

## Command and signaling

### E290 Latching relays



E290

#### E290 Latching Relay

General			
Overall depth	68 mm		
Overall width	1 module (18 mm)		
Color	grey, RAL 7035		
Climate resistance in accordance with	IEC 60068-2-2 (dry heat)		
	IEC 60068-2-30 (humid heat)		
	IEC 60068-2-1 (low temperature)		
Ambient temperature	-25°C to +55°C		
Storage temperature	-40°C to +70°C		
Contact system	Double interruption		
Tightening torque	1.2 - 1.5 Nm		
Weight	0.122 kg		
Standards	50 Hz	IEC/EN 60669-1; IEC/EN 60669-2-2	
	60 Hz	IEC 60669-1; IEC 60669-2-2	
Approvals	50 Hz	VDE	
	60 Hz	RINA	
Power Circuit			
Rated Current $I_n$	E290-16-.../...	16 A	-
	E290-32-.../...	-	32 A
Rated voltage $U_n$	250 VAC		250 VAC
Frequency	50/60 Hz		50/60 Hz
Short circuit withstand capacity $I_{nc}$	3 kA		3 kA
Back-up fuses (gL)	max. 16 A		max. 32 A
Latching Relay contact configurations for 16 A and 32 A Additional power contacts for 16 A (attachable) (not for 32 A version)			1NO; 2NO; 1NO + 1NC 1CO; 2NO; 1NO + 1NC
Max. DC current per contact with 24 VDC	5 A		8 A
Bounce time	50 Hz	< 3 ms	
	60 Hz	< 6 ms	
Power loss in W per contact	0.32 W		1.2 W
Rated impulse withstand voltage $U_{imp}$			4 kV
Max. lamp load			
Glow lamps (20 W - 200 W)	3000 W		4000 W
Flourescent lamps, uncorrected power factor (cos. 0.5)	1800 W		2200 W
Flourescent lamps, corrected power factor (cos. 0.9)	serial	3000 W	4000 W
	parallel	2500 W	3200 W
	single	1800 W	2200 W
	double	2500 W	3200 W
(see also lamp load table)			

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Lifetime (switching cycles)	
Electrical (AC1 rated current load )	150000
Mechanical	250000
Connector cross-sections	
Connecting terminals	solid from 1x1 mm <sup>2</sup> to 1x10 mm <sup>2</sup> or 2x2.5 mm <sup>2</sup> flexible from 1x0.75 mm <sup>2</sup> to 1x16 mm <sup>2</sup> (Cu) with end ferrule or pin cable lug
Control Circuit	
Rated control voltages U <sub>n</sub>	AC: 8 V; 12 V; 24 V; 48 V; 115 V; 230 V DC: -; -; 12 V*; 24 V; 60 V*; 110 V* <small>* for 50 Hz devices only</small>
AC/DC ratio <sup>1)</sup>	1: 0.5 (not available for 8 VAC and 12 VAC coils)
Operation limits	+/- 10% = 0.9 - 1.1 x U <sub>n</sub>
Minimum command duration	50 ms
Max. switching operations	15 x per min. at I <sub>n</sub> 16 A; 8 x per min. at I <sub>n</sub> 32 A
switching noise	60 dB (A) (distance 1 m)
Max. number of illuminated buttons (0.6 mA)	(see table on page 16)
Max. glow lamp current parallel to the 230 V control buttons	5 mA

#### Coil Consumption – E290 Latching Relay

Product type	Control voltage	Coil consumption average pull-in current	Control voltage	Coil consumption average pull-in current
	V AC	A	V DC	A
<b>E290</b>	230	0.062	110*	0.057*
	115	0.070	60*	0.105*
	48	0.212	24	0.207
	24	0.434	12*	0.558*
	12	1.263	-	-
	8	2.048	-	-
<b>E291S*</b>	230	0.051	110	0.047
	24	0.378	12	0.355
	12	0.803	-	-
	8	1.088	-	-
<b>E294</b>	230	0.120	-	-
	24	0.684	-	-

1) Coil supply voltage: All E290 50Hz devices can be supplied with AC or DC control voltage.  
The ratio of 1 : 0.5 applies, i.e. a 230 VAC coil can also be used for 110 VDC. (See Ordering data.)

