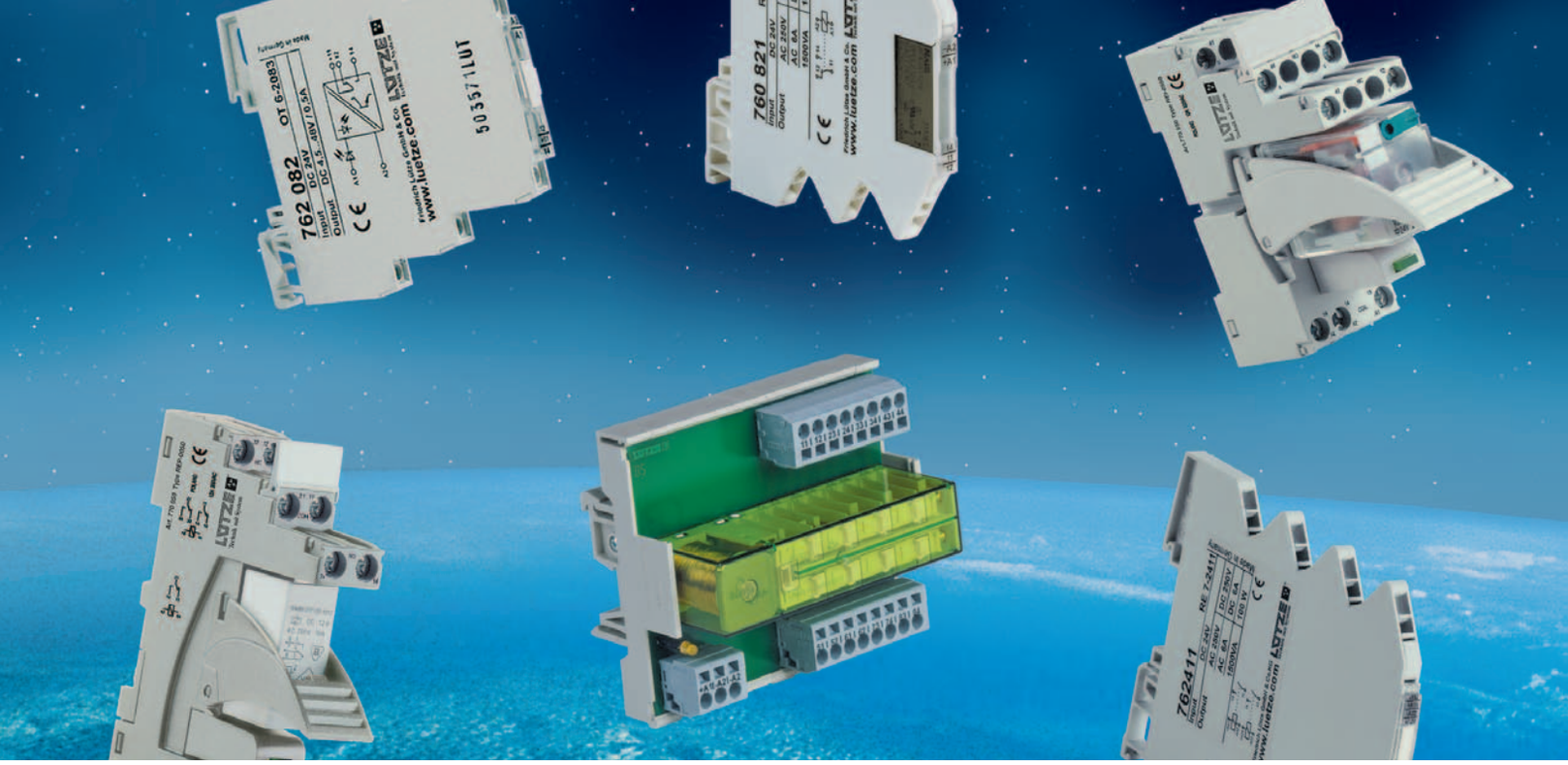


Switching Technology

Relays

Solid state relays

High and low current devices

Plug-in relay modules

LUTZE

Systematic Technology

Reaching new heights in automation

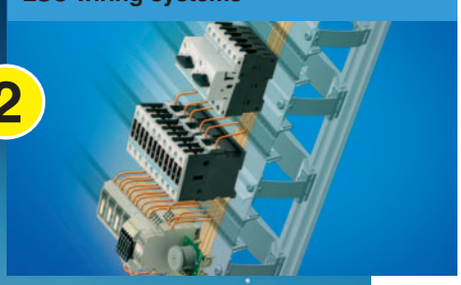
Welcome to Lutze

Machine and system installation procedure

1

Control cabinet LSC wiring systems

2



Suppression technology, module and interface technology, power supplies

3

Railway engineering and automation

4

We have been developing and manufacturing electronic and electrical engineering solutions for controls and installations for more than 45 years.

Our basic concept as system suppliers, providing a comprehensive and well-matched product range with which we can generate innovative and customized solutions for our customers, has stood the test of time.

The close relationship between product development and customer requirements allows Lutze continuously to improve and develop our products for the various markets.

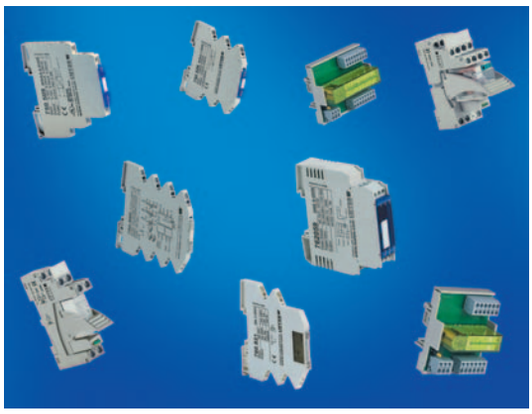
Lutze systems comply with the highest industrial standards; Lutze solutions mean improvement and innovation.

Our four product groups include components and concepts suitable for almost any control application. For more information on our products, please visit www.luetze.com.

LUTZE®

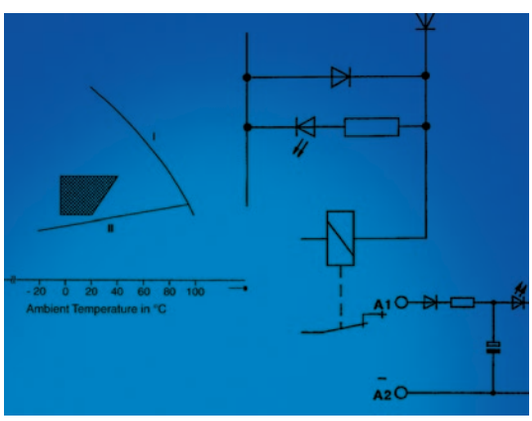
Systematic Technology

Interface technology • Contents



Relay module

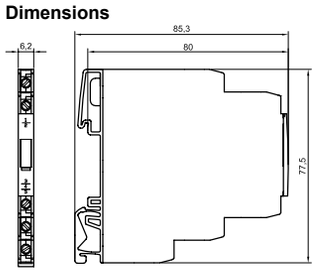
Solid state relay



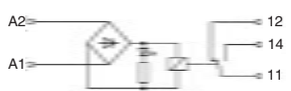
Basic principles

AC/DC-Relay-Interface,1 Relay with 1 CO contact
AC/DC 250 V, 6 A, 1500 VA
Spring terminal, contact material: $AgSnO_2$

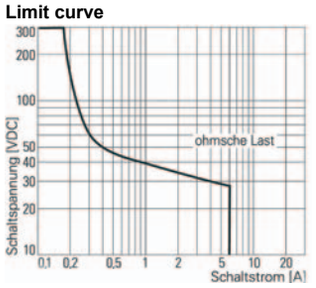
Dimensions



PIN assignment



Limit curve



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 12 V	760020	RE 6-0020 DC 12 V	4
	AC/DC 24 V	760022	RE 6-0022 AC/DC 24 V	4
	AC/DC 110 V	760026	RE 6-0026 AC/DC 110 V	4
	AC/DC 230 V	760027	RE 6-0027 AC/DC 230 V	4
Spring terminal				
Rated voltage	AC/DC 24 V	761022	RE 6-1022 AC/DC 24 V	4
	AC/DC 110 V	761026	RE 6-1026 AC/DC 110 V	4
	AC/DC 230 V	761027	RE 6-1027 AC/DC 230 V	4

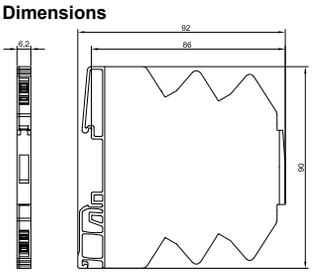
Input	**DC 12 V**	**AC/DC 24 V**	**AC/DC 110 V**	**AC/DC 230 V**
Input voltage range	9.6 – 15.0 V	19.2 – 30.0 V	77.0 – 137.5 V	184.0 – 253.0 V
Rated current	16.0 mA	22.0 mA	7.0 mA	3.5 mA
Interrupting voltage	<1.5 V	<2.4 V	11 V	<23 V
Protection device	Bridge rectifier			
Rated insulation voltage (EN 50178)	50 V		150 V	300 V
Max. length of connecting lead	–			
Status indication	LED yellow			
Rated frequency	–	50–60 Hz		
Output				
Contact type	1 change over contact			
Min. switching voltage	AC/DC 17 V			
Max. switching voltage	AC/DC 250 V			
Min. switching current	AC/DC 5 mA			
Max. switching current	AC/DC 6 A			
Switching capacity AC 15	3 A			
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA			
Max. switching capacity	1500 VA			
Contact material	$AgSnO_2$			
Mechanical service life	> 5 x 10^7 operations			
Switch-on delay	5 ms			10 ms
Switch-off delay	5 ms	10 ms		15 ms
Clearance/creep. dist. (contol/load side)	>5.5 mm			
Rated insulation voltage (EN 50178)	300 V			
Inrush current	16 A, 4 ms			
General				
Housing material	PPE			
IP rating	IP 20			
Field installation	rail TS 35 (EN 50022)			
Insulation voltage input/output	4 kVeff			
Safe isolation	yes			
Operation temperature range	-25 °C – 60 °C			
Storage temperature range	-40 °C – 80 °C			
Dimensions (w × h × d)	6.2 × 80.0 × 84.0 mm			
Weight (kg/piece)	0.025			
Approvals	cULus			
Termination	Screw-/spring terminal 0.25–2.5 mm^2			

Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB 0411	1

Comments
For operation with rated voltage and 100% ED over 24h/day, a distance of = 10 mm must be complied with between the modules or to the neighboring switching components.

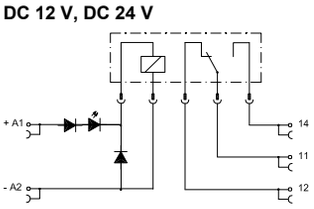
AC/DC-Relay-Interface,1 Relay with 1 CO contact
AC/DC 250 V, 6 A, 1500 VA
Screw-/spring terminal, contact material: $AgSnO_2$

Dimensions

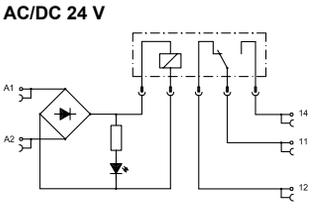


PIN assignment

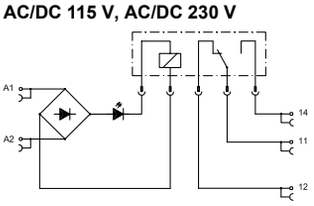
DC 12 V, DC 24 V



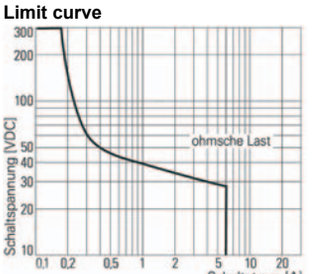
AC/DC 24 V



AC/DC 115 V, AC/DC 230 V



Limit curve



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 12 V	762321	RE 7-2321 DC 12 V	5
	DC 24 V	762312	RE 7-2312 DC 24 V	5
	AC/DC 24 V	762313	RE 7-2313 AC/DC 24 V	5
	AC/DC 115 V	762316	RE 7-2316 AC/DC 115 V	5
	AC/DC 230 V	762317	RE 7-2317 AC/DC 230 V	5
Spring terminal				
Rated voltage	DC 12 V	762320	RE 7-2320 DC 12 V	5
	DC 24 V	762302	RE 7-2302 DC 24 V	5
	AC/DC 24 V	762303	RE 7-2303 AC/DC 24 V	5
	AC/DC 115 V	762306	RE 7-2306 AC/DC 115 V	5
	AC/DC 230 V	762307	RE 7-2307 AC/DC 230 V	5

