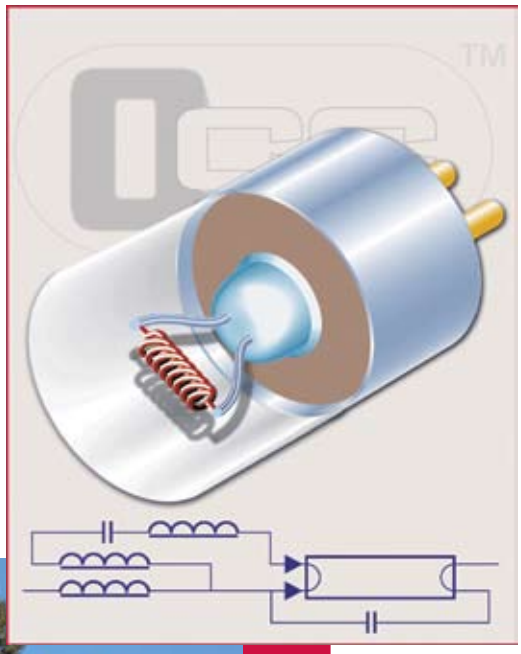
Quality, Reliability and Environment

Helvar design its products according to strict rules. All designs are subjected to thorough type testing, environmental stress screening, lifetime tests and 100% final production testing. The use of carefully selected components, reliable suppliers and ISO9001 quality system procedures ensure quality and reliability are at the forefront of all Helvar designs.

Everyone at Helvar is committed to the good quality, performance and continuous improvement of our designs and products. We also continuously evaluate our production methods to ensure the products are as environmentally friendly as possible.

Main benefits

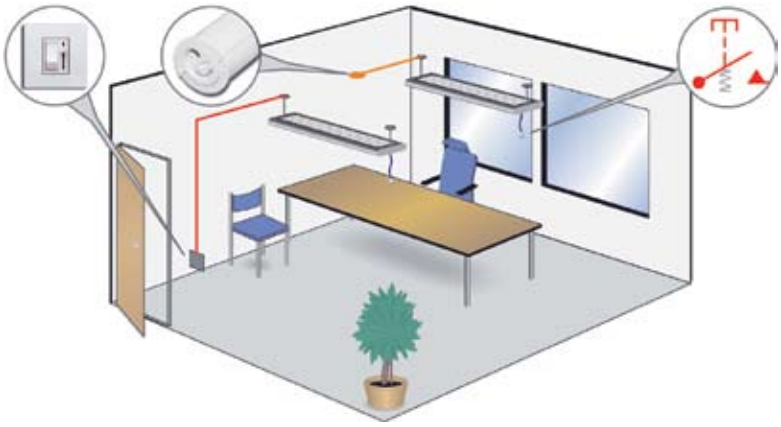
- Modern slim luminaire design possible
- Cost effeciency with control flexibility
- Highest reliability
- Energy efficiency
- Long lamp lifetime
- Smooth starting and dimming from 1 to 100%



How to control EL-sc

The EL-sc range of controllable ballasts is compatible with the 1-10V analogue control specifications in the standard EN60929 and all devices designed accordingly.

With a combination of a TK4, Switch-Control and MIMO2 you can create an energy saving and user friendly lighting application.



Switch-Control from a simple switch

Full 1-100% dimming range and ON/OFF functionality can be achieved by using any simple mains rated commercially available retractive switch. This can also be connected and simultaneously used together with other external control devices like Helvar TK4 and MIMO2.

Helvar TK4

An electronic slider controller and mains switch for electronic ballasts. It is suitable for controlling up to 50 and switching up to 20 Helvar EL-sc ballasts, (Use a contactor for switching more than this).

The TK4 is available in the following standard finishes:

- Stainless steel / Carbon fibre
- Satin white plastic
- Lacquered polished brass
- Satin stainless steel

Helvar MIMO2

MIMO 2 offers simple control of up to 15 EL-sc ballasts. It provides automatic daylight control of fluorescent luminaires achieving maximum energy savings in offices, schools, factories, airports and shopping centres. It can easily be fitted into new or existing luminaires, or externally just ceiling mounted.

Applications

Helvar

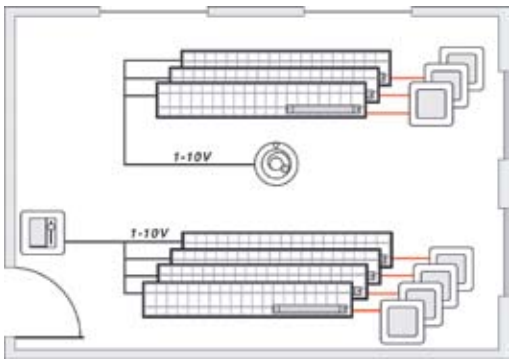
EL-sc ballasts provide desired flexibility and efficiency for any fluorescent lighting application. They are suitable for simple, energy efficient applications, venues where lighting creates a comfortable environment and places where stable, precise and flickerless light is needed.