NO = normally-open contact; NC = normally-closed contact; CO = changeover contact

\* for 50 Hz devices only

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#### Switching components for E290

<b>E292-16-... Contact Module (attachable only to 16 A I<sub>n</sub> version)</b>	
Rated current I <sub>n</sub> per E292 contact	16 A
Rated voltage U <sub>n</sub>	250 VAC
Frequency	50/60 Hz
Max. no. attachable (additional main contacts)	1 unit (attachable on the right side of the main module)
Contact configurations	1CO; 2NO; 1NO+1NC
Max. DC current per contact with 24 VDC	8 A
Min. switching load (for 50 Hz devices only)	24 V; 10 mA
<b>E299-... Auxiliary Contacts</b>	
Max. no. attachable (signaling or control contacts)	1 unit (attachable on the right side of the main module)
Number of contacts	1 NO + 1 NC; 2 NO
Min. switching load	24 V, 10 mA
Max. current per contact with AC	5.0 A
Max. current per contact with 24 VDC	5.0 A

#### Control components for E290

<b>E294 Central On-Off Control Module (different control voltage potential)</b>	
Max. no. attachable	1 unit (attachable on the left side of the main module)
Rated current I <sub>n</sub> max.	1 A
Rated voltage U <sub>n</sub>	250 VAC
<b>E295-PS Permanent Signal Module</b>	
Max. no. attachable	1 unit (attachable on the left side of the main module)
Rated current I <sub>n</sub> max.	1 A
Rated voltage U <sub>n</sub>	250 VAC
<b>E295-GM Group Module</b>	
Use of group switching modules	1 unit per defined group
Rated current I <sub>n</sub> max.	1 A
Rated voltage U <sub>n</sub>	250 VAC
<b>E296-CP Compensator</b>	
Compensation when using illuminated buttons	Wiring parallel to the main module
Compensation	50 Hz 2.2 uF
	60 Hz 2.2 uF
Rated voltage U <sub>n</sub>	50 Hz 250 VAC
	60 Hz 310 VAC

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#### Latching Relay

This 18 mm wide DIN rail mounted device is designed for direct installation in main distribution or sub-distribution systems (mounted on 35 mm DIN mounting rails). The devices are activated by means of control pulses and guarantee energy-optimized lighting control. As a rule, installations with latching relays are used where the lighting control system can be operated from at least three points in different locations. Those latching relays are designed for a rated current of 16 A or 32 A.

Standard number of contacts:

1 NO contact, 2 NO contacts or 1 NO contact + 1 NC contact

The number of switching contacts can be increased by a maximum of two main contacts using a snap-on main module (E292-...-). As a result, up to four lighting sets can be switched by a single device.

A signaling and/or indicating facility can be created using the additional snap-on auxiliary contact module (E299-11).

The various standard AC/DC coil voltages complete the comprehensive and interesting product range. The additional devices can be snapped onto the latching relay on the left or right side.

Rated current = 16 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
1NO	0.32	18	8VAC	939558	E290-16-10/8	2TAZ312000R2061	0.114	10	
	0.32	18	12VAC	939565	E290-16-10/12	2TAZ312000R2051	0.114	10	
	0.32	18	24VAC/12VDC	939572	E290-16-10/24	2TAZ312000R2041	0.114	10	
	0.32	18	48VAC/24VDC	939589	E290-16-10/48	2TAZ312000R2031	0.114	10	
	0.32	18	115VAC/60VDC	939596	E290-16-10/115	2TAZ312000R2021	0.114	10	
	0.32	18	230VAC/110VDC	939602	E290-16-10/230	2TAZ312000R2011	0.114	10	
Rated current = 32 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
1NO	1.20	18	8VAC	939619	E290-32-10/8	2TAZ322000R2061	0.114	10	
	1.20	18	12VAC	939626	E290-32-10/12	2TAZ322000R2051	0.114	10	
	1.20	18	24VAC/12VDC	939633	E290-32-10/24	2TAZ322000R2041	0.114	10	
	1.20	18	48VAC/24VDC	939640	E290-32-10/48	2TAZ322000R2031	0.114	10	
	1.20	18	115VAC/60VDC	939657	E290-32-10/115	2TAZ322000R2021	0.114	10	
	1.20	18	230VAC/110VDC	939664	E290-32-10/230	2TAZ322000R2011	0.114	10	
Rated current = 16 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
2NO	0.64	18	8VAC	939671	E290-16-20/8	2TAZ312000R2062	0.122	10	
	0.64	18	12VAC	939688	E290-16-20/12	2TAZ312000R2052	0.122	10	
	0.64	18	24VAC/12VDC	939695	E290-16-20/24	2TAZ312000R2042	0.122	10	
	0.64	18	48VAC/24VDC	939701	E290-16-20/48	2TAZ312000R2032	0.122	10	
	0.64	18	115VAC/60VDC	939718	E290-16-20/115	2TAZ312000R2022	0.122	10	
	0.64	18	230VAC/110VDC	939725	E290-16-20/230	2TAZ312000R2012	0.122	10	

