



■ Transportation Solutions

LÜTZE Rail Technology

Relays

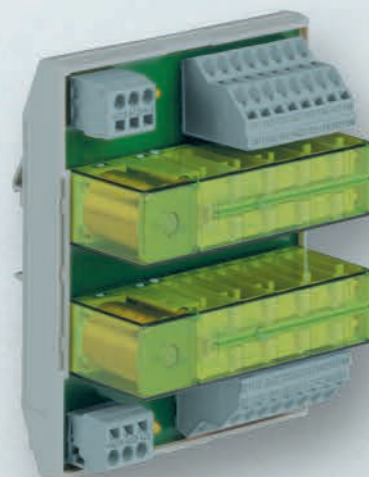
Relay Modules for each application

Relays



Relays - For all common switching applications

Relays
Positive-action contacts



Relays - Positive-action contacts
For safety-relevant applications

Relays
Gas filled



Relays - Gas filled - For high reliability in critical switching applications

Time Relays



Time Relays- With programmable time functions. Available with standard contacts, positive-action contacts or solid state outputs



Time Relays - With adjustable time functions. Available with standard contacts or with positive-action contacts

Semiconductor Relays



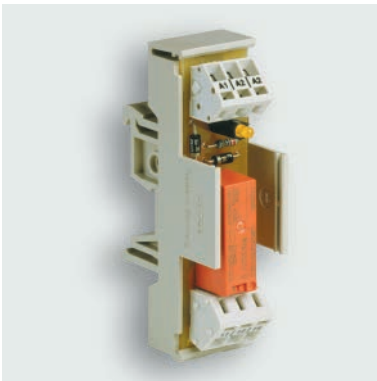
Semiconductor Relays - Wear-resistant contacts for switching of inductive loads

Comply with the standards

EN 50155, EN 50121-3-2, EN 61373 and EN 45545-2

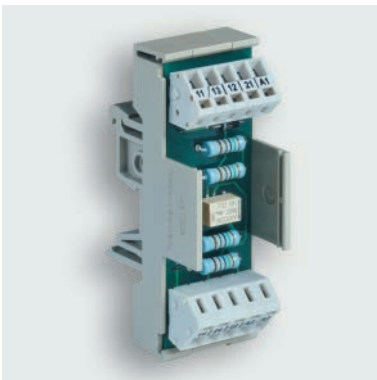
Relay Modules

With standard contacts gold-plated



Relay coupler with 1 CO contact

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716228	Varioprint	22.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 5 A



Relay coupler with 2 CO contacts for smallest loads

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 12 V	716276	Varioprint	30 mm	Spring terminal	AC/DC 100 μ V – 150 V	AC/DC 10 μ A – max. 2 A
DC 110 V	716232	Varioprint	30 mm	Spring terminal	AC/DC 100 μ V – 150 V	AC/DC 10 μ A – max. 2 A

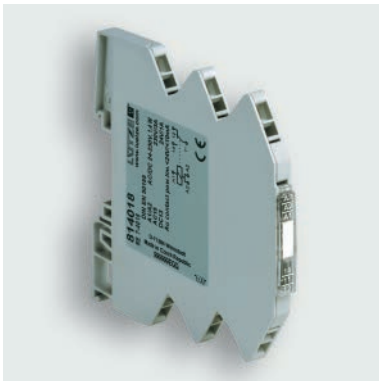
With standard contacts



Relay coupler with 1 CO contact

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716071	Varioprint	30 mm	Spring terminal	DC 16.8 – 31.2 V	DC 0.5 – 10 A

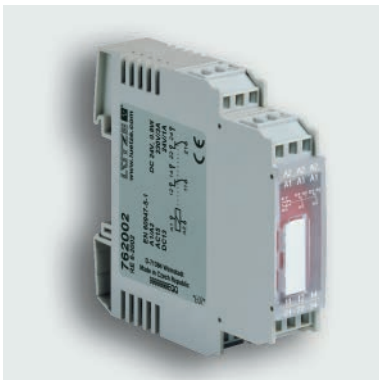
With standard contacts gold-plated



Contact type: 1 CO contact

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 12 V	762120	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 24 V	762332	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 36 V	762333	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 72 V	762335	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 110 V	762336	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
AC 230 V	762337	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
AC/DC 24 V – 230 V	814018	Microcompact	6.2 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A

Compatible jumper combs can be found on page 19.



Contact type: 2 CO contacts

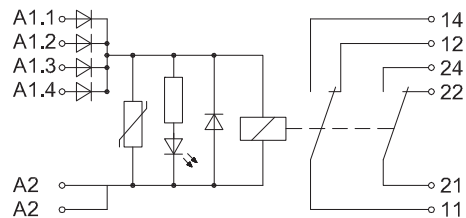
Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	762002	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 72 V	762099	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 110 V	762012	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A



Contact type: 2 CO contacts and 4 decoupling diodes

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	814005.0024	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 36 V	814005.0036	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 72 V	814005.0072	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A
DC 110 V	814005.0110	Microcompact	17.5 mm	Spring terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 6 A

Wiring diagram



Relay Modules

Positive-action contacts according to IEC 61810-3 type A



Contact type: 1 NC contact, 2 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	814012.0024	Microcompact	17.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 3 mA – 10 A
DC 36 V	814012.0036	Microcompact	17.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 3 mA – 10 A
DC 72 V	814012.0072	Microcompact	17.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 3 mA – 10 A
DC 110 V	814012.0110	Microcompact	17.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 3 mA – 10 A



Contact type: 2 NC contacts, 2 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	814001	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A



Contact type: 1 NC contact, 3 NO contacts

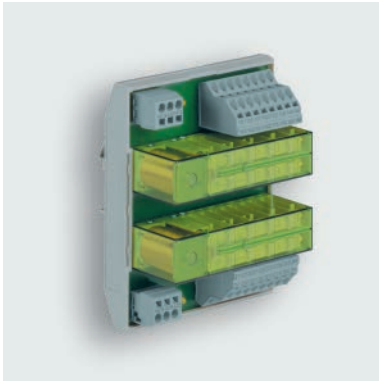
Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	814002	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A