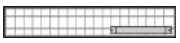
- Offices
- Warehouses
- Stores
- Restaurants
- Museums
- Schools
- Conference suites
- Photographic studios
- Hospitals

Energy saving lighting control application

A room where one area needs the flexibility of control from a master slider, the other requires constant light functionality. It should be possible for each fitting to be manually overridden by the user.

System overview



 *Luminaires fitted with EL-sc ballasts*

 *MIMO2 constant light sensor*

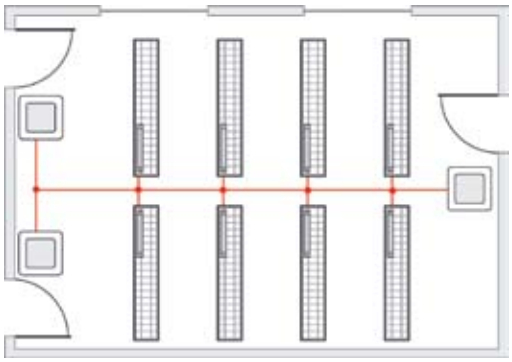
 *TK4 slider switch*

 *Simple retractive switches*

Simple multi-point control application

Simple ON/OFF and UP/DOWN control of the lighting from one or more locations in the room.

System overview



 *Luminaires fitted with EL-sc ballasts*

 *Simple retractive switches*

Technical data

- *Optimum Cathode Control*
- *Simultaneous lighting control by Switch-Control and Analog control*
- *Only 21 mm high*
- *Fixing flexibility*
- *Dimming range 1-100%**
- *Microprocessor controlled*
- *Extremely low energy consumption*
- *Flickerless light*



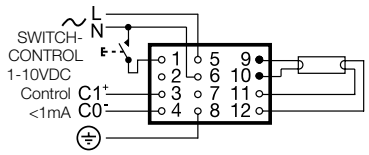

Lamp type	(W)	No. of lamps	Ballast type	Total circuit power (W)	Mains current at full (A)	Power in lamp (W)	Operating frequncy range (kHz)	Wiring no.
T5	14	1	EL1x14sc	17	0.07-0.06	13.7	50-110	1
	21	1	EL1x21sc	24	0.11-0.10	20.7	40-90	1
	24	1	EL1x24sc	26	0.13-0.12	22.5	40-80	1
	28	1	EL1x28sc	31	0.15-0.14	27.8	50-80	1
	35	1	EL1x35sc	39	0.18-0.17	34.7	50-70	1
	39	1	EL1x39sc	42	0.20-0.18	38	70-110	1
	49	1	EL1x49sc	54	0.25-0.23	49.3	40-90	1
	54	1	EL1x54sc	60	0.28-0.26	53.8	40-100	1
	80	1	EL1x80sc	88	0.41-0.38	80	40-110	1
	14	2	EL2x14sc	31	0.15-0.14	13.7	50-100	2
	21	2	EL2x21sc	46	0.22-0.20	20.7	50-90	2
	24	2	EL2x24sc	50	0.24-0.20	22.5	40-110	2
	28	2	EL2x28sc	64	0.30-0.28	27.8	50-90	2
	35	2	EL2x35sc	78	0.36-0.34	34.7	50-70	2
	39	2	EL2x39sc	83	0.40-0.36	38	60-110	2
	49	2	EL2x49sc	106	0.50-0.46	49.3	50-110	2
	54	2	EL2x54sc	116	0.53-0.49	53.8	50-110	2
	14	4	EL4x14sc *	62	0.29-0.27	13.7	50-70	3
TC-L	24	1	EL1x24sc **	26	0.13-0.12	22.5	40-80	1
	36	1	EL1x36sc	37	0.17-0.16	32	55-115	1
	40	1	EL1x39sc **	43	0.20-0.18	40	70-110	1
	55	1	EL1x55sc	61	0.28-0.26	55	45-95	1
	80	1	EL1x80sc	88	0.40-0.36	80	30-100	1
	24	2	EL2x24sc **	50	0.24-0.20	22.5	40-110	2
	36	2	EL2x36sc	71	0.33-0.30	32	55-115	2
	40	2	EL2x39sc **	89	0.37-0.34	40	65-105	2
	55	2	EL2x55sc	118	0.54-0.50	55	45-95	2
T8	18	1	EL1x18sc	19	0.09-0.08	16	50-110	1
	36	1	EL1x36sc	37	0.17-0.16	32	55-115	1
	58	1	EL1x58sc	55	0.28-0.26	50	50-110	1
	70	1	EL1x70sc	65	0.31-0.27	60	50-100	1
	18	2	EL2x18sc	37	0.18-0.15	16	53-125	2
	36	2	EL2x36sc	71	0.33-0.30	32	55-115	2
	58	2	EL2x58sc	108	0.50-0.48	50	50-110	2
	18	4	EL4x18sc	72	0.32-0.29	16	50-100	3