Input	**DC 12 V**	**DC 24 V**	**AC/DC 24 V**	**AC/DC 115 V**	**AC/DC 230 V**
Input voltage range	10.2 – 15.0 V	20.4 – 30.0 V	16.8 – 30.0 V	92.0 – 126.5 V	184.0 – 253.0 V
Rated current	17.0 mA	6.0 mA	20.0 mA	4.0 mA	3.5 mA
Interrupting voltage	<2 V	<2.4 V		<11 V	<23 V
Protection device	Reverse- / overload diode			Bridge rectifier	
Rated insulation voltage (EN 50178)	50 V			150 V	250 V
Max. length of connecting lead	2000 m		DC: 500 m AC: 70 m	DC: 500 m AC: 40 m	
Status indication	LED yellow				
Rated frequency	–		50–60 Hz		
Output	**–**				
Contact type	1 change over contact				
Min. switching voltage	AC/DC 17 V				
Max. switching voltage	AC/DC 250 V				
Min. switching current	AC/DC 5 mA				
Max. switching current	AC/DC 6 A				
Switching capacity AC 15	3 A				
Switching capacity DC 13	bei 24 V: 1A; bei 115 V: 200 mA; bei 230 V: 100 mA				
Max. switching capacity	1500 VA				
Contact material	$AgSnO_2$				
Mechanical service life	> 5 x 10^6 operations				
Switch-on delay	5 ms			8 ms	
Switch-off delay	4 ms			13 ms	
Clearance/creep. dist. (contol/load side)	>5.5 mm				
Rated insulation voltage (EN 50178)	300 V				
General					
Housing material	PPE				
IP rating	IP 20				
Field installation	rail TS 35 (EN 50022)				
Insulation voltage input/output	4 kVeff				
Safe isolation	yes				
Operation temperature range	-25 °C – 60 °C				
Storage temperature range	-40 °C – 80 °C				
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm				
Weight (kg/piece)	0.035				
Approvals	cULus in preparation				
Termination	Screw-/spring terminal 0.5–1.5 mm^2				

Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	10
Jumper comb 6A	white	762803	762806	762813	762823	762833	10
Jumper comb 6A	blue	762804	762807	762814	762824	762834	10

Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Tag holder 4×11 mm	white	681313	BZT 0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB - A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB 0411	1

Comments
For operation with rated voltage and 100% ED over 24h/day, a distance of = 10 mm must be complied with between the modules or to the neighboring switching components.

DC-Relay-Interface,1 Relay, 1 CO contact
AC/DC 250 V, 6 A, 1500 VA
Spring terminal, contact material: $AgSnO_2$ + 5 µm HV

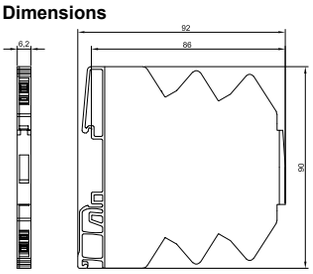
Description		Part-No.	Type	PU
Spring terminal				
Rated voltage	DC 24 V	762332	RE 7-2332 DC 24 V	5
	DC 36 V	762333	RE 7-2333 DC 36 V	5
	DC 72 V	762335	RE 7-2335 DC 72 V	5
	DC 110 V	762336	RE 7-2336 DC 110 V	5

Input	**DC 24 V**	**DC 36 V**	**DC 72 V**	**DC 110 V**
Input voltage range	16.8 – 30.0 V	25.2 – 45.0 V	50.4 – 90.0 V	77.0 – 137.5 V
Rated current	20.0 mA	12.0 mA	3.5 mA	4.0 mA
Interrupting voltage	<2.4 V	<3.6 V	<7.2 V	<11 V
Protection device	Bridge rectifier			
Rated insulation voltage (EN 50178)	50 V		100 V	160 V
Max. length of connecting lead	–			
Status indication	LED yellow			
Rated frequency	–			
Output	**–**			
Contact type	1 change over contact			
Min. switching voltage	AC/DC 1 V			
Max. switching voltage	AC/DC 250 V			
Min. switching current	AC/DC 1 mA			
Max. switching current	AC/DC 6 A			
Switching capacity AC 15	3 A			
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA			
Max. switching capacity	1500 VA			
Contact material	$AgSnO_2$+5 µm HV			
Mechanical service life	> 20 x 10^6 operations			
Switch-on delay	ca. 5 ms			
Switch-off delay	ca. 5 ms			
Clearance/creep. dist. (contol/load side)	>5.5 mm			
Rated insulation voltage (EN 50178)	320 V			
General				
Housing material	PPE			
IP rating	IP 20			
Field installation	rail TS 35 (EN 50022)			
Insulation voltage input/output	4 kVeff			
Safe isolation	yes			
Operation temperature range	-25 °C – 70 °C			
Storage temperature range	-40 °C – 80 °C			
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm			
Weight (kg/piece)	0.035			
Approvals	cULus in preparation			
Termination	Spring terminal 0.5–1.5 mm^2			

Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	10
Jumper comb 6A	white	762803	762806	762813	762823	762833	10
Jumper comb 6A	blue	762804	762807	762814	762824	762834	10

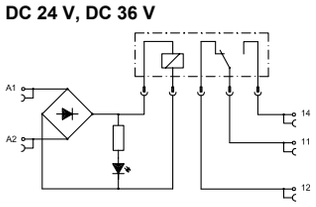
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Tag holder 4×11 mm	white	681313	BZT 0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB - A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB 0411	1

Dimensions

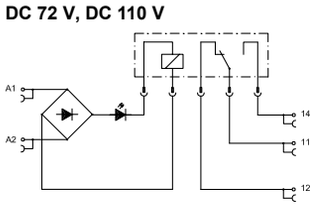


PIN assignment

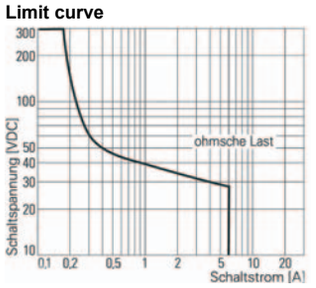
DC 24 V, DC 36 V



DC 72 V, DC 110 V



Limit curve

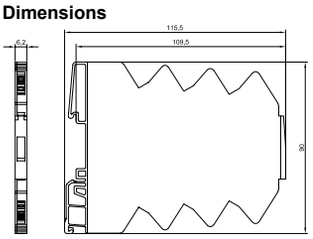


Comments

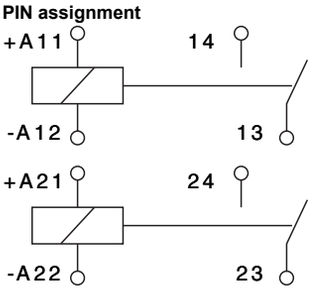
Hard gold-plated contacts: So that the gold layer is not damaged, the specified values are not permitted to be exceeded. At higher switching capacity, the gold layer vaporizes. The deposition in the housing can lead to sparkovers between the coil and contact For operation with rated voltage and 100% ED over 24h/day, a distance of = 10 mm must be complied with between the modules or to the neighboring switching components.

DC Relais-Interface, 2 Relay with 1 CO contact
AC/DC 250 V, 6 A, 1500 VA
Spring terminal, contact material: $AgSnO_2$

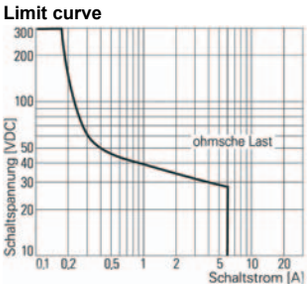
Dimensions



PIN assignment



Limit curve



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	762401	RE 7-2401 DC 24 V	3
Spring terminal				
Rated voltage	DC 24 V	762411	RE 7-2411 DC 24 V	3

Input	**DC 24 V**
Input voltage range	20.4 – 30.0 V
Rated current	6.0 mA
Interrupting voltage	<2.4 V
Protection device	Reverse- / overload diode
Rated insulation voltage (EN 50178)	50 V
Max. length of connecting lead	2000 m
Status indication	LED yellow
Rated frequency	–
Output	**each relay**
Contact type	N/O contact
Min. switching voltage	AC/DC 17 V
Max. switching voltage	AC/DC 250 V
Min. switching current	AC/DC 5 mA
Max. switching current	AC/DC 6 A
Switching capacity AC 15	3 A
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA
Max. switching capacity	1500 VA
Contact material	$AgSnO_2$
Mechanical service life	>5 x 10^6 operations
Switch-on delay	5 ms
Switch-off delay	4 ms
Clearance/creep. dist. (contol/load side)	>5.5 mm
Rated insulation voltage (EN 50178)	300 V
General	
Housing material	PA
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm
Weight (kg/piece)	0.055
Approvals	cULus in preparation
Termination	Screw-/spring terminal 0.5–1.5 mm^2

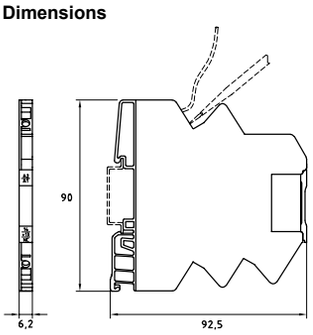
Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	10
Jumper comb 6A	white	762803	762806	762813	762823	762833	10
Jumper comb 6A	blue	762804	762807	762814	762824	762834	10

Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Tag holder 4×11 mm	white	681313	BZT 0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB - A4	1
Labels for laser printer 4.23 x 11mm (Sheet with 1056 labels)		681034	LEB 0411	1

Comments
For operation with rated voltage and 100% ED over 24h/day, a distance of = 10 mm must be complied with between the modules or to the neighboring switching components.

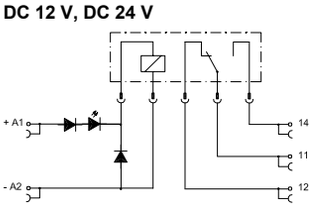
AC/DC-Relay-Interface, 1, Relay with 1 CO contact, pluggable
AC/DC 250 V, 6 A, 1500 VA
Spring terminal, contact material: $AgSnO_2$

Dimensions

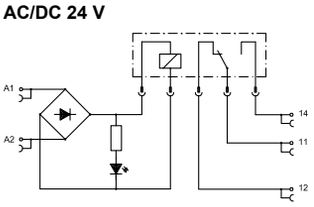


PIN assignment

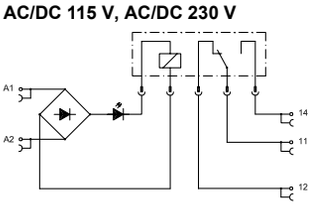
DC 12 V, DC 24 V



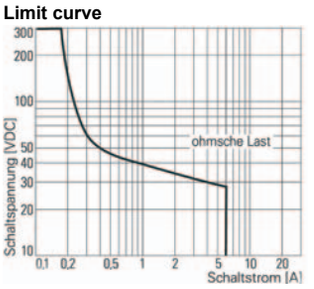
AC/DC 24 V



AC/DC 115 V, AC/DC 230 V



Limit curve



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 12 V	760828	RE 7-0828 DC 12V	5
	DC 24 V	760821	RE 7-0821 DC 24 V	5
	AC/DC 24 V	760822	RE 7-0822 AC/DC 24 V	5
	AC/DC 115 V	760826	RE 7-0826 AC/DC 115 V	5
	AC/DC 230 V	760827	RE 7-0827 AC/DC 230 V	5
Spring terminal				
Rated voltage	DC 12 V	761828	RE 7-1828 DC 12V	5
	DC 24 V	761821	RE 7-1821 DC 24 V	5
	AC/DC 24 V	761822	RE 7-1822 AC/DC 24 V	5
	AC/DC 115 V	761826	RE 7-1826 AC/DC 115 V	5
	AC/DC 230 V	761827	RE 7-1827 AC/DC 230 V	5