Contact type: 2 NC contacts, 4 NO contacts

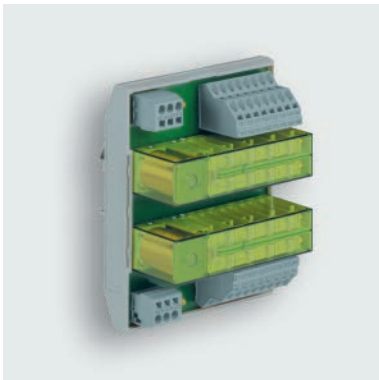
Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	762089	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A
DC 36 V	762095	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A
DC 48 V	814009.0048	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A
DC 72 V	814009.0072	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A
DC 110 V	762090	Microcompact	22.5 mm	Push-In terminal	AC/DC 5 – 250 V	AC/DC 5 mA – 6 A

Positive-action contacts according to IEC 61810-3 type A, 2-channel



Contact type: 2 NC contacts, 6 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716375	Varioprint	91.5 mm	Spring terminal	AC/DC 5 – 150 V	AC/DC 10 mA – 5 A



Contact type: 4 NC contacts, 4 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716306	Varioprint	91.5 mm	Spring terminal	AC/DC 5 – 150 V	AC/DC 10 mA – 5 A
DC 48 V	814026.0048	Varioprint	91.5 mm	Spring terminal	AC/DC 5 – 150 V	AC/DC 10 mA – 5 A
DC 110 V	716305	Varioprint	91.5 mm	Spring terminal	AC/DC 5 – 150 V	AC/DC 10 mA – 5 A

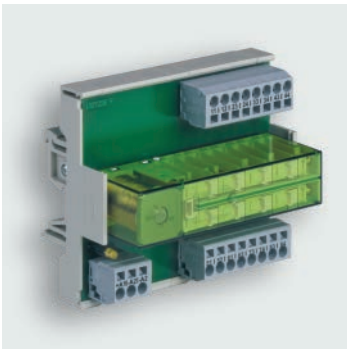


Contact type: 1 NC contact, 7 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 110 V	814007.0110	Varioprint	91.5 mm	Spring terminal	AC/DC 5 – 150 V	AC/DC 10 mA – 5 A

Relay Modules

Positive-action contacts according to IEC 61810-3 type A



Contact type: 3 NC contacts, 5 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716302	Varioprint	90 mm	Spring terminal	AC/DC 5 – 250 V	AC/DC 10 mA – 6 A
DC 110 V	716303	Varioprint	90 mm	Spring terminal	AC/DC 5 – 250 V	AC/DC 10 mA – 6 A



Contact type: 1 NC contact, 7 NO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716307	Varioprint	90 mm	Spring terminal	AC/DC 5 – 250 V	AC/DC 10 mA – 6 A

Gas filled / positive-action contacts, monostable



Contact type: 4 CO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	716331	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A
DC 36 V	716332	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A
DC 48 V	814016.0048	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A
DC 72 V	716333	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A
DC 110 V	716334	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A

Gas filled / positive-action contacts, bistable



Contact type: 4 CO contacts

Input voltage	Part-No.	Form	Width	Termination	Switching voltage	Switching current
DC 24 V	814003.0024	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A
DC 110 V	814003.0110	Varioprint	50 mm	Pluggable spring terminal	AC/DC 5 – 250 V	AC/DC 1 mA – 4 A

Programmable Time Relays

With standard contacts gold-plated



Contact type: 2 CO contacts

Input voltage	Part-No.	Width	Termination	Switching voltage	Switching current
DC 24 – 110 V	815000.00	22.5 mm	Push-In terminal	AC/DC 1 – 250 V	AC/DC 1 mA – 4 A

This Time Relay can be programmed with a free software. The different operation modes are shown on page 10 and 11. A short overview of the Lütze Time-Relay Configurator can be found on page 12. On request it can be delivered parameterized according to customer specifications ex works. Wide range power supply and wide range control voltage allow operation on all standard on-board voltages between DC 24 V and DC 110 V.

USB service cable for downloading the parameter set on the time relay can be found on page 19.

Positive-action contacts according to IEC 61810-3 type A



Contact type: 1 NC contact, 2 NO contacts

Input voltage	Part-No.	Width	Termination	Switching voltage	Switching current
DC 24 – 110 V	815008.00	22.5 mm	Push-In terminal	AC/DC 5 – 140 V	AC/DC 5 mA – 5 A

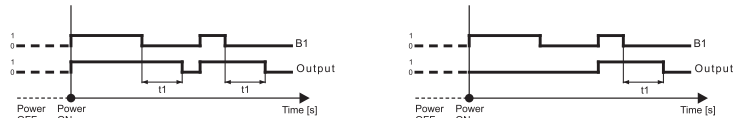
This Time Relay can be programmed with a free software. The different operation modes are shown on page 10 and 11. A short overview of the Lütze Time-Relay Configurator can be found on page 12. On request it can be delivered parameterized according to customer specifications ex works. Wide range power supply and wide range control voltage allow operation on all standard on-board voltages between DC 24 V and DC 110 V.

USB service cable for downloading the parameter set on the time relay can be found on page 19.

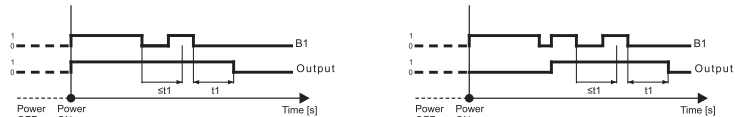
Programmable Time Relays

Operating modes **Cold Start Edge Detection Checked** **Cold Start Edge Detection Unchecked**

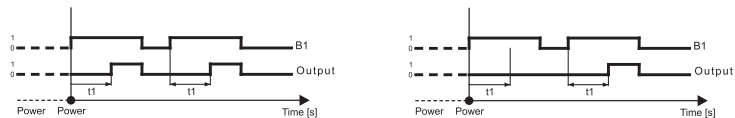
Off delay time



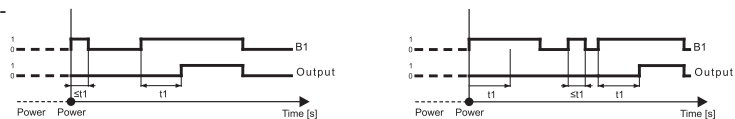
Off response delay
Example with retriggering