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Rated current = 32 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
2NO	2.40	18	8VAC	939732	E290-32-20/8	2TAZ322000R2062	0.122	10	
	2.40	18	12VAC	939749	E290-32-20/12	2TAZ322000R2052	0.122	10	
	2.40	18	24VAC/12VDC	939756	E290-32-20/24	2TAZ322000R2042	0.122	10	
	2.40	18	48VAC/24VDC	939763	E290-32-20/48	2TAZ322000R2032	0.122	10	
	2.40	18	115VAC/60VDC	939770	E290-32-20/115	2TAZ322000R2022	0.122	10	
	2.40	18	230VAC/110VDC	939787	E290-32-20/230	2TAZ322000R2012	0.122	10	
Rated current = 16 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
1NO+1NC	0.50	18	8VAC	939794	E290-16-11/8	2TAZ312000R2063	0.122	10	
	0.50	18	12VAC	939800	E290-16-11/12	2TAZ312000R2053	0.122	10	
	0.50	18	24VAC/12VDC	939817	E290-16-11/24	2TAZ312000R2043	0.122	10	
	0.50	18	48VAC/24VDC	939824	E290-16-11/48	2TAZ312000R2033	0.122	10	
	0.50	18	115VAC/60VDC	939831	E290-16-11/115	2TAZ312000R2023	0.122	10	
	0.50	18	230VAC/110VDC	939848	E290-16-11/230	2TAZ312000R2013	0.122	10	
Rated current = 32 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
1NO+1NC	1.20	18	8VAC	939855	E290-32-11/8	2TAZ322000R2063	0.122	10	
	1.20	18	12VAC	939862	E290-32-11/12	2TAZ322000R2053	0.122	10	
	1.20	18	24VAC/12VDC	939879	E290-32-11/24	2TAZ322000R2043	0.122	10	
	1.20	18	48VAC/24VDC	939886	E290-32-11/48	2TAZ322000R2033	0.122	10	
	1.20	18	115VAC/60VDC	939893	E290-32-11/115	2TAZ322000R2023	0.122	10	
	1.20	18	230VAC/110VDC	939909	E290-32-11/230	2TAZ322000R2013	0.122	10	

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### E290 Latching relays



E291S



E292



E294



E295



E299

#### Sequential Latching Relay

The sequential latching relay is an 18 mm wide device which has two NO contacts. The preset switching sequence for the main contacts enables the switching on and off, of different lighting sets to be „programmed“. The E291S has an easily visible switch position display on the front.

Rated current = 16 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
2NO	0.64	18	8VAC	939919	E291S-16-20/8	2TAZ313000R2062		0.110	10
	0.64	18	12VAC	939923	E291S-16-20/12	2TAZ313000R2052		0.110	10
	0.64	18	24VAC/12VDC	939930	E291S-16-20/24	2TAZ313000R2042		0.110	10
	0.64	18	230VAC/110VDC	939947	E291S-16-20/230	2TAZ313000R2012		0.110	10

#### Accessories for E290 Latching Relays

Accessories and additional devices for combinations with Latching Relays

##### Main Contact Module

Rated current = 16 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612270 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
2NO	0.64	9		939480	E292-16-20	2CCA704300R0001		0.045	10
1NO+1NC	0.32	9		939503	E292-16-11	2CCA704301R0001		0.045	10
1CO	0.32	9		939527	E292-16-001	2CCA704302R0001		0.045	10