Input	**DC 12 V**	**DC 24 V**	**AC/DC 24 V**	**AC/DC 115 V**	**AC/DC 230 V**
Input voltage range	10.2 – 15.0 V	20.4 – 30.0 V	16.8 – 30.0 V	92.0 – 126.5 V	184.0 – 253.0 V
Rated current	15.0 mA	14.0 mA	21.0 mA	5.0 mA	
Interrupting voltage	< 2 V	< 2.4 V		< 11 V	< 23 V
Protection device	Bridge rectifier	Reverse diode		Bridge rectifier	
Rated insulation voltage (EN 50178)	50 V			150 V	250 V
Max. length of connecting lead	2000 m		DC: 2000 m AC: 100 m	DC: 500 m AC: 70 m	DC: 500 m AC: 40 m
Status indication	LED yellow				
Rated frequency	–			50–60 Hz	
Output	**–**				
Contact type	1 change over contact				
Min. switching voltage	AC/DC 17 V				
Max. switching voltage	AC/DC 250 V				
Min. switching current	AC/DC 5 mA				
Max. switching current	AC/DC 6 A				
Switching capacity AC 15	3 A				
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA				
Max. switching capacity	1500 VA				
Contact material	$AgSn0_2$				
Mechanical service life	>5 x 10^6 operations				
Switch-on delay	5 ms		7 ms	8 ms	
Switch-off delay	4 ms		7 ms	13 ms	
Clearance/creep. dist. (contol/load side)	>5.5 mm				
Rated insulation voltage (EN 50178)	300 V				
General					
Housing material	PPE				
IP rating	IP 20				
Field installation	rail TS 35 (EN 50022)				
Insulation voltage input/output	4 kVeff				
Safe isolation	yes				
Operation temperature range	-25 °C – 60 °C				
Storage temperature range	-40 °C – 80 °C				
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm				
Weight (kg/piece)	0.035				
Approvals	cULus				
Termination	Screw-/spring terminal 0.5–1.5 mm^2				

Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	10
Jumper comb 6A	white	762803	762806	762813	762823	762833	10
Jumper comb 6A	blue	762804	762807	762814	762824	762834	10

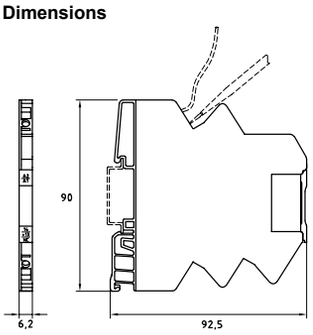
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Replacement relay for 76X821		768002	Relais-SNR 24V 1W	20
Replacement relay for 76X822		768001	Relais-SNR 12V 1W	20
Replacement relay for 76X826 / 76X827		768003	Relais-SNR 60V 1W	20
Tag holder 4×11 mm	white	671313	BZT 0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB 0411	1

Comments

For operation with rated voltage and 100% ED over 24h/day, a distance of = 10 mm must be complied with between the modules or to the neighboring switching components.

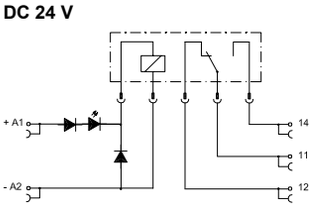
AC/DC-Relay-Interface, 1, Relay with 1 CO contact, pluggable
AC/DC 250 V, 6 A, 1500 VA
Screw-/spring terminal, contact material: $AgSnO_2$ + 5 µm HV

Dimensions

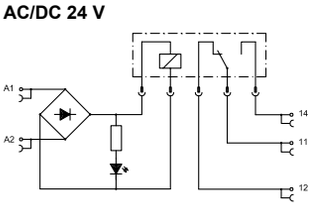


PIN assignment

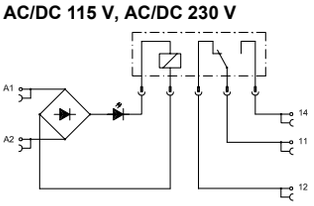
DC 24 V



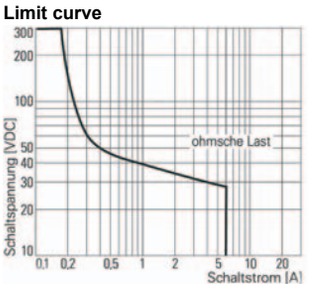
AC/DC 24 V



AC/DC 115 V, AC/DC 230 V



Limit curve



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	760921	RE 7-0921 HTV DC 24 V	5
	AC/DC 24 V	760922	RE 7-0922 HTV AC/DC 24 V	5
	AC/DC 115 V	760926	RE 7-0926 HTV AC/DC 115 V	5
	AC/DC 230 V	760927	RE 7-0927 HTV AC/DC 230 V	5
Spring terminal				
Rated voltage	DC 24 V	761921	RE 7-1921 HTV DC 24 V	5
	AC/DC 24 V	761922	RE 7-1922 HTV AC/DC 24 V	5
	AC/DC 115 V	761926	RE 7-1926 HTV AC/DC 115 V	5
	AC/DC 230 V	761927	RE 7-1927 HTV AC/DC 230 V	5

Input	**DC 24 V**	**AC/DC 24 V**	**AC/DC 115 V**	**AC/DC 230 V**
Input voltage range	20.4 – 30.0 V	16.8 – 30.0 V	92.0 – 126.0 V	184.0 – 253.0 V
Rated current	14.0 mA	21.0 mA	5.0 mA	
Interrupting voltage	< 2.4 V		< 11 V	< 23 V
Protection device	Overload diode		Bridge rectifier	
Rated insulation voltage (EN 50178)	50 V		150 V	250 V
Max. length of connecting lead	2000 m	DC: 2000 m AC: 100 m	DC: 500 m AC: 70 m	250 m
Status indication	LED yellow			
Rated frequency	–	50–60 Hz		
Output	**–**			
Contact type	1 change over contact			
Min. switching voltage	AC/DC 1 V			
Max. switching voltage	AC/DC 250 V			
Min. switching current	AC/DC 1 mA			
Max. switching current	AC/DC 6 A			
Switching capacity AC 15	3 A			
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA			
Max. switching capacity	1500 VA			
Contact material	$AgSn0_2$ + 5 µm HV			
Mechanical service life	>5 x 10^6 operations		5 x 10^6 operations	
Switch-on delay	5 ms	7 ms	8 ms	
Switch-off delay	4 ms	7 ms	13 ms	
Clearance/creep. dist. (contol/load side)	>5.5 mm			
Rated insulation voltage (EN 50178)	300 V			
General				
Housing material	PPE			
IP rating	IP 20			
Field installation	rail TS 35 (EN 50022)			
Insulation voltage input/output	4 kVeff			
Safe isolation	yes			
Operation temperature range	-25 °C – 60 °C			
Storage temperature range	-40 °C – 80 °C			
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm			
Weight (kg/piece)	0.035			
Approvals	cULus			
Termination	Screw-/spring terminal 0.5–1.5 mm^2			

Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	10
Jumper comb 6A	white	762803	762806	762813	762823	762833	10
Jumper comb 6A	blue	762804	762807	762814	762824	762834	10

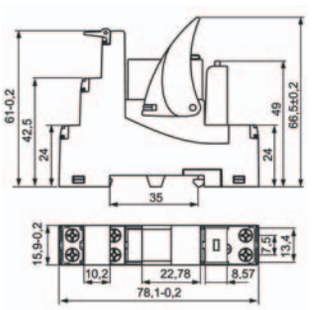
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Replacement relay for 76X921		768006	Relais-SNR 24V 1W HTV	20
Replacement relay for 76X922		768005	Relais-SNR 12V 1W HTV	20
Replacement relay for 76X926 / 760927		768007	Relais-SNR 60V 1W HTV	20
Tag holder 4×11 mm	white	681313	BZT 0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB 0411	1

Comments

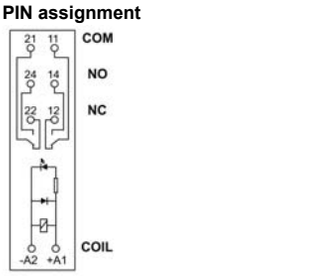
Hard gold-plated contacts: So that the gold layer is not damaged, the specified values are not permitted to be exceeded. At higher switching capacity, the gold layer vaporizes. The deposition in the housing can lead to sparkovers between the coil and contact.
For operation with rated voltage and 100% ED over 24h/day, a distance of = 10 mm must be complied with between the modules or to the neighboring switching components.

DC-Relay-Interface, 2 CO contact, pluggable
AC 400 V / DC 300 V, 8 A, 2000 VA
Screw terminal, Contact material: AgNi, AgNi 5 µm HV

Dimensions

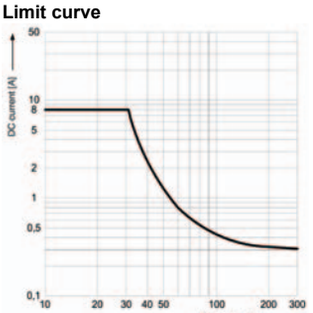


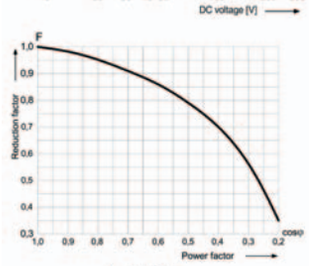
PIN assignment



DC version

Limit curve





Description		Part-No.	Type	PU
Relay Module with AgNi				
Rated voltage	DC 12 V	770040	REP-0040 2W DC 12 V	5
	DC 24 V	770041	REP-0041 2W DC 24 V	5
	DC 115 V	770046	REP-0046 2W DC 115 V	5
Relay Module with AgNi + 5µm HV				
Rated voltage	DC 12 V	770240	REP-0240 2W HTV DC 12 V	5
	DC 24 V	770241	REP-0241 2W HTV DC 24 V	5
	DC 115 V	770246	REP-0246 2W HTV DC 115 V	5

Input	**DC 12 V**	**DC 24 V**	**DC 115 V**
Input voltage range	8.4 – 15.6 V	16.8 – 31.2 V	77.0 – 143.0 V
Rated current	40.0 mA	20.0 mA	5.0 mA
Rated voltage	DC 12 V	DC 24 V	DC 115 V
Power comsumption		0,48 W	
Interrupting voltage	<1.2 V	<2.4 V	<11 V
Protection device		Overload diode	
Max. length of connecting lead		–	
Status indication		LED green	
Output			
Contact type		2 change over contact	
Min. switching voltage		AC/DC 5 V	
Max. switching voltage		AC 400 V / DC 300 V	
Min. switching current		AgNi: AC/DC 5mA; AgNi+5µm HV: AC/DC 2mA	
Max. switching current		AC/DC 8 A	
Switching capacity AC 15		bei 24 V: 3,1 A; bei 230 V: 2 A	
Switching capacity DC 13		at 24 V: 2A; at 115 V: 300 mA, at 230 V: 150 mA	
Max. switching capacity		2000 VA	
Contact material		AgNi bzw. AgNi + 5 µm HV	
Mechanical service life		>3 x 10^7 operations	
Switch-on delay		7 ms	
Switch-off delay		3 ms	
Clearance/creep. dist. (contol/load side)		Clearance distance: >10 mm; Creepage distance: >10 mm	
Rated insulation voltage (EN 50178)		AC 400 V (category C 250)	
General			
Housing material		PA6	
IP rating		IP 20	
Field installation		rail TS 35 (EN 50022)	
Insulation voltage input/output		5 kVeff	
Safe isolation		yes	
Operation temperature range		-40 °C – 85 °C	
Storage temperature range		-40 °C – 85 °C	
Dimensions (w × h × d)		15.9 × 78.1 × 67.0 mm	
Weight (kg/piece)		0.062	
Approvals		UL, CSA	
Termination		Screw terminal: 0.2–4.0 mm2	

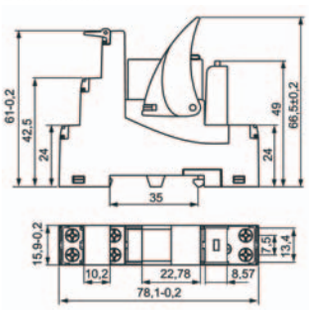
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Relay socket		770900	RES-0900	10
Retainer / retractor clip		770901	REE-0901	10
Description plate		770902	REM-0902	10
Backup relay DC 12V		770918	RE2W-0918 DC12	10
Backup relay DC 12V HV		770919	RE2WHV-0919 DC12	10
Backup relay DC 24V		770920	RE2W-0920 DC24	10
Backup relay DC 24V HV		770921	RE2WHV-0921 DC24	10
Backup relay DC 110V		770922	RE2W-0922 DC120	10
Backup relay DC 110V HV		770923	RE2WHV-0923 DC120	10
Protecting module AC 6-24V		770911	PM41G-0911	10
Protecting module DC 110V		770916	PM43G-0916	10

Comments

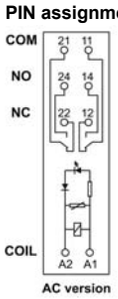
Part-No. 770240–770246:
Hard gold-plated contacts: So that the gold layer is not damaged, the specified values are not permitted to be exceeded. At higher switching capacity, the gold layer vaporizes. The deposition in the housing can lead to sparkovers between the coil and contact.