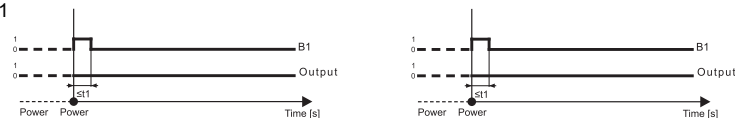
On delay time



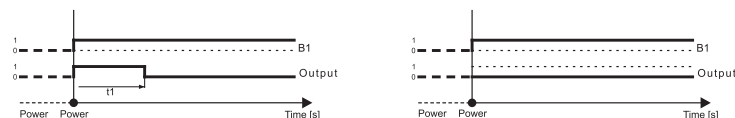
On response delay, example with retriggering



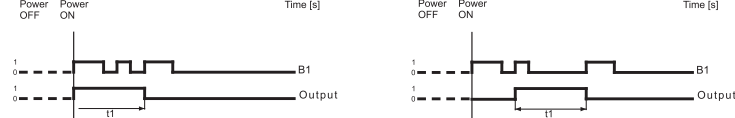
Response delay, example with "B1=H" < t1



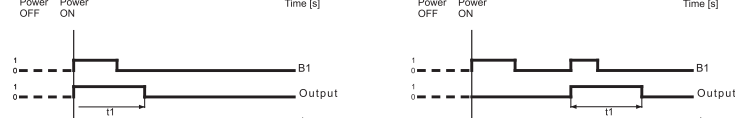
Fleeting contact



Fleeting make contact
Example with retriggering



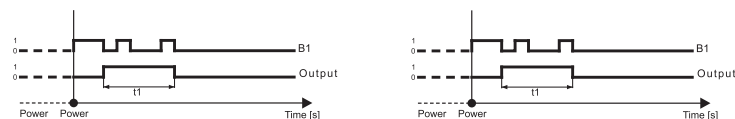
Fleeting make contact
Example with B1 < t1



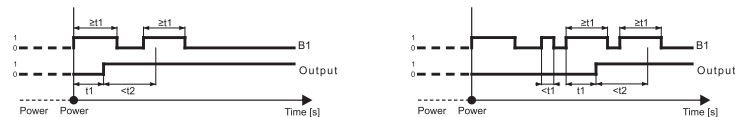
Fleeting break contact



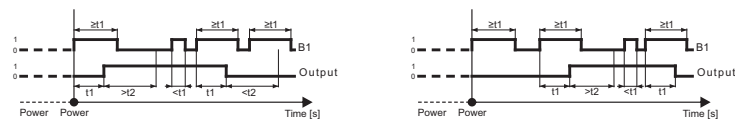
Fleeting break contact
Example with retriggering



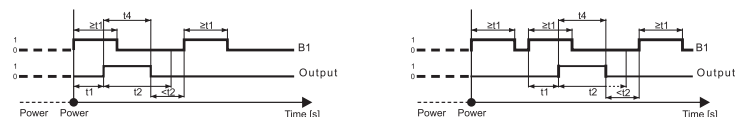
Impulse switch
e.g. „bounce free ON“,
t3 = 0, t4 = 0



Impulse switch
e.g. „bounce free OFF“,
t3 = 0, t4 = 0



Impulse switch
e.g. „switch on time- / release time delay
with one validated impulse“,
t3 ≠ 0, t4 ≠ 0, t4 ≤ t2



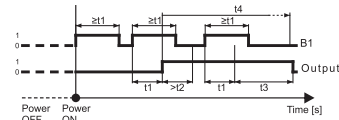
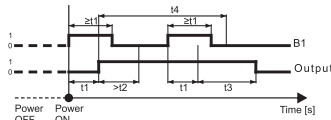
Programmable Time Relays

Operating modes

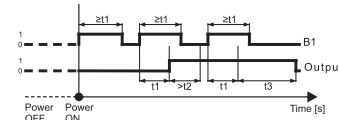
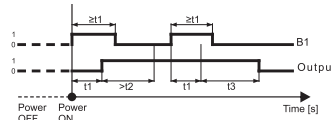
Cold Start Edge Detection Checked

Cold Start Edge Detection Unchecked

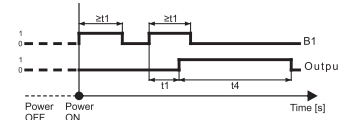
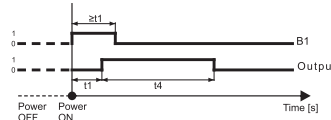
Impulse switch
e.g. „validated switch off impulse“,
 $t_3 \neq 0, t_4 \neq 0$



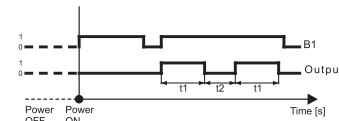
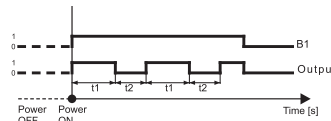
Impulse switch
e.g. „release time delay OFF with switch off delay“,
 $t_3 \neq 0, t_4 = 0$



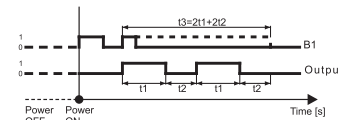
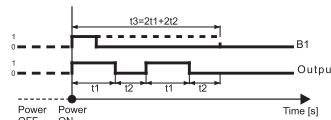
Impulse switch
e.g. „release time delay automatic OFF“,
 $t_3 = 0, t_4 \neq 0$



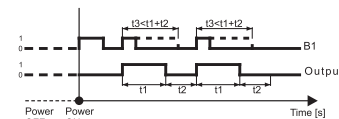
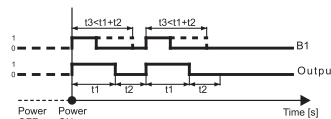
Clock generator starting with impulse
 $t_3 = 0$



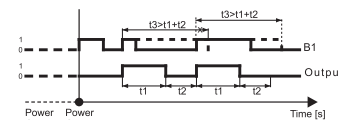
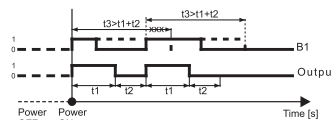
Clock generator starting with impulse
 $t_3 \neq 0$ and $t_3 = 2t_1 + 2t_2$