##### Central On-Off Control Module (with different control voltages)

	18	24VAC	939411	E294/24	2TAZ312001R2043		0.110	5
	18	230VAC	939442	E294/230	2TAZ312001R2013		0.110	5

##### Permanent Signal Module

	18		939459	E295-PS	2TAZ312005R1003		0.041	10
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##### Group Module

	18		939466	E295-GM	2TAZ310002R1000		0.059	10
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##### Compensator

	18		939473	E296-CP	2TAZ310003R1000		0.055	10
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##### Auxiliary Contact for Latching and Installation relays

Rated current = 5 A									
Contact config.	Power loss [W]	Width [mm]	Coil control voltage [VAC/VDC]	Bbn 7612271 EAN	Order details		Price 1 piece	Weight kg.	Pack unit pc.
					Type code	Order code			
1NO+1NC	0.10	9	250VAC	939985	E299-11	2CCA704340R0001		0.045	10
2NO	0.10	9	250VAC	465346*	E299-20	2CCA704341R0001		0.045	10

\* with Bbn 7612271

##### Intermediate piece (for heating dissipation - bag contains 5 items)

	18			100989	ZLS725	2CCS500900R0181		0.100	1 bag
	9			104703	ZLS726	2CCS400900R0091		0.070	1 bag

## Command and signaling

### E290 60Hz Mechanical latching relay – Ordering data

#### Standard devices – E290 60 Hz Latching Relay

Cont. config.	Rated Voltage VAC	Power loss W	Width mm	Coil control voltage VAC/VDC	Order details		Bbn 7612271 EAN	Weight per unit kg	Pack. unit units
					Type code	Order code			
<b>Rated current = 16 A</b>									
1NO	250	0.32	18	230VAC	E290-16-10/230-60	2TAZ352000R2011	503901	0.111	10
1NO	250	0.32	18	115VAC	E290-16-10/115-60	2TAZ352000R2021	504328	0.111	10
1NO	250	0.32	18	48VAC	E290-16-10/48-60	2TAZ352000R2031	504359	0.111	10
1NO	250	0.32	18	24VAC	E290-16-10/24-60	2TAZ352000R2041	504380	0.111	10
1NO	250	0.32	18	24VDC	E290-16-10/24DC	2TAZ352000R2071	504472	0.111	10
1NO	250	0.32	18	12VAC	E290-16-10/12-60	2TAZ352000R2051	504410	0.111	10
1NO	250	0.32	18	8VAC	E290-16-10/8-60	2TAZ352000R2061	504441	0.111	10
2NO	250	0.64	18	230VAC	E290-16-20/230-60	2TAZ352000R2012	503918	0.122	10
2NO	250	0.64	18	115VAC	E290-16-20/115-60	2TAZ352000R2022	504335	0.122	10
2NO	250	0.64	18	48VAC	E290-16-20/48-60	2TAZ352000R2032	504366	0.122	10
2NO	250	0.64	18	24VAC	E290-16-20/24-60	2TAZ352000R2042	504397	0.122	10
2NO	250	0.64	18	24VDC	E290-16-20/24DC	2TAZ352000R2072	504489	0.122	10
2NO	250	0.64	18	12VAC	E290-16-20/12-60	2TAZ352000R2052	504427	0.122	10
2NO	250	0.64	18	8VAC	E290-16-20/8-60	2TAZ352000R2062	504458	0.122	10
1NO+1NC	250	0.50	18	230VAC	E290-16-11/230-60	2TAZ352000R2013	504311	0.121	10
1NO+1NC	250	0.50	18	115VAC	E290-16-11/115-60	2TAZ352000R2023	504342	0.121	10
1NO+1NC	250	0.50	18	48VAC	E290-16-11/48-60	2TAZ352000R2033	504373	0.121	10
1NO+1NC	250	0.50	18	24VAC	E290-16-11/24-60	2TAZ352000R2043	504403	0.121	10
1NO+1NC	250	0.50	18	24VDC	E290-16-11/24DC	2TAZ352000R2073	504496	0.121	10
1NO+1NC	250	0.50	18	12VAC	E290-16-11/12-60	2TAZ352000R2053	504434	0.121	10
1NO+1NC	250	0.50	18	8VAC	E290-16-11/8-60	2TAZ352000R2063	504465	0.121	10
<b>Rated current = 32 A</b>									
1NO	250	1.20	18	230VAC	E290-32-10/230-60	2TAZ362000R2011	504502	0.111	10
1NO	250	1.20	18	115VAC	E290-32-10/115-60	2TAZ362000R2021	504533	0.111	10
1NO	250	1.20	18	48VAC	E290-32-10/48-60	2TAZ362000R2031	504564	0.111	10
1NO	250	1.20	18	24VAC	E290-32-10/24-60	2TAZ362000R2041	504595	0.111	10
1NO	250	1.20	18	12VAC	E290-32-10/12-60	2TAZ362000R2051	504625	0.111	10
1NO	250	1.20	18	8VAC	E290-32-10/8-60	2TAZ362000R2061	504656	0.111	10
2NO	250	2.40	18	230VAC	E290-32-20/230-60	2TAZ362000R2012	504519	0.123	10
2NO	250	2.40	18	115VAC	E290-32-20/115-60	2TAZ362000R2022	504540	0.123	10
2NO	250	2.40	18	48VAC	E290-32-20/48-60	2TAZ362000R2032	504571	0.123	10
2NO	250	2.40	18	24VAC	E290-32-20/24-60	2TAZ362000R2042	504601	0.123	10
2NO	250	2.40	18	12VAC	E290-32-20/12-60	2TAZ362000R2052	504632	0.123	10
2NO	250	2.40	18	8VAC	E290-32-20/8-60	2TAZ362000R2062	504663	0.123	10
1NO+1NC	250	1.20	18	230VAC	E290-32-11/230-60	2TAZ362000R2013	504526	0.121	10
1NO+1NC	250	1.20	18	115VAC	E290-32-11/115-60	2TAZ362000R2023	504557	0.121	10
1NO+1NC	250	1.20	18	48VAC	E290-32-11/48-60	2TAZ362000R2033	504588	0.121	10
1NO+1NC	250	1.20	18	24VAC	E290-32-11/24-60	2TAZ362000R2043	504618	0.121	10
1NO+1NC	250	1.20	18	12VAC	E290-32-11/12-60	2TAZ362000R2053	504649	0.121	10
1NO+1NC	250	1.20	18	8VAC	E290-32-11/8-60	2TAZ362000R2063	504670	0.121	10