AC-Relay-Interface, 2 CO contact, pluggable
AC 400 V/DC 300 V, 8 A, 2000 VA
Screw terminal, Contact material: AgNi, AgNi + 5 µm HV

Dimensions

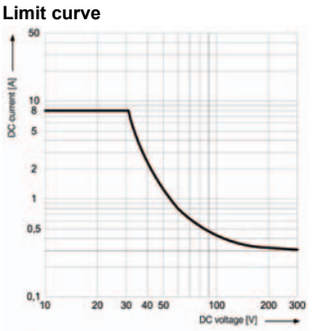


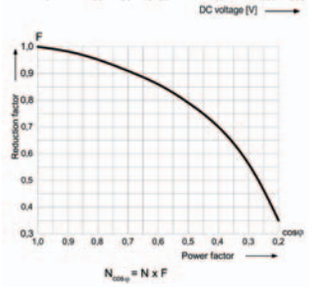
PIN assignment



AC version

Limit curve





Description		Part-No.	Type	PU
Relay Module with AgNi				
Rated voltage	AC 12 V	770050	REP-0050 2W AC 12 V	5
	AC 24 V	770051	REP-0051 2W AC 24 V	5
	AC 120 V	770056	REP-0056 2W AC 120 V	5
	AC 230 V	770047	REP-0047 2W AC 230 V	5
Relay Module with AgNi + 5µm HV				
Rated voltage	AC 12 V	770250	REP-0250 2W HTV AC 12 V	5
	AC 24 V	770251	REP-0251 2W HTV AC 24 V	5
	AC 120 V	770256	REP-0256 2W HTV AC 120 V	5
	AC 230 V	770247	REP-0247 2W HTV AC 230 V	5

Input	**AC 12 V**	**AC 24 V**	**AC 120 V**	**AC 230 V**
Input voltage range	9.6 – 14.0 V	19.2 – 28.2 V	96.0 – 144.0 V	184.0 – 276.0 V
Rated current	– mA			
Rated voltage	AC 12 V	AC 24 V	AC 120 V	AC 230 V
Power comsumption	0.75 VA			
Interrupting voltage	<1.2 V	<2.4 V	<12 V	<23 V
Protection device	Varistor			
Max. length of connecting lead	–			
Status indication	LED green			
Output				
Contact type	2 change over contact			
Min. switching voltage	AC/DC 5 V			
Max. switching voltage	AC 400 V / DC 300 V			
Min. switching current	AgNi: AC/DC 5mA; AgNi+5µm HV: AC/DC 2mA			
Max. switching current	AC/DC 8 A			
Switching capacity AC 15	bei 24 V: 3.1 A; bei 230 V: 2 A			
Switching capacity DC 13	at 24 V: 2A; at 115 V: 300 mA, at 230 V: 150 mA			
Max. switching capacity	2000 VA			
Contact material	AgNi bzw. AgNi + 5 µm HV			
Mechanical service life	>3 x 10^7 operations			
Switch-on delay	7 ms			
Switch-off delay	3 ms			
Clearance/creep. dist. (contol/load side)	Clearance distance: >10 mm; Creepage distance: >10 mm			
Rated insulation voltage (EN 50178)	AC 400 V (category C 250)			
General				
Housing material	PA6			
IP rating	IP 20			
Field installation	rail TS 35 (EN 50022)			
Insulation voltage input/output	5 kVeff			
Safe isolation	yes			
Operation temperature range	-40 °C – 70 °C			
Storage temperature range	-40 °C – 85 °C			
Dimensions (w × h × d)	15.9 × 78.1 × 66.5 mm			
Weight (kg/piece)	0.062			
Approvals	UL, CSA			
Termination	Screw terminal: 0.2–4.0 mm2			

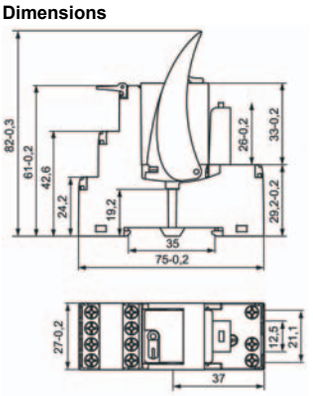
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Relay socket		770900	RES-0900	10
Retainer / retractor clip		770901	REE-0901	10
Description plate		770902	REM-0902	10
Backup relay AC 12V		770926	RE2W-0926 AC12	10
Backup relay AC 12V HV		770927	RE2WHV-0927 AC12	10
Backup relay AC 24V		770928	RE2W-0928 AC24	10
Backup relay AC 24V HV		770929	RE2WHV-0929 AC24	10
Backup relay AC 110V		770930	RE2W-0930 AC120	10
Backup relay AC 110V HV		770931	RE2WHV-0931 AC120	10
Backup relay AC 230V		770924	RE2WHV-0924 AC230	10
Backup relay AC 230V HV		770925	RE2WHV-0925 AC230	10
Protecting module AC 6-24V		770913	PM91G.0913	10
Protecting module AC/DC 110-230V		770917	PM93G-0917	

Comments

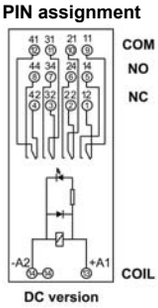
Part-No. 770250–770247:
Hard gold-plated contacts: So that the gold layer is not damaged, the specified values are not permitted to be exceeded. At higher switching capacity, the gold layer vaporizes. The deposition in the housing can lead to sparkovers between the coil and contact.

DC-Relay-Interface, 4 CO contact, pluggable
AC/DC 250 V; 6 A, 1500 VA
Screw terminal, Contact material: AgNi, AgNi + 5 µm HV

Dimensions

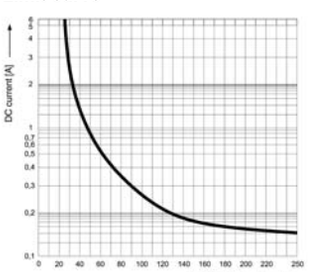


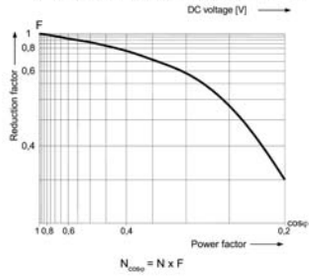
PIN assignment



DC version

Limit curve





$N_{cos\varphi} = N \times F$

Description		Part-No.	Type	PU
Relay Module with AgNi				
Rated voltage	DC 12 V	770440	REI4-0440 4W DC 12 V	5
	DC 24 V	770441	REI4-0441 4W DC 24 V	5
	DC 115 V	770446	REI4-0446 4W DC 115 V	5
Relay Module with AgNi + 5µm HV				
Rated voltage	DC 12 V	770460	REI4HV-0460 4W HTV DC 12 V	5
	DC 24 V	770461	REI4HV-0461 4W HTV DC 24 V	5
	DC 115 V	770466	REI4HV-0466 4W HTV DC 115 V	5

Input	**DC 12 V**	**DC 24 V**	**DC 115 V**
Input voltage range	9.6 – 13.2 V	19.2 – 26.4 V	88.0 – 121.0 V
Rated current		– mA	
Rated voltage	DC 12 V	DC 24 V	DC 115 V
Power comsumption		0.9 W	
Interrupting voltage	<1.2 V	<2.4 V	11 V11 V
Protection device		Overload diode	
Max. length of connecting lead		–	
Status indication		LED green	
Output			
Contact type		4 change over contact	
Min. switching voltage		AC/DC 5 V	
Max. switching voltage		AC/DC 250 V	
Min. switching current		AgNi: AC/DC 5mA; AgNi+5µm HV: AC/DC 2mA	
Max. switching current		AC/DC 6 A	
Switching capacity AC 15		bei 24 V: 3.1 A; bei 230 V: 1.6 A	
Switching capacity DC 13		at 24 V: 2A; at 115 V: 300 mA, at 230 V: 150 mA	
Max. switching capacity		1500 VA	
Contact material		AgNi bzw. AgNi + 5 µm HV	
Mechanical service life		>2 x 10^7 operations	
Switch-on delay		13 ms	
Switch-off delay		3 ms	
Clearance/creep. dist. (contol/load side)		Clearance distance: >1.6 mm; Creepage distance: >3.2 mm	
Rated insulation voltage (EN 50178)		AC 250 V (category B 250)	
General			
Housing material		PA 6	
IP rating		IP 20	
Field installation		rail TS 35 (EN 50022)	
Insulation voltage input/output		2,5 kVeff	
Safe isolation		ja	
Operation temperature range		-40 °C – 70 °C	
Storage temperature range		-40 °C – 85 °C	
Dimensions (w × h × d)		27.0 × 75.0 × 82.0 mm	
Weight (kg/piece)		0.108	
Approvals		UL, CSA	
Termination		Screw terminal: 0.2–4.0 mm^2	

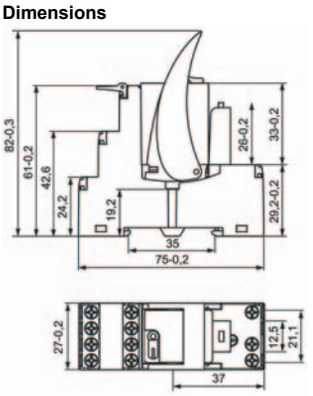
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Relay socket		770905	RES4W-0905	10
Retainer / retractor clip		770906	REE4W-0906	10
Description plate		770907	REM4W-0907	10
Backup relay DC 12 V		770400	RE4W-0400 DC12	10
Backup relay DC 12 V HV		770420	RE4WHV-0420 DC12	10
Backup relay DC 24 V		770401	RE4W-0401 DC24	10
Backup relay DC 24 V HV		770421	RE4WHV-0421 DC24	10
Backup relay DC 110 V		770406	RE4W-0406 DC120	10
Backup relay DC 110 V HV		770426	RE4WHV-0426 DC120	10
Protecting module AC 6-24 V		770911	PM41G-0911	10
Protecting module DC 110 V		770916	PM43G-0916	10

Comments

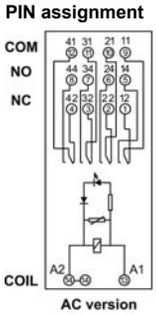
Part-No. 770460–770466:
Hard gold-plated contacts: So that the gold layer is not damaged, the specified values are not permitted to be exceeded. At higher switching capacity, the gold layer vaporizes. The deposition in the housing can lead to sparkovers between the coil and contact.

AC-Relay-Interface, 4 CO contact, pluggable
AC/DC 250 V; 6 A, 1500 VA
Screw terminal, Contact material: AgNi, AgNi + 5 µm HV

Dimensions

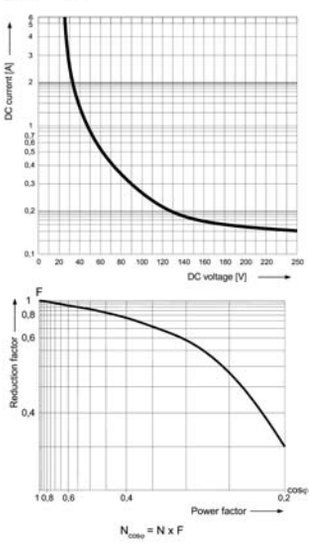


PIN assignment



AC version

Limit curve



Description		Part-No.	Type	PU
Relay Module with AgNi				
Rated voltage	AC 12 V	770450	REI4-0450 4W AC 12 V	5
	AC 24 V	770451	REI4-0451 4W AC 24 V	5
	AC 120 V	770456	REI4-0456 4W AC 120 V	5
	AC 230 V	770457	REI4-0457 4W AC 230 V	5
Relay Module with AgNi + 5µm HV				
Rated voltage	AC 12 V	770470	REI4HV-0470 4W HTV AC 12 V	5
	AC 24 V	770471	REI4HV-0471 4W HTV AC 24 V	5
	AC 120 V	770476	REI4HV-0476 4W HTV AC 120 V	5
	AC 230 V	770477	REI4HV-0477 4W HTV AC 230 V	5