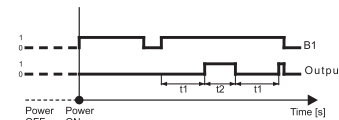
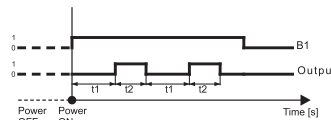
Clock generator starting with impulse
 $t_3 \neq 0$ and $t_3 < t_1 + t_2$



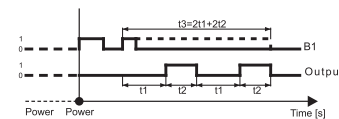
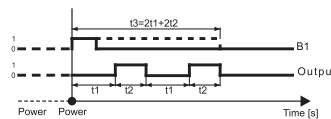
Clock generator starting with impulse
 $t_3 \neq 0$ and $t_3 > t_1 + t_2$



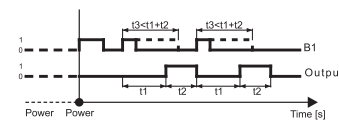
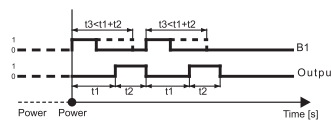
Clock generator starting with pause
 $t_3 = 0$



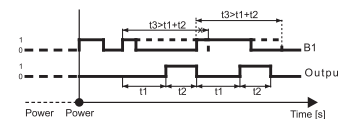
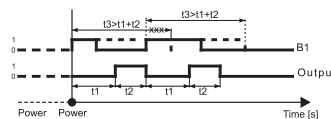
Clock generator starting with pause
 $t_3 \neq 0$ and $t_3 = 2t_1 + 2t_2$



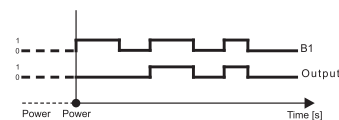
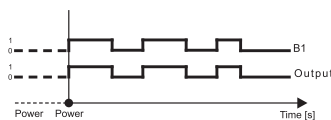
Clock generator starting with pause
 $t_3 \neq 0$ and $t_3 < t_1 + t_2$



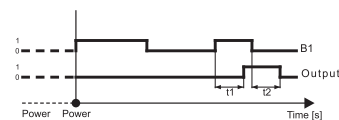
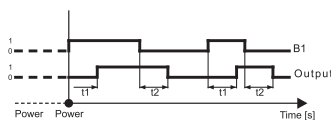
Clock generator starting with pause
 $t_3 \neq 0$ and $t_3 > t_1 + t_2$



