

# Technical Data – Switching Actuators and Dimming Actuators for the Eltako RS485 bus

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	<b>FSR14-4x, FSB14, FHK14, F4HK14</b>	<b>FUD14, FUD14/800W<sup>7)</sup></b>	<b>FSG14/1-10V<sup>8)</sup></b>	<b>FSR14-2x<sup>9)</sup>, FASR14-LED, FMS14, FTN14<sup>9)</sup>, FFR14, FMZ14, FZK14<sup>9)</sup>, F2L14<sup>9)</sup></b>	<b>FSR14SSR</b>
<b>Contacts</b>					
Contact material/contact gap	AgSnO <sub>2</sub> /0.5 mm	Power MOSFET	AgSnO <sub>2</sub> /0.5 mm	AgSnO <sub>2</sub> /0.5 mm	Opto-Triac
Test voltage control connections/contact	–	–	–	2000V	4000V
Rated switching capacity each contact	4 A/250V AC	–	600VA <sup>9)</sup>	16 A/250V AC; FMZ14: 10 A/250V AC F4SR14: 8 A/250V AC	up to 400W <sup>9)</sup>
incandescent lamps and halogen lamp load 230V <sup>2)</sup>	1000W I on ≤ 10A/10ms	up to 400W; FUD14/800W: up to 800W <sup>1) 3) 4)</sup>	–	2000W F4SR14: 1800W I on ≤ 70A/10ms	up to 400W <sup>9)</sup>
Fluorescent lamp load with KVG* in lead-lag circuit or non compensated	500VA	–	–	1000VA	–
Fluorescent lamp load with KVG* shunt-compensated or with EVG*	250VA, I on ≤ 10A/10ms	–	600VA <sup>9)</sup>	500VA	up to 400VA <sup>9)</sup>
Compact fluorescent lamps with EVG* and energy saving lamps ESL	up to 200W <sup>9)</sup>	up to 400W <sup>9) 1)</sup>	–	up to 400W <sup>9)</sup>	up to 400W <sup>9) 9)</sup>
Inductive load cos φ = 0,6/230V AC inrush current ≤ 35A	650W <sup>9)</sup>	–	–	650W <sup>9)</sup>	–
230V LED lamps	up to 200W <sup>9)</sup>	up to 400W <sup>9) 1)</sup>	–	up to 400W <sup>9)</sup>	up to 400W <sup>9) 9)</sup>
Max. switching current DC1: 12V/24V DC	4 A	–	–	8 A (not FTN14 and FZK14)	–
Life at rated load, cos φ = 1 or for incandescent lamps 500W at 100/h	>10 <sup>6</sup>	–	>10 <sup>6</sup>	>10 <sup>6</sup>	∞
Service life at rated load, cos φ = 0,6 at 100/h	>4x10 <sup>4</sup>	–	>4x10 <sup>4</sup>	>4x10 <sup>4</sup>	∞
Max. operating cycles	10 <sup>3</sup> /h	–	10 <sup>3</sup> /h	10 <sup>3</sup> /h	10 <sup>3</sup> /h
Maximum conductor cross-section (3-fold terminal)	6 mm <sup>2</sup> (4 mm <sup>2</sup> )	6 mm <sup>2</sup> (4 mm <sup>2</sup> )	6 mm <sup>2</sup> (4 mm <sup>2</sup> )	6 mm <sup>2</sup> (4 mm <sup>2</sup> )	6 mm <sup>2</sup>
Two conductors of same cross-section (3-fold terminal)	2.5 mm <sup>2</sup> (1.5 mm <sup>2</sup> )	2.5 mm <sup>2</sup> (1.5 mm <sup>2</sup> )	2.5 mm <sup>2</sup> (1.5 mm <sup>2</sup> )	2.5 mm <sup>2</sup> (1.5 mm <sup>2</sup> )	2.5 mm <sup>2</sup> (1.5 mm <sup>2</sup> )
Screw head	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv
Type of enclosure/terminals	IP50/IP20	IP50/IP20	IP50/IP20	IP50/IP20	IP50/IP20
<b>Electronics</b>					
Time on	100%	100%	100%	100%	100%
Max./min. temperature at mounting location	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C
Standby loss (active power)	0.1 W	0.3 W	0.9 W	0.05-0.5 W	0.1 W
Local control current at 230V control input	–	–	–	5 mA	–
Max. parallel capacitance (approx. length) of local control lead at 230V AC	–	–	–	FTN14: 0.3μF (1000m)	–

\* EVG = electronic ballast units; KVG = conventional ballast units

<sup>9)</sup> Bistable relay as relay contact. After installation, wait for short automatic synchronisation before teaching-in the wireless pushbuttons.

<sup>1)</sup> If the load exceeds 200W, a ventilation clearance of 1/2 pitch unit to adjacent devices must be maintained.

<sup>2)</sup> Applies to lamps of max. 150W.

<sup>3)</sup> Per dimmer or capacity enhancer it is only allowed to use max. 2 inductive (wound) transformers of the same type, furthermore no-load operation on the secondary part is not permitted. The dimmer might be destroyed. Therefore do not permit load breaking on the secondary part. Operation in parallel of inductive (wound) and capacitive (electronic) transformers is not permitted!

<sup>4)</sup> When calculating the load a loss of 20% for inductive (wound) transformers and a loss of 5% for capacitive (electronic) transformers must be considered in addition to the lamp load.

<sup>5)</sup> Fluorescent lamps or LV halogen lamps with electronic ballast.

<sup>6)</sup> Applies to one contact and the sum of both contacts.

<sup>7)</sup> Capacity increase for all dimmable lamp types with Capacity Enhancer FLUD14.

<sup>8)</sup> All actuators with 2 contacts: Inductive load cos φ = 0.6 as sum of both contacts 1000W max.

<sup>9)</sup> Generally applies to energy saving lamps (ESL) and 230V LED lamps. Due to different lamp electronics, switch on/off problems and a restriction in the maximum number of lamps, however, the dimming ranges may be limited depending on the manufacturer; in particular when the connected load is very low (e.g. with 5W LEDs). The dimmer switch comfort settings EC1, EC2, LC1, LC2 and LC3 optimise the dimming range, however, the maximum power is then only up to 100W. In these comfort settings, no inductive (wound) transformers may be dimmed.

**The second terminating resistor has to be plugged to the last actuator included in the FAM14 respectively FSNT14 scope of supply.**

**Eltako Wireless is based on the EnOcean wireless standard for 868MHz, frequency 868.3MHz, data rate 125 kbps, modulation mode ASK, max. transmit power 7 dBm (<10mW).**

**Compliance with:** EN 61000-6-3, EN 61000-6-1 and EN 60669