**) Dimming range 3-100%, for EL4x14sc and EL4x18sc*

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

Wiring diagrams

1.



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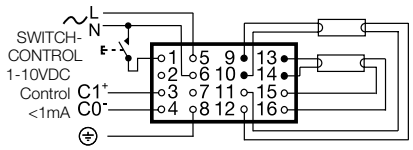

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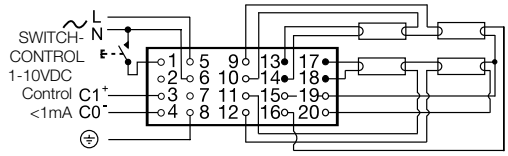


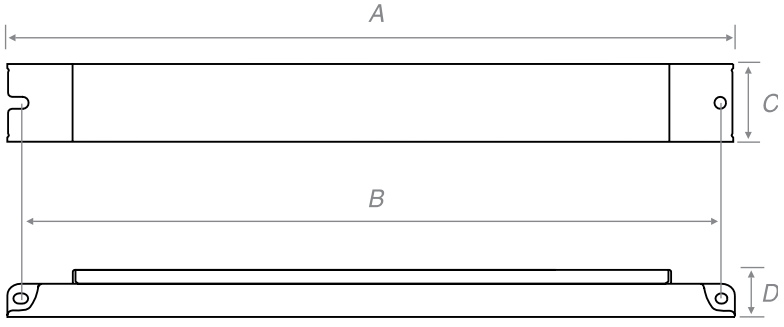
Characteristics

• *CE marked*	
• *General and safety requirements*	*EN 61347-2-3*
• *Performance requirements*	*EN 60929*
• *Lamp life acc. to*	*EN 60081*
• *Mains current harmonics, acc. To*	*EN 61000-3-2*
• *Radio Frequency Interference, acc. To*	*EN 55015*
• *Immunity standard, acc. To*	*EN 61547*
• *Vibration test*	*EN 60068-2-64 test Fh*
• *Bump test*	*EN 60068-2-29 test Eb*
• *Thermal protection class*	*EN 61347, B.6.2e*
• *Ambient temperature range:*	*+10…+50°C **
• *Storage temperature range:*	*-40…+80°C*
• *Maximum relative humidity:*	*no condensation*
• *Number of starts per lamp:*	*> 50 000*
• *Mains voltage tolerance:*	*±10 %*
• *DC range:*	*176 - 280 VDC*
• *Over voltage duration:*	*320 VAC, 1h*
• *Power factor (at maximum), typical:*	*0.98*
• *Earth leakage current:*	*< 0.4 mA*
• *Maximum working voltage (Uout):*	*400V*
• *Lifetime (90% survival):*	*50 000 h, at 70°C Tc*

**) 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%*

Dimensions

Dimensions	1x…sc	2x…sc 4x…sc
A (mm)	360	430
B (mm)	350	420
C (mm)	30	30
D (mm)	21	21
Weight	285	365



Helvar

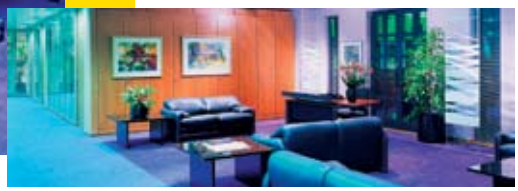
Who are **Helvar?**

Helvar develops, manufactures, and markets ballasts and lighting electronics for the luminaire industry and other customers specialising in lighting.

Helvar has a long tradition as a forerunner in its field, and always utilises the latest technology to ensure that its products are of high quality, have first-class technical properties and conform to local regulations.

Helvar focuses on controllable and non-controllable electronic ballasts, lighting control products and magnetic ballasts, thus offering its customers a tailored products and solution portfolio.

Helvar has its headquarters and ballast competence centre in Karkkila, Finland. The lighting control system competence centre is located in London, England. Helvar has own sales offices and representatives all over the world.



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