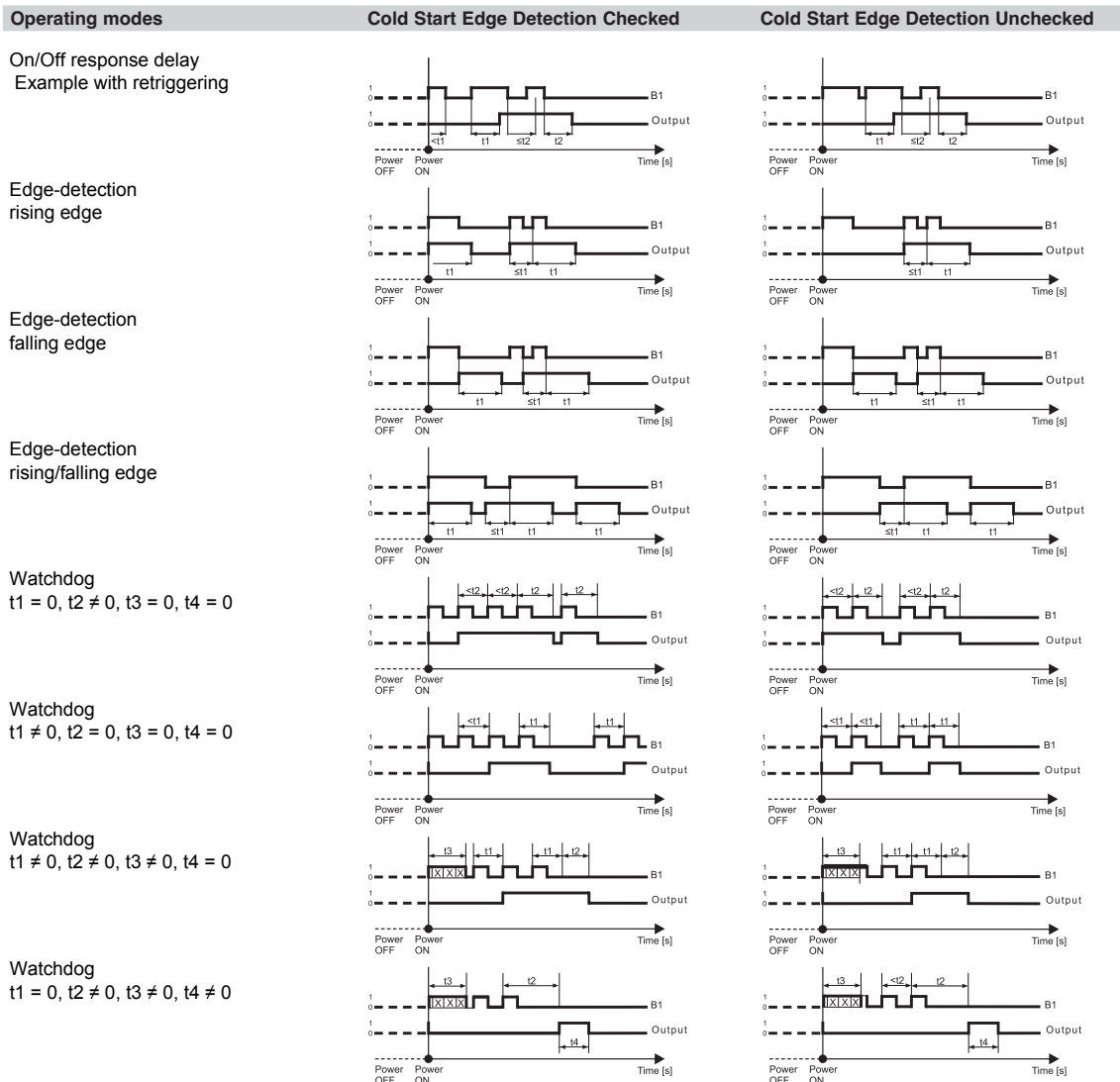
Instant contact



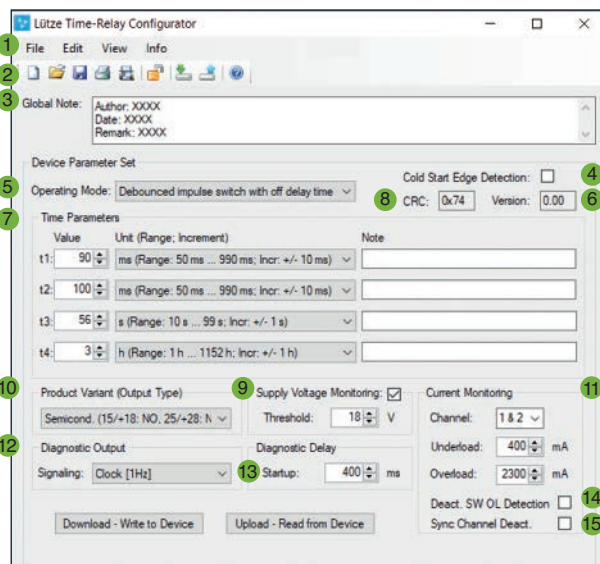
On/off delay time



Programmable Time Relays



LÜTZE Time Relay Configurator: fast, easy and comfortable



- 1 Menu bar
- 2 Tool bar
- 3 Memo field
- 4 Checking the control signal B1 when switching on or only afterwards
- 5 Operating modes
- 6 Configuration version
- 7 Time parameters - depending on the selected operating mode
- 8 CRC-Checksum
- 9 Voltage monitoring
- 10 Product variant (Output Type)
- 11 Current monitoring - only for semiconductors
- 12 Diagnostic signaling - output S and LED
- 13 Diagnostic start-up time
- 14 Deactivation of the software overload detection
- 15 Setting of the synchronous channel deactivation

Adjustable Time Relays

With standard contacts

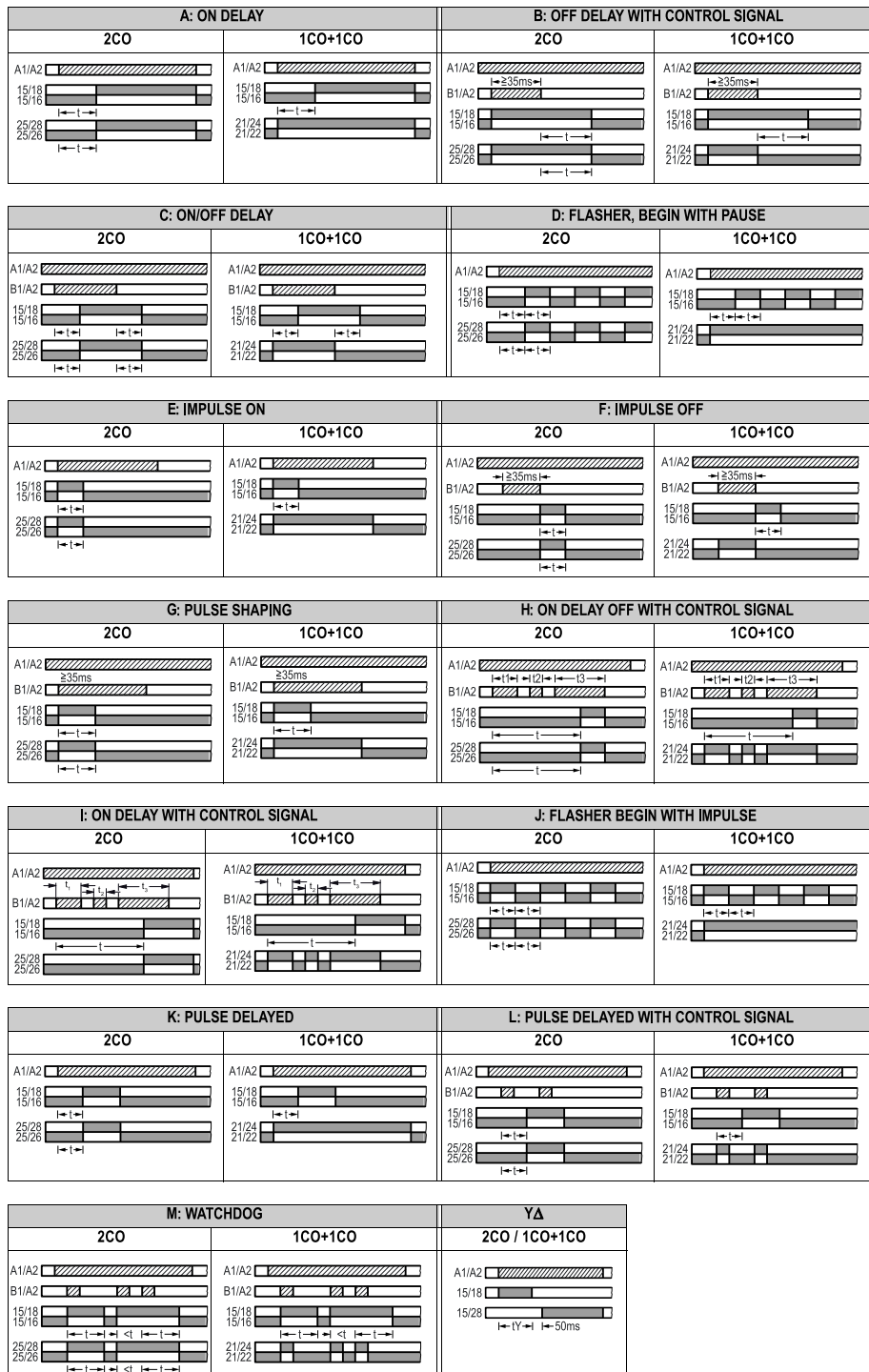


Contact type: 2 CO contacts

Input voltage	Part-No.	Width	Termination	Switching voltage	Switching current
AC/DC 12 – 240 V	815011.00	22.5 mm	Push-In terminal	AC/DC 17 – 250 V	AC/DC 5 mA – 3 A

27 different functions and 7 time ranges can be selected via rotary switches. A wide-range supply for AC/DC 12 - 240 V allows operation on all standard on-board voltages.