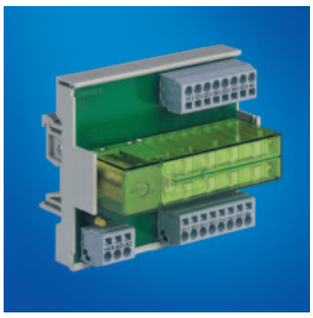
Input	**AC 12 V**	**AC 24 V**	**AC 120 V**	**AC 230 V**
Input voltage range	9.6 – 13.2 V	19.2 – 26.4 V	96.0 – 132.0 V	184.0 – 253.0 V
Rated current	– mA			
Rated voltage	AC 12 V	AC 24 V	AC 120 V	AC 230 V
Power comsumption	1.6 VA			
Interrupting voltage	<2.4 V	<4.8 V	<24 V	<46 V
Protection device	Varistor			
Max. length of connecting lead	–			
Status indication	LED green			
Output				
Contact type	4 change over contact			
Min. switching voltage	AC/DC 5 V			
Max. switching voltage	AC/DC 250 V			
Min. switching current	AgNi: AC/DC 5mA; AgNi+5µm HV: AC/DC 2mA			
Max. switching current	AC/DC 6 A			
Switching capacity AC 15	bei 24 V: 3.1 A; bei 230 V: 1.6 A			
Switching capacity DC 13	at 24 V: 2A; at 115 V: 300 mA, at 230 V: 150 mA			
Max. switching capacity	1500 VA			
Contact material	AgNi bzw. AgNi + 5 µm HV			
Mechanical service life	>2 x 10^7 operations			
Switch-on delay	10 ms			
Switch-off delay	8 ms			
Clearance/creep. dist. (contol/load side)	Clearance distance: >1.6 mm; Creepage distance: >3.2 mm			
Rated insulation voltage (EN 50178)	AC 250 V (category B 250)			
General				
Housing material	PA 6			
IP rating	IP 20			
Field installation	rail TS 35 (EN 50022)			
Insulation voltage input/output	2,5 kVeff			
Safe isolation	yes			
Operation temperature range	-40 °C – 55 °C			
Storage temperature range	-40 °C – 85 °C			
Dimensions (w × h × d)	27.0 × 75.0 × 82.0 mm			
Weight (kg/piece)	0.108			
Approvals	UL, CSA			
Termination	Screw terminal: 0.2–4.0 mm^2			

Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Relay socket		770905	RES4W-0905	10
Retainer / retractor clip		770906	REE4W-0906	10
Description plate		770907	REM4W-0907	10
Backup relay AC 12 V		770410	RE4W-0410 AC12	10
Backup relay AC 12 V HV		770430	RE4WHV-0430 AC12	10
Backup relay AC 24 V		770411	RE4W-0411 AC24	10
Backup relay AC 24 V HV		770431	RE4WHV-0431 AC24	10
Backup relay AC 120 V		770416	RE4W-0416 AC120	10
Backup relay AC 120 V HV		770436	RE4WHV-0436 AC120	10
Backup relay AC 230 V		770417	RE4W-0417 AC120	10
Backup relay AC 230 V HV		770437	RE4WHV-0437 AC120	10
Protecting module AC 6-24 V		770913	PM41G-0913	10
Protecting module AC 110-230 V		770917	PM43G-0917	10

Comments

Part-No. 770470–770477:
Hard gold-plated contacts: So that the gold layer is not damaged, the specified values are not permitted to be exceeded. At higher switching capacity, the gold layer vaporizes. The deposition in the housing can lead to sparkovers between the coil and contact.

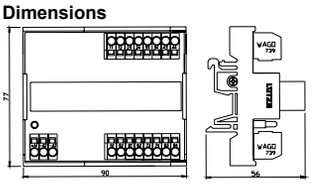
DC Relay-Module, 1 Relay with positively driven contact, 3 NC and 5 NO contact AC/DC 250 V, 6 A, 1500 VA
Spring terminal, contact material: $AgSnO_2$ + 0.2 µm HV



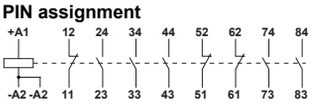
Description		Part-No.	Type	PU
Spring terminal				
Rated voltage	DC 24 V	716302	RPE 6-6302 DC 24 V	10
	DC 110 V	716303	RPE 6-6303 DC 110 V	10

Input	**DC 24 V**	**DC 110 V**
Input voltage range	16.8 V – 30.0 V	77.0 V – 137.5 V
Rated current	35.0 mA	15.0 mA
Interrupting voltage	<2.4 V	<11 V
Protection device	Overload diode and reverse diode	
Rated insulation voltage (EN 50178)	50 V	160 V
Max. length of connecting lead	–	
Status indication	LED yellow	
Rated frequency	–	
Output		
Contact type	3 normaly close contact / 5 normaly open contact, positivily driven contact EN 50205 - A	
Min. switching voltage	AC/DC 5 V	
Max. switching voltage	AC/DC 250 V	
Min. switching current	AC/DC 5 mA	
Max. switching current	AC/DC 6 A	
Switching capacity AC 15	3 A	
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA	
Max. switching capacity	1500 VA	
Contact material	$AgSnO_2$ + 0.2 µm HV	
Mechanical service life	1 x 10^7 operations	
Switch-on delay	10 ms	
Switch-off delay	10 ms	
Clearance/creep. dist. (contol/load side)	>10 mm	
Rated insulation voltage (EN 50178)	250 V	
Inrush current	20 A (20 ms)	
General		
Housing material	PPO	
IP rating	IP 20	
Field installation	rail TS 35 (EN 50022)	
Insulation voltage input/output	4 kVeff	
Safe isolation	yes	
Operation temperature range	-25°C – 70°C (Class T3 according to EN 30155)	
Storage temperature range	-40 °C – 80 °C	
Dimensions (w × h × d)	90.0 × 77.0 × 56.0 mm	
Weight (kg/piece)	0.120	
Approvals	cULus in preparation	
Termination	Spring terminal 0.08–2.5 mm^2	

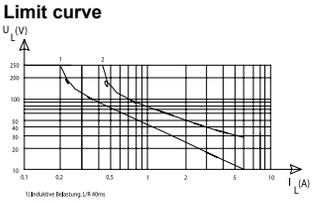
Dimensions



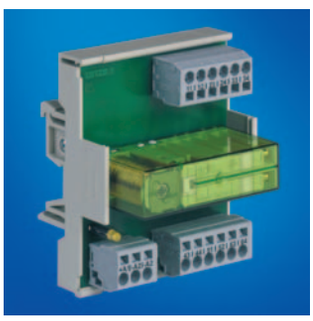
PIN assignment



Limit curve



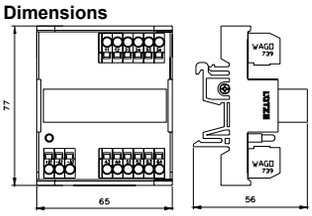
DC Relay-Module, 1 Relay with positively driven contact, 2 NC and 4 NO contact AC/DC 250 V, 6 A, 1500 VA
Spring terminal, contact material: $AgSnO_2$ + 0.2 µm HV



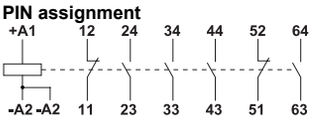
Description		Part-No.	Type	PU
Spring terminal				
Rated voltage	DC 24 V	716300	RPE 6-6300 DC 24 V	10
	DC 110 V	716301	RPE 6-6301 DC 110 V	10

Input	**DC 24 V**	**DC 110 V**
Input voltage range	16.8 V – 30.0 V	77.0 V – 137.5 V
Rated current	35.0 mA	15.0 mA
Interrupting voltage	<2.4 V	<11 V
Protection device	Overload diode and reverse diode	
Rated insulation voltage (EN 50178)	50 V	160 V
Max. length of connecting lead	–	
Status indication	LED yellow	
Rated frequency	–	
Output		
Contact type	2 normaly close contact / 4 normaly open contact, positivily driven contact EN 50205 - A	
Min. switching voltage	AC/DC 5 V	
Max. switching voltage	AC/DC 250 V	
Min. switching current	AC/DC 5 mA	
Max. switching current	AC/DC 6 A	
Switching capacity AC 15	3 A	
Switching capacity DC 13	at 24 V: 1 A; at 115 V: 200 mA; at 230 V: 100 mA	
Max. switching capacity	1500 VA	
Contact material	$AgSnO_2$ + 0.2 µm HV	
Mechanical service life	>1 x 10^7 operations	
Switch-on delay	10 ms	
Switch-off delay	10 ms	
Clearance/creep. dist. (contol/load side)	>10 mm	
Rated insulation voltage (EN 50178)	250 V	
Inrush current	20 A (20 ms)	
General		
Housing material	PPO	
IP rating	IP 20	
Field installation	rail TS 35 (EN 50022)	
Insulation voltage input/output	4 kVeff	
Safe isolation	yes	
Operation temperature range	-25°C – 70°C (Class T3 according to EN 30155)	
Storage temperature range	-40 °C – 80 °C	
Dimensions (w × h × d)	65.0 × 77.0 × 56.0 mm	
Weight (kg/piece)	0.098	
Approvals	cULus in preparation	
Termination	Spring terminal 0.08–2.5 mm^2	

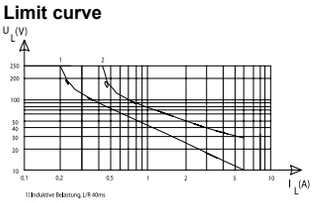
Dimensions



PIN assignment



Limit curve



DC Relay DIN Interface, 32 independent relays, each with 1 CO contact
AC/DC 250 V, 3 A, 750 VA
Screw terminal, Contact material: AgNi

Description		Part-No.	Type	PU
Rated voltage	DC 24 V	711756	UBE-D-1756	1

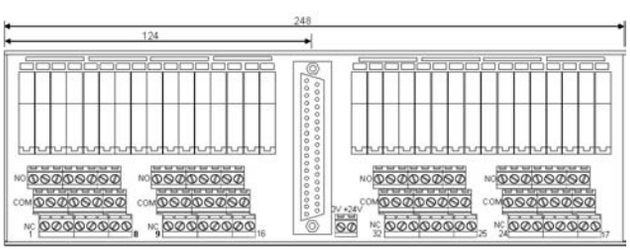
Input	
Input voltage range	20.4 – 30.0 V
Rated current	per relay 6mA
Rated insulation voltage (EN 50178)	50 V
max. connection cable length	50 m
Status indication	LED red
Connection to control device	37-way Sub-D female connector
Connection to supply	1× 2-way screw terminal: 0,5 - 2,5 mm^2
Output	
Contact type	32 × 1 change over contact
Min. switching voltage	AC/DC 12 V
Max. switching voltage	AC/DC 250 V
Min. switching current	AC/DC 10 mA
Max. switching current	AC/DC 3 A
Switcing capacity	AC 15 3 A DC 13 24V: 1A; 115V: 200mA; 230V: 100mA
Max. switching capacity	750 VA
Contact material	AgNi
Mechanical service life	> 5 × 10^6 operations
Switch-on delay	5 ms
Switch-off delay	4 ms
Clearance/creep. dist. (contol/load side)	> 5,5 mm
Rated insulation voltage (EN 50178)	300 V
Termination	32× 3-way screw terminal: 0,5 - 2,5 mm^2
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN50022)
Insulation voltage input/output	1.2 kVeff
Operation temperature range	0 – 70 °C
Storage temperature range	-20 – 80 °C
Dimensions (w × h × d)	248.0 × 78.0 × 62.0 mm
Weight (kg/piece)	1.1

Comments

Accessories

Cable assemblies suitable for direct connection to most standard PLC systems (e.g. Allen Bradley, Siemens, Mitsubishi) are available in any cable length. Please contact the Lutze Sales Office to discuss your requirements.