## Command and signaling

### E290 60Hz Mechanical latching relay – Ordering data

#### Accessories and additional devices for combinations with Latching relays

Cont. config.	Rated Voltage VAC	Power loss W	Width mm	Coil control voltage VAC/VDC	Order details		Bbn 7612270 EAN	Weight per unit kg	Pack. unit units
					Type code	Order code			
<b>Main Contact Module (Rated current = 16 A)</b>									
1NO+1NC	250	0.32	9		E292-16-11-60	2CCA704306R0001	503017	0.045	10
2NO	250	0.64	9		E292-16-20-60	2CCA704305R0001	503024	0.045	10
1CO	250	0.32	9		E292-16-001-60	2CCA704307R0001	503000	0.045	10
<b>Central ON-OFF Control Module (with different control voltages)</b>									
			18	230VAC	E294/230-60	2TAZ352001R2013	504687	0.110	5
			18	24VAC	E294/24-60	2TAZ352001R2043	504694	0.109	5
<b>Permanent Signal Module</b>									
			9		E295-PS	2TAZ312005R1003	939459	0.041	10
<b>Group Module</b>									
			18		E295-GM	2TAZ310002R1000	939466	0.059	10
<b>Compensator</b>									
			18		E296-CP	2TAZ310003R1000	939473	0.055	10
<b>Auxiliary Contact for Latching and Installation Relays (Rated current = 5 A)</b>									
1NO+1NC	250	0.10	9		E299-11-60	2CCA704342R0001	503031	0.045	10
2NO	250	0.10	9		E299-20-60	2CCA704343R0001	503048	0.045	10
<b>Intermediate piece (for heating dissipation – bag contains 5 items)</b>									
			18		ZLS725	2CCS500900R0181	100989	0.100	1 bag
			9		ZLS726	2CCS400900R0091	104703	0.070	1 bag

\* with Bbn 7612271

NO = normally-open contact; NC = normally-closed contact; CO = changeover contact