Operating modes



Adjustable Time Relays

Positive-action contacts according to IEC 61810-3 type B

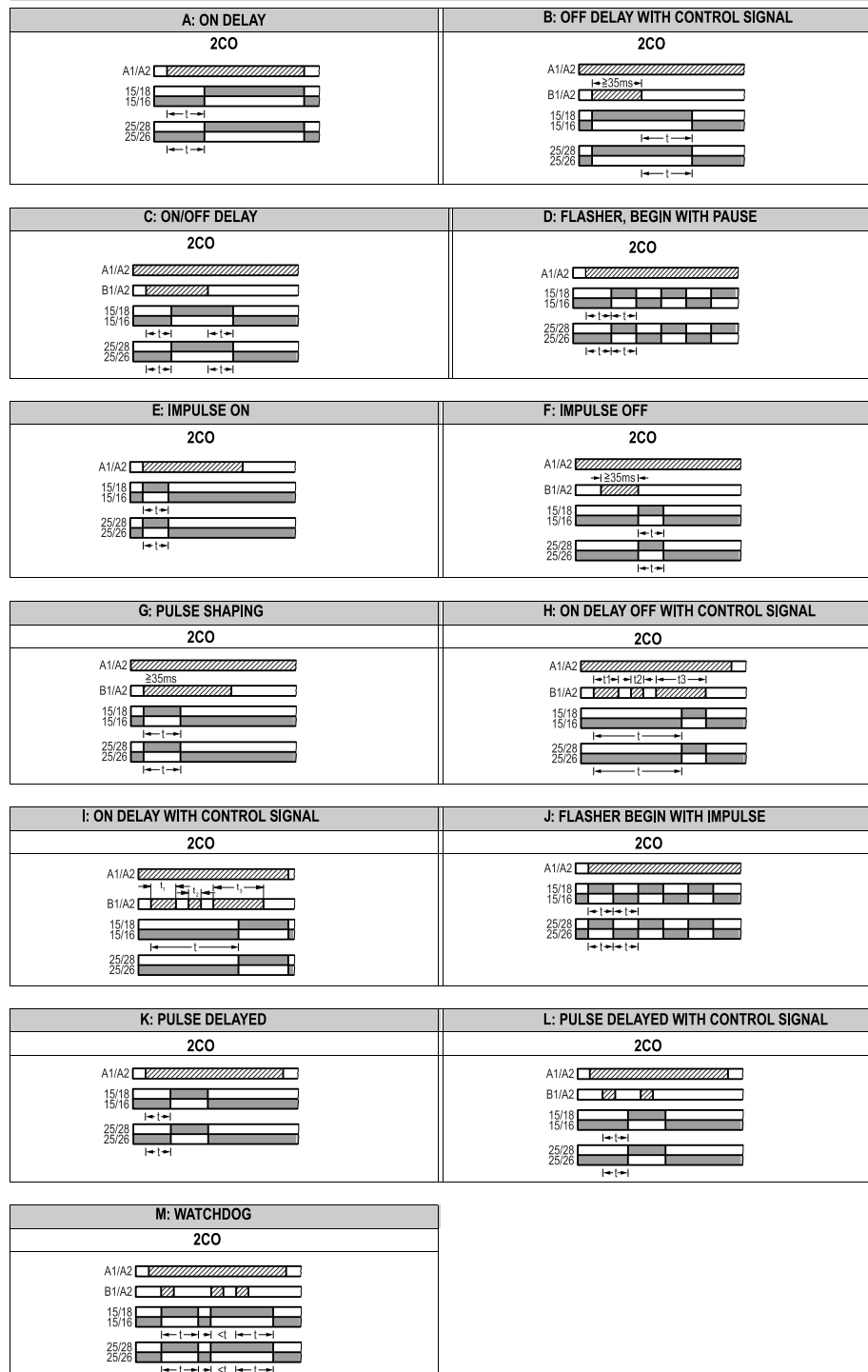


Contact type: 2 CO contacts

Input voltage	Part-No.	Width	Termination	Switching voltage	Switching current
DC 24 – 240 V	815012.00	22.5 mm	Push-In terminal	AC/DC 17 – 250 V	AC/DC 5 mA – 3 A

13 different functions can be selected via rotary switches. A wide-range supply for AC/DC 24 - 240 V allows operation on all standard on-board voltages.

Operating modes



Semiconductor Relays

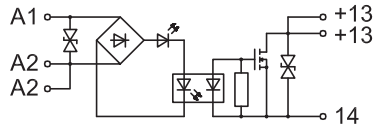
Form Microcompact



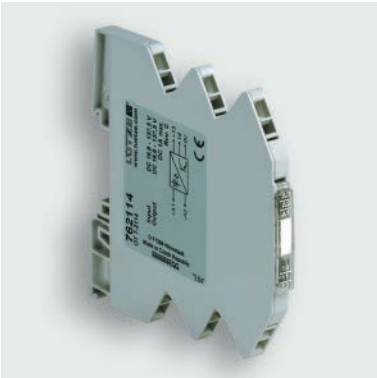
Switching current: DC 5 A / **Switching voltage:** < DC 50 V

Input voltage	Part-No.	Width	Termination	Switching capacity	Switching voltage	Switching current
DC 24 – 36 V	762113	6.2 mm	Spring terminal	max. 250 W	< DC 50 V	DC 5 A

Wiring diagram



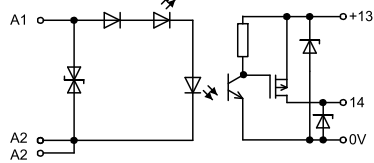
Compatible jumper combs can be found on page 19.