Dimensions



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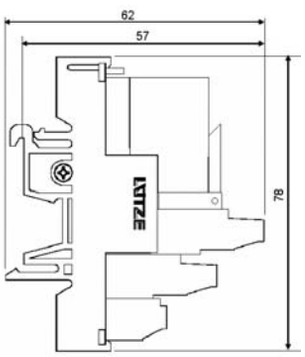


PIN assignment

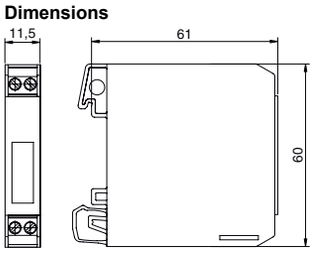
37-way Sub-D

37-way	Function
1	Ry1
2	Ry2
3	Ry3
4	Ry4
5	Ry5
6	Ry6
7	Ry7
8	Ry8
9	Ry9
10	Ry10
11	Ry11
12	Ry12
13	Ry13
14	Ry14
15	Ry15
16	Ry16
17	0 V
18	DC + 24 V
19	n/c
20	Ry17
21	Ry18
22	Ry19
23	Ry20
24	Ry21
25	Ry22
26	Ry23
27	Ry24
28	Ry25
29	Ry26
30	Ry27
31	Ry28
32	Ry29
33	Ry30
34	Ry31
35	Ry32
36	n/c
37	n/c

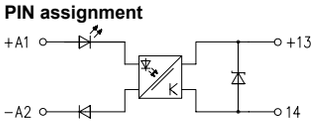
Notice

DC Solid State Relay, 2 wire
Switching element DC 60 V; 1.5 A
Screw terminal

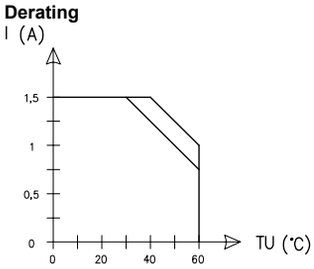
Dimensions



PIN assignment



Derating

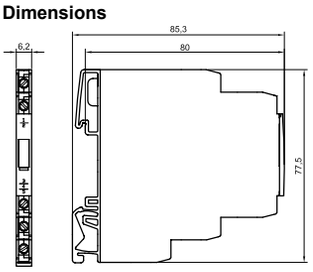


Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	730801	OT 4-0801 DC 24 V	5
Input		**DC 24 V**		
Input voltage range		17.0 – 30.0 V		
Rated current		8.0 mA		
Interrupting voltage		–		
Protection device		Reverse diode		
Status indication		LED yellow		
Rated frequency		–		
Output				
Switching element		Transistor, N/O contact		
Min. switching voltage		DC 10 V		
Max. switching voltage		DC 60 V		
Min. switching current		DC 10 mA		
Max. switching current		DC 1.5 A (Derating)		
Inrush current		DC 4 A (0.2 s)		
Leakage current		<0.1 mA		
Switch-on delay		0.1 ms		
Switch-off delay		0.1 ms		
Switching frequency		<2 kHz		
Clearance/creep. dist. (contol/load side)		>5.5 mm		
Protection device output		Suppressor diode		
General				
Housing material		PPE		
IP rating		IP 20		
Field installation		rail TS 35 (EN 50022)		
Insulation voltage input/output		4 kVeff		
Safe isolation		yes		
Operation temperature range		-25 °C – 60 °C		
Storage temperature range		-40 °C – 80 °C		
Dimensions (w × h × d)		11.5 × 60.0 × 67.0 mm		
Weight (kg/piece)		0.032		
Approvals		cULus		
Termination		Screw terminal: 0.25–2.5 mm^2		

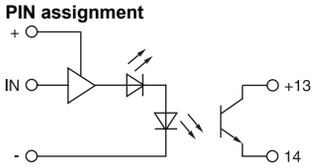
Accesories	Colour	Article number	Type	Pkg. units
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 9×20 mm	white	681315	BZT -0920	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 9 x 20 mm (Sheet with 270 labels)		681032	LEB-0924	1

DC Solid State Relay, 2 wire
Switching element DC 48 V; 0.5 A; 20 kHz
Screw terminal

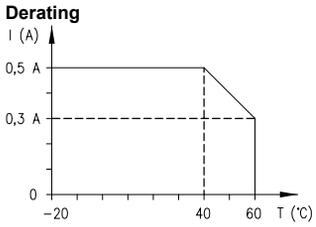
Dimensions



PIN assignment



Derating



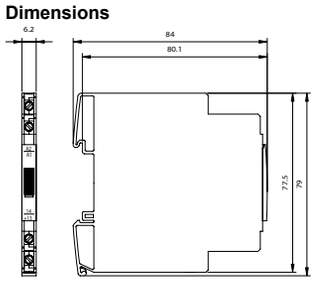
Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	762082	OT 6-2082 DC 24 V	4

Input	**DC 24 V**
Input voltage range	4.2 – 30.0 V
Rated current	0.1 mA
Interrupting voltage	<2.7 V
Protection device	Suppressor diode
Status indication	LED yellow
Rated frequency	–
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 5 V
Max. switching voltage	DC 48 V
Min. switching current	DC 10 mA
Max. switching current	DC 500 mA (Derating)
Inrush current	–
Leakage current	–
Switch-on delay	12 µs
Switch-off delay	12 µs
Switching frequency	<20 kHz
Clearance/creep. dist. (contol/load side)	>4.5 mm
Protection device output	Suppressor diode
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	3,75 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 84.0 × 80.0 mm
Weight (kg/piece)	0.029
Approvals	–
Termination	Screw terminal: 0.25–2.5 mm^2

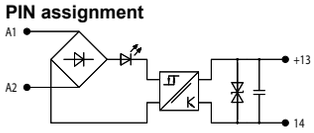
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

DC Solid State Relay, 2 wire
Switching element DC 48 V; 0.5 A
Screw-/ Spring terminal

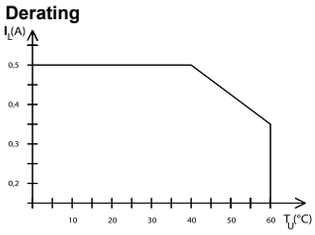
Dimensions



PIN assignment



Derating



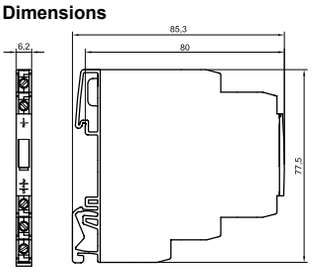
Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	760101	OT 6-0101 DC 24 V	10
Spring terminal				
Rated voltage	DC 24 V	761101	OT 6-1101 DC 24 V	10

Input	**DC 24 V**
Input voltage range	11.0 – 30.0 V
Rated current	18.0 mA
Interrupting voltage	<6 V
Protection device	Reverse voltage protection
Status indication	LED yellow
Rated frequency	–
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 6 V
Max. switching voltage	DC 48 V
Min. switching current	DC 10 mA
Max. switching current	DC 0.5 A (Derating)
Inrush current	–
Leakage current	–
Switch-on delay	2 ms
Switch-off delay	6 ms
Switching frequency	max. 50 Hz
Clearance/creep. dist. (contol/load side)	>5.5 mm
Protection device output	Suppressor diode
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 77.5 × 75.0 mm
Weight (kg/piece)	0.029
Approvals	cULus
Termination	Screw-/spring terminal 0.25–2.5 mm2

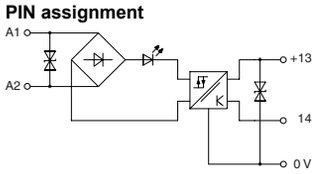
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

DC Solid State Relay, 3 wire, plus switching
Switching element DC 30 V; 1.7 A; short circuit protection
Screw-/ Spring terminal

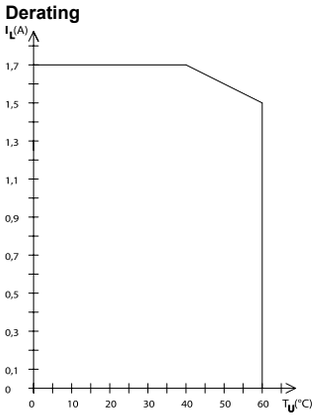
Dimensions



PIN assignment



Derating



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	760102	OT 6-0102 DC 24 V	3
Spring terminal				
Rated voltage	DC 24 V	761102	OT 6-1102 DC 24 V	3

Input	**DC 24 V**
Input voltage range	10.0 – 30.0 V
Rated current	7.0 mA
Interrupting voltage	<9 V
Protection device	Suppressor diode
Status indication	LED yellow, short circuit red
Rated frequency	–
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 10 V
Max. switching voltage	DC 30 V
Min. switching current	DC 1 mA
Max. switching current	DC 1.7 A (Derating)
Inrush current	–
Leakage current	–
Switch-on delay	220 µs
Switch-off delay	200 µs
Switching frequency	<2 kHz
Clearance/creep. dist. (contol/load side)	>5.5 mm
Protection device output	Suppressor diode
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 84.0 × 80.0 mm
Weight (kg/piece)	0.030
Approvals	cULus
Termination	Screw-/spring terminal 0.25–2.5 mm2

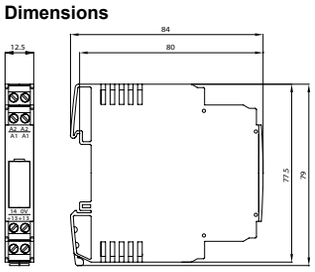
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

DC Solid State Relay, 3 wire, plus switching
Switching element DC 30 V; 5 A; 10 A
Screw-/Spring terminal

Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V / 5 A	760105	OT 6-0105 DC 24 V	2
	DC 24 V / 10 A	760708	OT 6-0708 DC 24 V	1
Spring terminal				
Rated voltage	DC 24 V / 5 A	761105	OT 6-1105 DC 24 V	2
	DC 24 V / 10 A	761708	OT 6-1708 DC 24 V	1

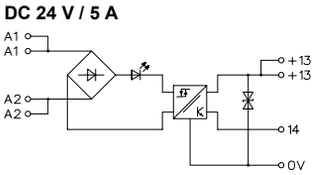
Input	**DC 24 V / 5 A**	**DC 24 V / 10 A**
Input voltage range	11.0 – 30.0 V	16.0 – 30.0 V
Rated current	18.0 mA	22.0 mA
Interrupting voltage	<5 V	
Protection device	Bridge rectifier	Reverse diode, Suppressor diode
Status indication	LED yellow	LED yellow, Switching current > 3 A: LED green
Rated frequency	–	
Output		
Switching element	Transistor, N/O contact	
Min. switching voltage	DC 10 V	
Max. switching voltage	DC 30 V	
Min. switching current	DC 500 mA	
Max. switching current	DC 5 A (Derating)	DC 10 A (Derating)
Inrush current	–	
Leakage current	<20 µA	
Switch-on delay	260 µs	0.1 ms
Switch-off delay	4 µs	7 ms
Switching frequency	<500 Hz	<50 Hz
Clearance/creep. dist. (contol/load side)	>5.5 mm	
Protection device output	Supressor diode	
General		
Housing material	PPE	
IP rating	IP 20	
Field installation	rail TS 35 (EN 50022)	
Insulation voltage input/output	4 kVeff	
Safe isolation	yes	
Operation temperature range	-25 °C – 60 °C	
Storage temperature range	-40 °C – 80 °C	
Dimensions (w × h × d)	12.5 × 79.0 × 84.0 mm	
Weight (kg/piece)	0.049	
Approvals	DC 24 V / 5 A : cULus	
Termination	Screw-/spring terminal 0.25–2.5 mm^2	

Dimensions

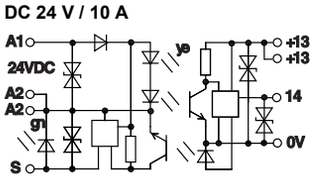


PIN assignment

DC 24 V / 5 A

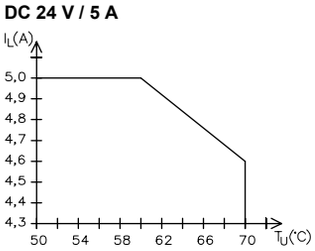


DC 24 V / 10 A

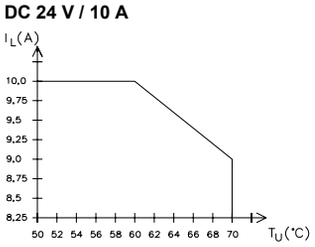


Derating

DC 24 V / 5 A

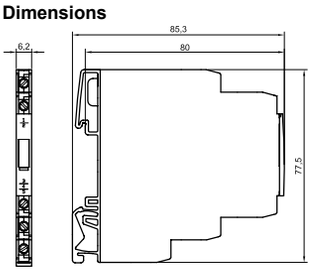


DC 24 V / 10 A

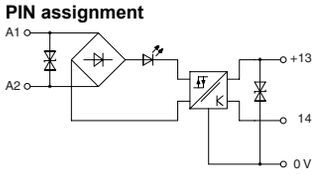


AC/DC Solid State Relay, 3 wire, plus switching
Switching element DC 30 V; 3 A; short circuit protection, wide range input
Screw-/ Spring terminal

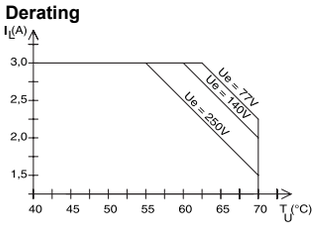
Dimensions



PIN assignment



Derating



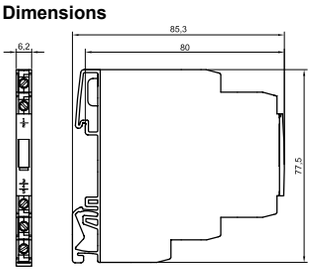
Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	AC/DC 77–250 V	760705	OT 6-0705 AC/DC 24 V	3
Spring terminal				
Rated voltage	AC/DC 77–250 V	761705	OT 6-1705 AC/DC 24 V	3

