Single-Channel Leading Edge Dimmer (416S and 425S)

416S: 16 A
425S: 25 A

The DIGIDIM 416S (16 Amp) and 425S (25 Amp) are wall-mounted single-channel leading edge (thyristor) dimmers. Both units also include a 16 A relay circuit.

Controllable by S-DIM, DMX, and Analogue, and fully DALI-compatible for use as Load Interface Units in a DIGIDIM lighting control system, the 416S and 425S can also function as stand-alone dimmers.

They can be connected to mains voltage lamps directly, or to low voltage lamps via a wire-wound transformer, and have a selectable, integral DALI power supply.
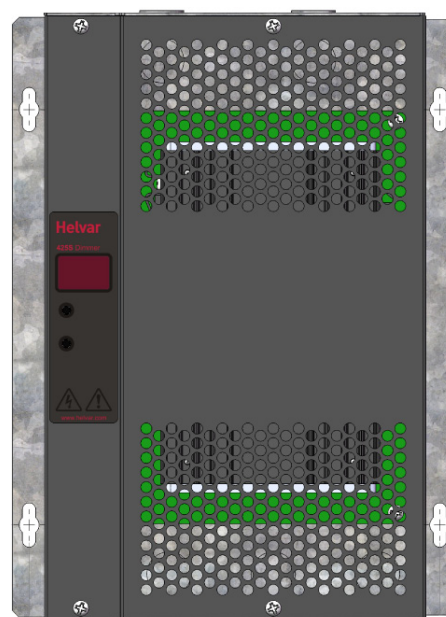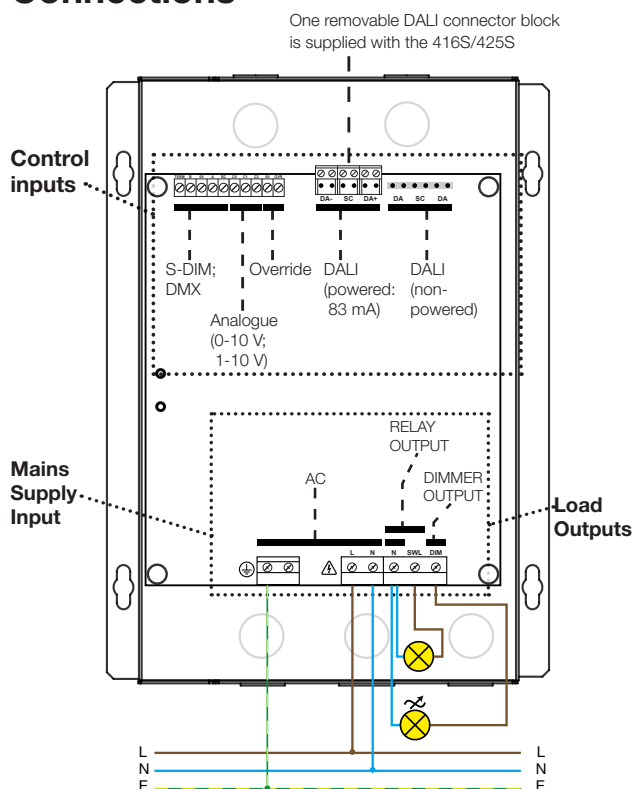
Key features

- Out of box operation. No programming required when using DIGIDIM slider, rotary or push button panels.
- Input voltage fluctuation compensation ensures stable output levels with fluctuating incoming mains levels.
- Selectable, integral DALI power supply.
- Over-temperature protection.
- Programmable interface with buttons and LED display.
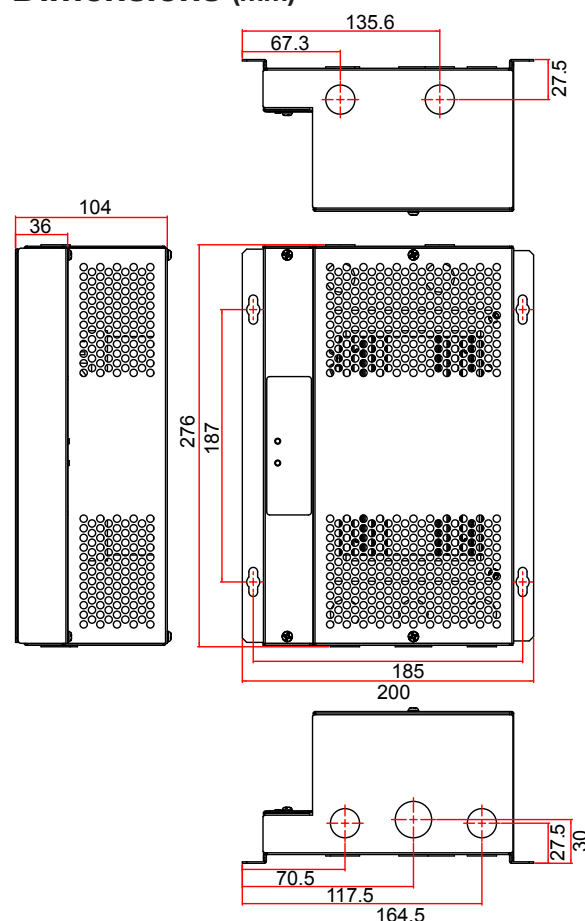- Programmable in Designer™ and Digidim Toolbox™