Switching current:
DC 1 A, short-circuit protected / **Switching voltage:** < DC 137.5 V

Input voltage	Part-No.	Width	Termination	Switching capacity	Switching voltage	Switching current
DC 24 – 110 V	762114	6.2 mm	Spring terminal	max. 140 W	< DC 137.5 V	max. DC 1 A

Wiring diagram



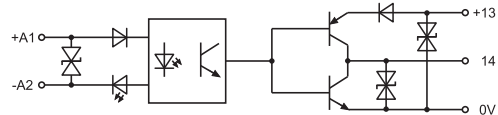
Compatible jumper combs can be found on page 19.



Switching current: 20 mA / **Switching frequency:** max. 20 kHz,
with push-pull output / **Switching voltage:** < DC 33.6 V

Input voltage	Part-No.	Width	Termination	Switching capacity	Switching voltage	Switching current
DC 15 V	816006.0015	6.2 mm	Spring terminal	max. 20 kHz	< DC 33.6 V	max. DC 20 mA
DC 24 V	816006.0024	6.2 mm	Spring terminal	max. 20 kHz	< DC 33.6 V	max. DC 20 mA

Wiring diagram



Compatible jumper combs can be found on page 19.

Semiconductor Relays

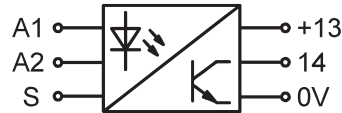
Form Microcompact



Switching current: DC 10 A, short-circuit protected /
diagnostic output / Switching voltage: < DC 33.6 V

Input voltage	Part-No.	Switching frequency	Termination	Switching voltage	Switching current
DC 24 – 36 V	816001.0024	< 25 Hz	Push-In terminal	< DC 33.6 V	max. DC 10 A
DC 72 – 110 V	816001.0110	< 25 Hz	Push-In terminal	< DC 33.6 V	max. DC 10 A

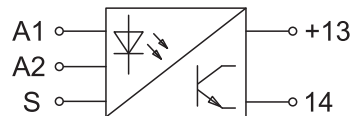
Wiring diagram



Switching current: DC 7 A, short-circuit protected /
diagnostic output / Switching voltage: < DC 154 V

Input voltage	Part-No.	Switching frequency	Termination	Switching voltage	Switching current
DC 24 – 110 V	816002.0024	< 100 Hz	Push-In terminal	< DC 154 V	max. DC 7 A
DC 72 – 110 V	816002.0110	< 100 Hz	Push-In terminal	< DC 154 V	max. DC 7 A

Wiring diagram



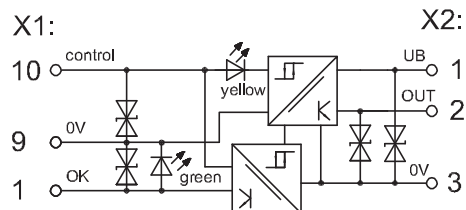
Form Varioprint



Switching current: DC 20 A, short-circuit protected /
diagnostic output / Switching voltage: < DC 45 V

Input voltage	Part-No.	Switching frequency	Switching voltage	Switching current
DC 24 – 36 V	816018	< 25 Hz	< DC 45 V	max. DC 20 A

Wiring diagram



Semiconductor Relays

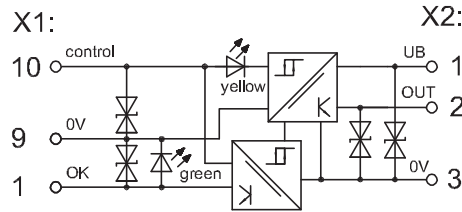
Form Varioprint



Switching current: DC 40 A, short-circuit protected /
diagnostic output / **Switching voltage:** < DC 45 V

Input voltage	Part-No.	Switching voltage	Switching current
DC 24 - 36 V	816010	< DC 45 V	max. DC 40 A

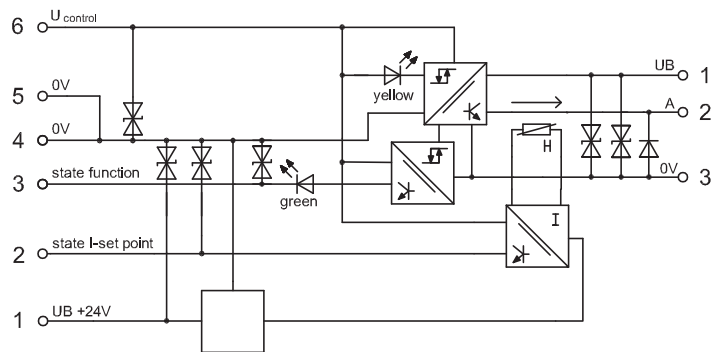
Wiring diagram



Switching current: DC 60 A, short-circuit protected /
diagnostic output / **Switching voltage:** < DC 45 V

Input voltage	Part-No.	Switching voltage	Switching current
DC 24 - 36 V	816012	< DC 45 V	max. DC 60 A

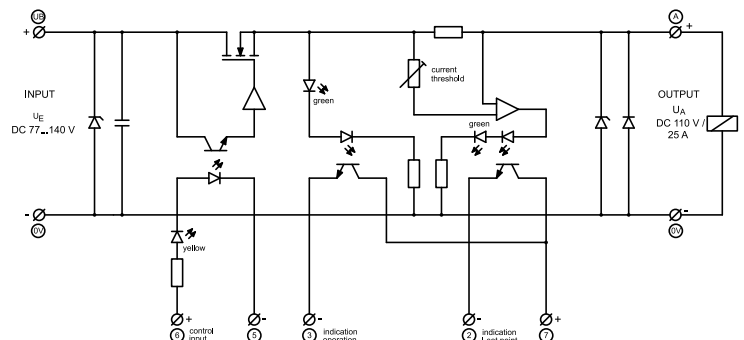
Wiring diagram



Switching current: DC 25 A, short-circuit protected /
diagnostic output / **Switching voltage:** < DC 137.5 V

Input voltage	Part-No.	Switching voltage	Switching current
DC 110 V	716264	DC 77 - 137.5 V	max. DC 25 A