Input	**AC/DC 77–250 V**
Input voltage range	77.0 – 250.0 V
Rated current	3.0 mA
Interrupting voltage	<25 V
Protection device	Suppressor diode
Status indication	LED yellow
Rated frequency	50–60 Hz
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 10 V
Max. switching voltage	DC 30 V
Min. switching current	DC 1 mA
Max. switching current	DC 3 A (Derating)
Inrush current	DC 5 A (1 s)
Leakage current	–
Switch-on delay	7 ms
Switch-off delay	60 ms
Switching frequency	<10 Hz
Clearance/creep. dist. (contol/load side)	>5.5 mm
Protection device output	Suppressor diode
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	0,5 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 70 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 84.0 × 80.0 mm
Weight (kg/piece)	0.029
Approvals	cULus
Termination	Screw-/spring terminal 0.25–2.5 mm^2

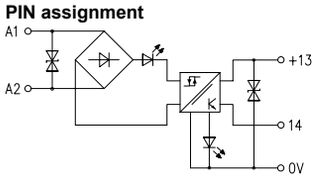
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

DC Solid State Relay, 3 wire, plus switching
Switching element DC 30 V; 5 A; short circuit protection
Screw-/ Spring terminal

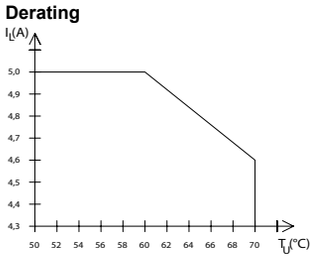
Dimensions



PIN assignment



Derating



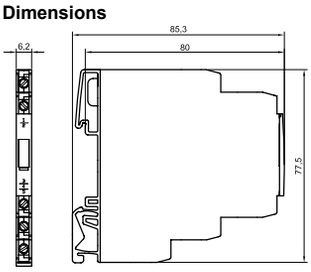
Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	760103	OT 6-0103 DC 24 V	3
Spring terminal				
Rated voltage	DC 24 V	761103	OT 6-1103 DC 24 V	3

Input	**DC 24 V**
Input voltage range	10.0 – 30.0 V
Rated current	7.0 mA
Interrupting voltage	<9 V
Protection device	Suppressor diode
Status indication	LED yellow, short circuit red
Rated frequency	–
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 10 V
Max. switching voltage	DC 30 V
Min. switching current	DC 1 mA
Max. switching current	DC 5 A (Derating)
Inrush current	–
Leakage current	–
Switch-on delay	220 µs
Switch-off delay	200 µs
Switching frequency	<2 kHz
Clearance/creep. dist. (contol/load side)	>5.5 mm
Protection device output	Suppressor diode
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 84.0 × 80.0 mm
Weight (kg/piece)	0.030
Approvals	–
Termination	Screw-/spring terminal 0.25–2.5 mm2

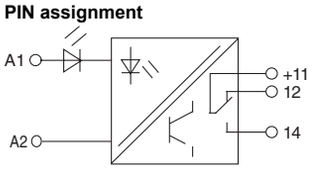
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

DC Solid State Relay, 3 wire, plus switching
Switching element DC 30 V; 0.5 A; change over contact
Screw terminal

Dimensions



PIN assignment

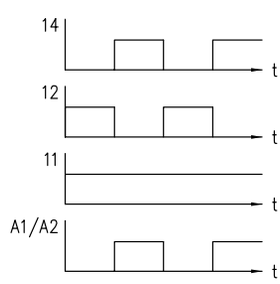


Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	762083	OT 6-2083 DC 24 V	4

Input	**DC 24 V**
Input voltage range	10.0 – 40.0 V
Rated current	6.0 mA
Interrupting voltage	<5 V
Protection device	Suppressor diode
Status indication	LED yellow
Rated frequency	–
Output	
Switching element	Transistor NPN / PNP, change over contact
Min. switching voltage	DC 5 V
Max. switching voltage	DC 48 V
Min. switching current	DC 10 mA
Max. switching current	DC 500 mA
Inrush current	–
Leakage current	–
Switch-on delay	20 µs
Switch-off delay	100 µs
Switching frequency	<1 kHZ
Clearance/creep. dist. (contol/load side)	>4.5 mm
Protection device output	Suppressor diode
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	3,75 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 84.0 × 80.0 mm
Weight (kg/piece)	0.029
Approvals	–
Termination	Screw terminal: 0.25–2.5 mm^2

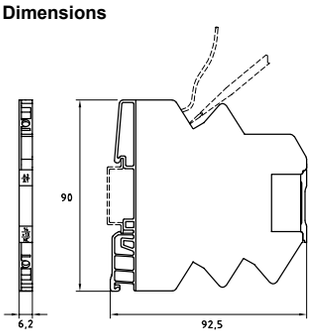
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

Action chart

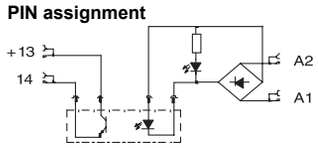


DC Solid State Relay, 2 wire, pluggable
Switching element DC 48 V; 100 mA
Screw-/Spring terminal

Dimensions



PIN assignment



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	760108	OT 7-0108 DC 24 V	5
Spring terminal				
Rated voltage	DC 24 V	761108	OT 7-1108 DC 24 V	5

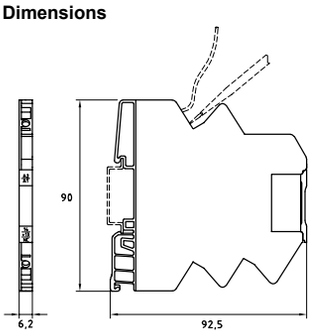
Input	**DC 24 V**
Input voltage range	18.0 – 30.0 V
Rated current	10.0 mA
Interrupting voltage	–
Protection device	Bridge rectifier
Status indication	LED yellow
Rated frequency	–
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 5 V
Max. switching voltage	DC 48 V
Min. switching current	DC 1 mA
Max. switching current	DC 100 mA
Inrush current	–
Leakage current	–
Switch-on delay	5 ms
Switch-off delay	10 ms
Switching frequency	<100 Hz
Clearance/creep. dist. (contol/load side)	>5,5 mm
Protection device output	–
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	2,5 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm
Weight (kg/piece)	0.035
Approvals	cULus in preparation
Termination	Screw-/spring terminal 0.5–1.5 mm^2

Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	5
Jumper comb 6A	white	762803	762806	762813	762823	762833	5
Jumper comb 6A	blue	762804	762807	762814	762824	762834	5

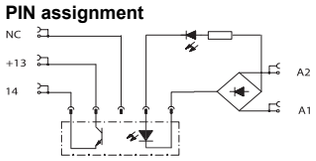
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
SSR-module		768011	SSR-DC 24 V/ DC 48V; 0,1A	20
Tag holder 4×11 mm	white	681313	BZT -0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

AC/DC Solid State Relay, 2 wire, pluggable
Switching element DC 30 V; 3 A
Screw-/Spring terminal

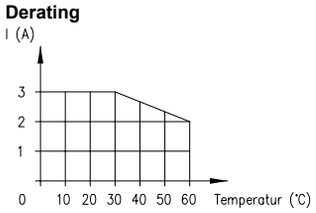
Dimensions



PIN assignment



Derating



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	AC/DC 24 V	760311	OT 7-0311 AC/DC 24 V	5
Spring terminal				
Rated voltage	AC/DC 24 V	761311	OT 7-1311 AC/DC 24 V	5

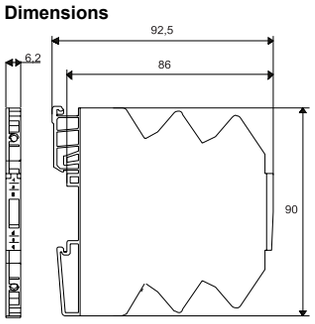
Input	**AC/DC 24 V**
Input voltage range	16.8 – 30.0 V
Rated current	15.0 mA
Interrupting voltage	<2.4 V
Protection device	Bridge rectifier
Status indication	LED yellow
Rated frequency	50–60 Hz
Output	
Switching element	Transistor, N/O contact
Min. switching voltage	DC 0.5 V
Max. switching voltage	DC 30 V
Min. switching current	DC 10 mA
Max. switching current	DC 3 A (Derating)
Inrush current	–
Leakage current	–
Switch-on delay	3 ms
Switch-off delay	4 ms
Switching frequency	<100 Hz
Clearance/creep. dist. (contol/load side)	–
Protection device output	–
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	2,5 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm
Weight (kg/piece)	0.035
Approvals	cULus in preparation
Termination	Screw-/spring terminal 0.5–1.5 mm^2

Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	5
Jumper comb 6A	white	762803	762806	762813	762823	762833	5
Jumper comb 6A	blue	762804	762807	762814	762824	762834	5

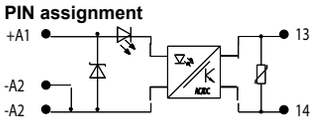
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
SSR-module		768009	SSR-DC 12 V/DC 30 V; 3A	20
Tag holder 4×11 mm	white	681313	BZT -0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

DC Solid State Relay, 2 wire
Switching element AC/DC 250 V; 2 A
Screw-/ Spring terminal

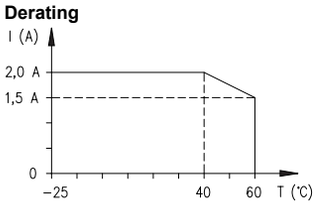
Dimensions



PIN assignment



Derating



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	760107	OT 7-0107 DC 24 V	5
Spring terminal				
Rated voltage	DC 24 V	761107	OT 7-1107 DC 24 V	5

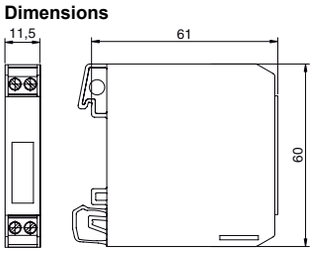
Input	**DC 24 V**
Input voltage range	18.0 – 32.0 V
Rated current	12.0 mA
Interrupting voltage	–
Protection device	Supressor diode
Status indication	LED green
Rated frequency	–
Output	
Switching element	MosFet, N/O contact
Min. switching voltage	AC/DC 2 V
Max. switching voltage	AC/DC 253 V
Min. switching current	AC/DC 1 mA
Max. switching current	AC/DC 2 A (Derating)
Inrush current	AC/DC 8 A; 10 ms
Leakage current	–
Switch-on delay	0.5 ms
Switch-off delay	0.5 ms
Switching frequency	–
Clearance/creep. dist. (contol/load side)	>4 mm
Protection device output	Varistor
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	5 kVeff
Safe isolation	no
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm
Weight (kg/piece)	0.030
Approvals	cULus in preparation
Termination	Screw-/spring terminal 0.5–1.5 mm^2

Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Tag holder 4×11 mm	white	681313	BZT -0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

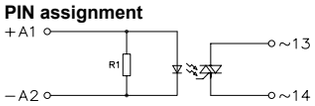
Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	5
Jumper comb 6A	white	762803	762806	762813	762823	762833	5
Jumper comb 6A	blue	762804	762807	762814	762824	762834	5

DC Solid State Relay, 2 wire
Switching element AC 250 V; 1.5 A; Zero crossing switch
Screw terminal

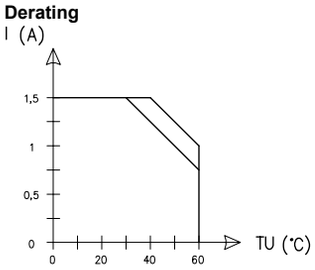
Dimensions



PIN assignment



Derating



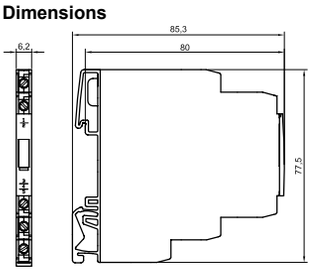
Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	731883	OT 4-1883 DC 24 V	1

Input	**DC 24 V**
Input voltage range	7.0 – 30.0 V
Rated current	12.0 mA
Interrupting voltage	–
Protection device	Reverse diode
Status indication	LED yellow
Rated frequency	–
Output	
Switching element	Triac, N/O contact
Min. switching voltage	AC 50 V
Max. switching voltage	AC 250 V
Min. switching current	AC 20 mA
Max. switching current	AC 1.5 A (Derating)
Inrush current	AC 30 A (1 s)
Leakage current	<5 mA
Switch-on delay	1 ms
Switch-off delay	20 ms
Switching frequency	<20 Hz
Clearance/creep. dist. (contol/load side)	>8.0 mm
Protection device output	Varistor
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 70 °C
Storage temperature range	-25 °C – 70 °C
Dimensions (w × h × d)	11.5 × 60.0 × 67.0 mm
Weight (kg/piece)	0.030
Approvals	cULus in preparation
Termination	Screw terminal: 0.25–2.5 mm^2

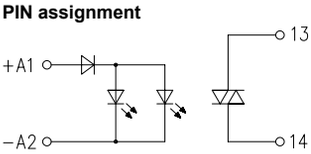
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
Tag holder 9×20 mm	white	681315	BZT -0920	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 9 x 20 mm (Sheet with 270 labels)		681032	LEB-0924	1