Installation notes

- The dimmer is for use with incandescent lamps and low voltage lamps via wire-wound transformers. It is suitable for use with electronic transformers, if use is approved by the transformer manufacturer.
- The external mains supply must be protected.
- DALI and Mains cabling must be 230 V mains rated

Connections

Dimensions (mm)

Helvar Digidim 416S and 425S Single-Channel Leading Edge Dimmer: Datasheet

Technical Data

Power and Protection

Power consumption:	1.3 W (with no output load)
Heat dissipation:	416S: 39 W with maximum load (resistive); 425S: 67 W with maximum load (resistive)
External protection	The mains supply input must be externally protected by an MCB or fuse of a suitable rating. 416S: 16 A Type C MCB maximum. 425S: 25 A Type C MCB maximum.
Thermal protection:	Control board – resettable fuse Power devices – thermal sensing

Mains supply input

Connections (L, N, E):	Solid: ≥ 6 mm² ; Stranded: ≥ 4 mm²
Terminal type:	Screw terminals
Mains supply voltage:	85 VAC to 264 VAC, 45 - 65 Hz
Cable strip length:	8 mm

Control inputs

DALI

Connections:	1x DALI (standard, non-powered); 1x DALI powered (83 mA). 2-part DIGIDIM connector with paired screw terminals (one supplied with unit)
Cable type and size:	0.5 mm² — 1.5 mm² stranded or solid
Cable strip length:	6 mm
DALI consumption:	2 mA
DALI supply output:	Powered DALI: 83 mA (max), 20 VDC (nominal)
DALI data transfer:	DALI standard IEC62386, with Helvar extensions

S-DIM / DMX inputs

Connections:	S-DIM and DMX use the same input connections
Terminal type:	Screw terminals
Cable type and size:	0.22 mm² — 1.5 mm² ; low-loss RS485 Type (multi-stranded, twisted and shielded). One twisted pair for A and B (85 Ω to 100 Ω impedance), one core or twisted pair for 0 V, and shield for screen. Example: Belden 8102 or Alpha 6222C
Cable strip length:	6 mm
Max. cable length:	1000 m (low-loss cable)
S-DIM data transfer:	Helvar protocol (RS485, 115 kbps)
DMX data transfer:	DMX512-A protocol

Analogue input

Terminal type:	Screw terminals
Cable type and size:	2-wire; 0.22 mm² — 1.5 mm² (screened and twisted)
Max. cable length:	50 m

Data subject to change without notice

Override input

Terminal type:	Screw terminals
Cable type and size:	2-wire; 0.22 mm² — 1.5 mm² (screened and twisted)
Cable strip length:	6 mm
Max. cable length:	50 m
Voltage and current:	Input voltage: $V_{in} < 1.5$ V; Short-circuit current $I_{short} = 1$ mA

Load outputs

Dimmed output

Terminal type:	Screw terminals
Cable type and size:	Solid: ≥ 6 mm² ; Stranded: ≥ 4 mm²
Cable strip length:	8 mm

Relay output (Switched load output)

Terminal type:	Screw terminals
Cable type and size:	Solid: ≥ 6 mm² ; Stranded: ≥ 4 mm²
Cable strip length:	8 mm
Load current:	416S: 16 A; 425S: 16 A
Relay contacts:	High inrush

Conformity and Standards

EMC Emission:	EN 61000-6-3
Immunity:	EN 61547
Harmonics:	EN 61000-3-2*

* May be subject to conditional connection for use above 16 A.

Safety:	EN 60950
Isolation:	4 kV
IP rating:	IP 20
Environmental:	Complies with WEEE and RoHS directives

Mechanical Data

Mounting:	Vertical mounted, secured by four 'keyhole' slots.
Dimensions:	200 mm (W) x 274 mm (H) x 104 mm (D)
Weight:	416S: 2 kg; 425S: 2.6 kg
Housing:	Powder coated steel (grey)

Operating and Storage Conditions

Ambient Temperature:	0ºC — +40ºC
Storage Temperature:	-10°C — +70°C
Relative Humidity:	Max 90%, non-condensing

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