Wiring diagram



Semiconductor Time Relays

Programmable Semiconductor Time Relays



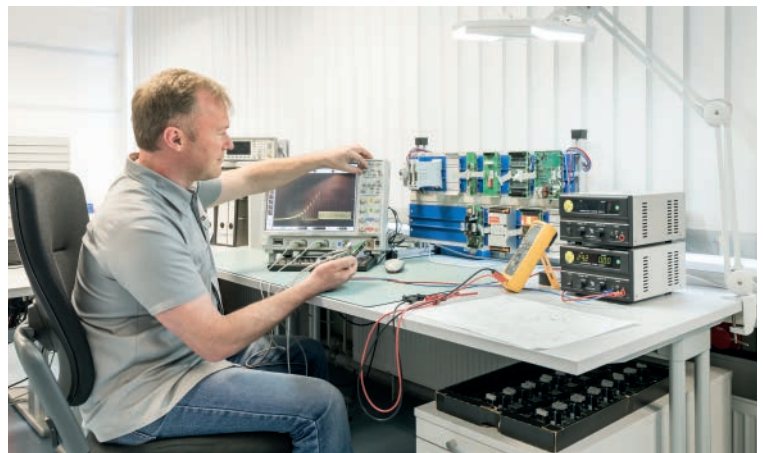
2 outputs

Input voltage	Part-No.	Width	Termination	Switching voltage	Switching current
DC 24 – 110 V	815006.00	22.5 mm	Push-In terminal	DC 16.8 – 33.6 V max.	DC 3 A per output
DC 24 – 110 V	815007.00	22.5 mm	Push-In terminal	DC 16.8 – 137.5 V max.	DC 1 A per output

This Semiconductor Time Relay can be programmed with a free software. The different operation modes are shown on page 10 and 11. A short overview of the Lütze Time-Relay Configurator can be found on page 12. On request it can be delivered parameterized according to customer specifications ex works. Wide range power supply and wide range control voltage allow operation on all standard on-board voltages between DC 24 V and DC 110 V.

USB service cable for downloading the parameter set on the semiconductor time relay can be found on page 19.

Railway Technology Competence

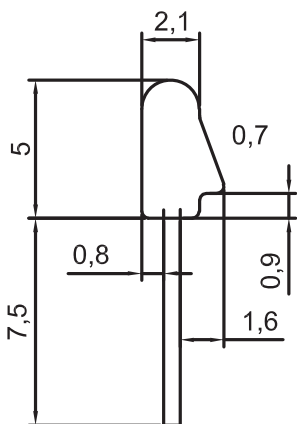
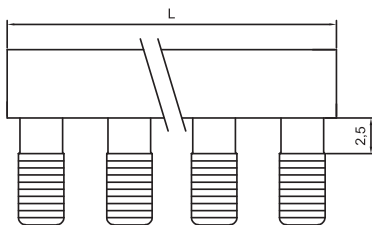


LÜTZE has been developing and manufacturing electrical components for rail vehicles for over 30 years. Our extensive product range of standard components carries out many automation tasks in the most diverse vehicle applications. Are you still looking for the appropriate product adapted to suit your specific application?

Get in touch with us. Our developers help you to find the best solution for your product, including the specification and design for the application on the vehicle, regardless of whether you need components for your control technology, interface components or optical and acoustic signals.

Accessories

Jumper combs



Description	Colour	Part-No.	Rated current	Length	Weight
2 pole	red	762802	DC 6 A	12.4 mm	1.0 g / piece
	white	762803	DC 6 A	12.4 mm	1.0 g / piece
	blue	762804	DC 6 A	12.4 mm	1.0 g / piece
3 pole	red	762805	DC 6 A	18.6 mm	1.5 g / piece
	white	762806	DC 6 A	18.6 mm	1.5 g / piece
	blue	762807	DC 6 A	18.6 mm	1.5 g / piece
4 pole	red	762812	DC 6 A	24.8 mm	2.0 g / piece
	white	762813	DC 6 A	24.8 mm	2.0 g / piece
	blue	762814	DC 6 A	24.8 mm	2.0 g / piece
8 pole	red	762822	DC 6 A	49.6 mm	3.0 g / piece
	white	762823	DC 6 A	49.6 mm	3.0 g / piece
	blue	762824	DC 6 A	49.6 mm	3.0 g / piece
16 pole	red	762832	DC 6 A	99.2 mm	4.0 g / piece
	white	762833	DC 6 A	99.2 mm	4.0 g / piece
	blue	762834	DC 6 A	99.2 mm	4.0 g / piece

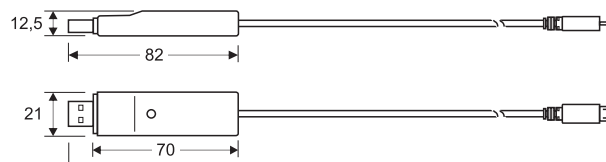
General Information	2 pole	3 pole	4 pole	8 pole	16 pole
Contact material	tin-plated copper				
Contact design	Flat contact 0,5 mm Ribbing on both sides				
Pin spacing	6.2 mm				
Material of housing	Vectra C130				
Colour	red / white / blue				
Flammability according to UL 94	V0				
Mounting	pluggable				
Storage temperature range	- 40 °C ... + 80 °C				
Operation temperature range	- 40 °C ... + 80 °C				

USB service cable



Input voltage	Part-No.	Weight	Operation temperature range
USB A - Micro USB	815900	0.035 kg / piece	0 °C ... 40 °C

The USB service cable can be used for the parameterization of Time Relays. For this case there is the driver software "LCON ZB USB Driver" available. The cable includes an galvanic isolated RS232 to USB interface.



Germany

Lütze Transportation GmbH
Postfach 12 24 (PLZ 71366)
Bruckwiesenstraße 17-19
D-71384 Weinstadt
Tel.: +49 71 51 6053-545
Fax: +49 71 51 6053-6545
sales.transportation@luetze.de

USA

Lutze Inc.
Tel.: +1 704 504-0222
Fax: +1 704 504-0223

United Kingdom

Lutze Ltd.
Tel.: +44 1827 31333-0
Fax: +44 1827 31333-2

Spain

Lutze S.L.
Tel.: +34 93 2857480
Fax: +34 93 2857481

China

Luetze Trading (Shanghai) Co. Ltd.
Tel.: +86 21 32580670
Fax: +86 21 32580671

www.luetze-transportation.com