DC Solid State Relay, 2 wire
Switching element AC 250 V; 1A
Screw terminal

Dimensions



PIN assignment



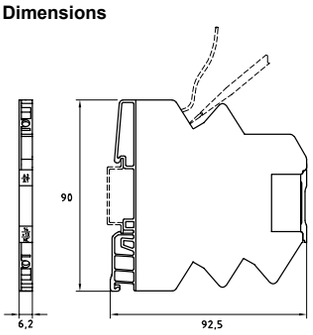
Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V	762056	OT 6-2056 AC 230 V	4

Input	**DC 24 V**
Input voltage range	19.2 – 30.0 V
Rated current	18.0 mA
Interrupting voltage	<12 V
Protection device	Reverse voltage protection
Status indication	LED yellow
Rated frequency	–
Output	
Switching element	Triac, N/O contact
Min. switching voltage	AC 18 V
Max. switching voltage	AC 240 V
Min. switching current	AC 5 mA
Max. switching current	AC 1 A
Inrush current	–
Leakage current	–
Switch-on delay	0.1 ms
Switch-off delay	10 ms
Switching frequency	<20 Hz
Clearance/creep. dist. (contol/load side)	>5.5 mm
Protection device output	–
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 70 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 84.0 × 80.0 mm
Weight (kg/piece)	0.029
Approvals	–
Termination	Screw terminal: 0.25–2.5 mm^2

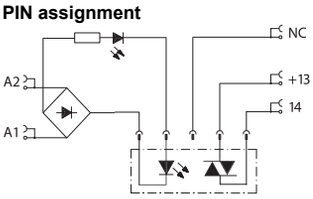
Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
Jumper comb 24pole, 26A	blue	760801	BK 6-0801	5
tag holder 4×11 mm	white	681313	BZT 0411	100
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

AC/DC Solid State Relay, 2 wire, pluggable
Switching element AC 275 V; 750 mA
Screw-/Spring terminal

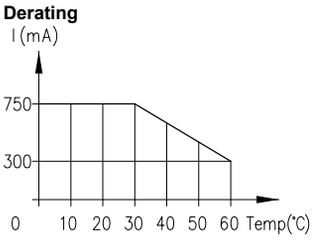
Dimensions



PIN assignment



Derating



Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	AC/DC 24 V	760691	OT 7-0691 AC/DC 24 V	5
Spring terminal				
Rated voltage	AC/DC 24 V	761691	OT 7-1691 AC/DC 24 V	5

Input	**AC/DC 24 V**
Input voltage range	16.8 – 30.0 V
Rated current	14.0 mA
Interrupting voltage	<5 V
Protection device	Bridge rectifier
Status indication	LED yellow
Rated frequency	50-60 Hz
Output	
Switching element	Triac, N/O contact
Min. switching voltage	AC 12 V
Max. switching voltage	AC 275 V
Min. switching current	AC 5 mA
Max. switching current	AC 750 mA (Derating)
Inrush current	80 A (10 ms)
Leakage current	1.5 mA
Switch-on delay	10 ms
Switch-off delay	10 ms
Switching frequency	50 Hz
Clearance/creep. dist. (contol/load side)	>5.5 mm
Protection device output	–
General	
Housing material	PPE
IP rating	IP 20
Field installation	rail TS 35 (EN 50022)
Insulation voltage input/output	4 kVeff
Safe isolation	yes
Operation temperature range	-25 °C – 60 °C
Storage temperature range	-40 °C – 80 °C
Dimensions (w × h × d)	6.2 × 90.0 × 92.5 mm
Weight (kg/piece)	0.030
Approvals	cULus
Termination	Screw-/spring terminal 0.5–1.5 mm^2

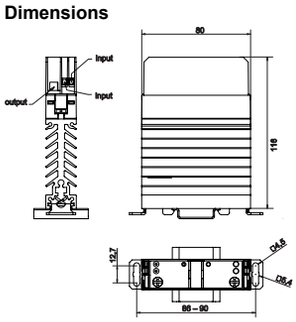
Accesories	**Colour**	**2-pole**	**3-pole**	**4-pole**	**8-pole**	**16-pole**	**Pkg. units**
Jumper comb 6A	red	762802	762805	762812	762822	762832	5
Jumper comb 6A	white	762803	762806	762813	762823	762833	5
Jumper comb 6A	blue	762804	762807	762814	762824	762834	5

Accesories	**Colour**	**Article number**	**Type**	**Pkg. units**
SSR-module		768010	SSR-DC 12 V/AC 275 V; 0,75 A	20
tag holder 4×11 mm	white	681313	BZT -0411	100
Isolation plate		760809	TP 7-0809	5
Labels for laser printer A4 unpunched		681031	LEB-A4	1
Labels for laser printer 4.23 x 11 mm (Sheet with 1056 labels)		681034	LEB-0411	1

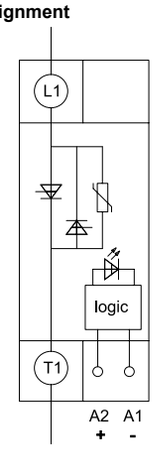
DC Solid State Relay, 2 wire
Switching element AC 6600 V; 25 A; Zero crossing switch
Screw terminal

Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V / 25 A	716080	OT-6080 DC 24 V	1
Input		**DC 24 V / 25 A**		
Input voltage range		4.0 – 32.0 V		
Rated current		10.0 mA		
Interrupting voltage		2 V		
Protection device		–		
Status indication		LED green		
Rated frequency		–		
Output				
Switching element		Thyristor, N/O contact		
Min. switching voltage		AC 48 V		
Max. switching voltage		AC 660 V		
Min. switching current		AC 100 mA		
Max. switching current		AC 25 A (Derating)		
Inrush current		AC 250 A (10 ms)		
Leakage current		<1 mA		
Switch-on delay		10 ms		
Switch-off delay		10 ms		
Switching frequency		<10 Hz		
Clearance/creep. dist. (contol/load side)		–		
Protection device output		Varistor		
General				
Housing material		Plastic, flame resistant according to UL-94-V0		
IP rating		IP 20		
Field installation		rail TS 35 (EN 50022)		
Insulation voltage input/output		4 kVeff		
Safe isolation		yes		
Operation temperature range		-25 °C – 70 °C		
Storage temperature range		-40 °C – 80 °C		
Dimensions (w × h × d)		22.5 × 116.0 × 80.0 mm		
Weight (kg/piece)		0.260		
Approvals		–		
Termination		Screw terminal: 0.25–4.0 mm^2		

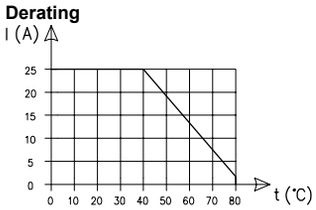
Dimensions



PIN assignment



Derating

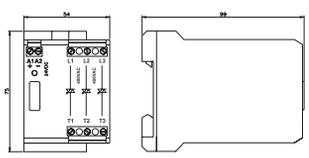


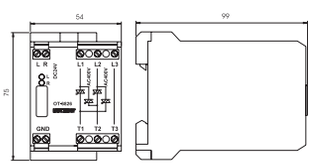
DC Solid State Relay, 3phasig
Switching element AC 400 V; 3.4 A / 3.8 A, Zero crossing switch
Screw terminal

Description		Part-No.	Type	PU
Screw terminal				
Rated voltage	DC 24 V / Protection	716825	OT-6825 DC 24 V	1
	DC 24 V / Reversing contractor	716826	OT-6826 DC 24 V	1

Input	DC 24 V / Protection	DC 24 V / Reversing contractor
Input voltage range	17.0 – 30.0 V	
Rated current	25.0 mA	
Interrupting voltage	<8 V	
Protection device	Supressor diode	
Status indication	LED green	
Rated frequency	–	
Output		
Switching element	Thyristor, N/O contact	
Min. switching voltage	AC 24 V	
Max. switching voltage	AC 400 V	
Min. switching current	AC 100 mA	
Max. switching current	AC 3.4 A	AC 3.8 A
Inrush current	AC 120 A (10 ms)	
Leakage current	<1.7 mA	
Switch-on delay	5.5 ms	115 ms
Switch-off delay	10 ms	
Switching frequency	<10 HZ	<5 Hz
Clearance/creep. dist. (contol/load side)	> 5.5 mm	> 5,5 mm
Protection device output	Varistor	Varistor, RC combination
General		
Housing material	Plastic	
IP rating	IP 20	
Field installation	rail TS 35 (EN 50022)	
Insulation voltage input/output	0,5 kVeff	
Safe isolation	yes	
Operation temperature range	-25 °C – 55 °C	
Storage temperature range	-40 °C – 80 °C	
Dimensions (w × h × d)	54.0 × 99.0 × 75.0 mm	
Weight (kg/piece)	0.285	
Approvals	cULus, GL in preparation	
Termination	Screw terminal: 0.5–4.0 mm^2	

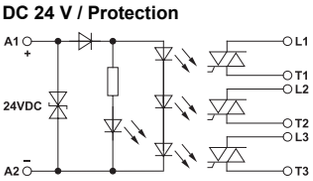
Dimensions



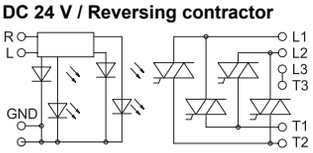


PIN assignment

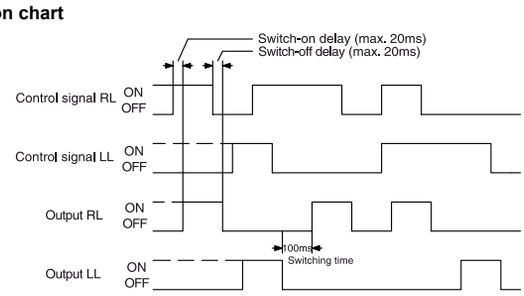
DC 24 V / Protection



DC 24 V / Reversing contractor



Action chart



Lutze Interface technology

Supression Technology, Module and Interface Technology, Power Supplies

Please see our catalogue No. 3 for our full interface range

www.lutze.co.uk

LUTZE

Basic principles - Microcompact coupling modules

The Lutze switching module product family has been developed with the goal of offering the user a maximum of functionality in a minimum of space. For example the 6.2-mm wide relay coupling modules can handle switching currents of up to 6 A without problems. The products offer a wide range of possibilities ranging from relay interfaces to electronic semiconductor coupling elements.
The application emphasis of the Microcompact family is the interface between the automation device (the PLC or the PC) and the machine peripherals. Since a standard PLC output is often not powerful enough to activate a hydraulic valve, Microcompact modules can be used to perform this task. A wide range of input voltages are available for both electromechanical or semiconductor relays (optocouplers) depending on the application.

Ultra-slim Microcompact modules are available with either standard wiring configuration, or 'TOP' connection technology allowing the wiring to be easily introduced from the front of the module promoting error free wiring.
Minicompact products offer switching devices in the lowest profile housings. Starting at just 12.5mm width, this product range offers a choice of output types in case sizes just 60mm high by 67mm deep.
The Lutze Microplug product range provides multi-pole switching in a conventional 'plug-in' relay and base combination, complete with indication and suppression module. All products are easily mounted by simply snapping on to standard DIN rail.

Easy wiring
Connections with the same potential, such as ground or power cables (PLC ground, load return cable, sensor supply, etc.) can be looped through, using wiring comb profiles or pre-customised daisy chains. Microcompact and Minicompact modules are available with either screw-type or spring-loaded terminal technology. If spring-loaded terminals are used, crimp-on ferrules and awkward screw-connecting can be eliminated.

Models
All relay modules are designed to comply with applicable regulations and standards. This includes adherence to spacing for safe isolation (creepage and clearance distances are > 5.5 mm), the rated isolation voltage (see product specifications), overvoltage category III, and a withstand surge voltage of 6 kV. In addition, the housings are designed so that mechanical and climate factors in an industrial environment do not destroy the plastics used. LUTZE uses mainly Luranyl (PPE).

Depending on the application, modules with different contact materials are available. Input module have mostly hard gold-plated contacts with 6 µ hard gold plate for switching even the smallest currents and voltage; some are suitable for dry circuits. Output modules feature normal contact material, e.g. AgSnO2, suitable for switching medium to large currents (typically 0.5A and above).

Microcompact plug-in relays
In the installation width 6.2 mm, the relay module is plug-in, which means that during preventive maintenance or in the event of faults the relay can be replaced without having to disconnect the wiring.
The TOP wiring for screw terminals used in this housing model makes wiring considerably easier, reduces the space requirement for the cable feed and enables error-free wiring.

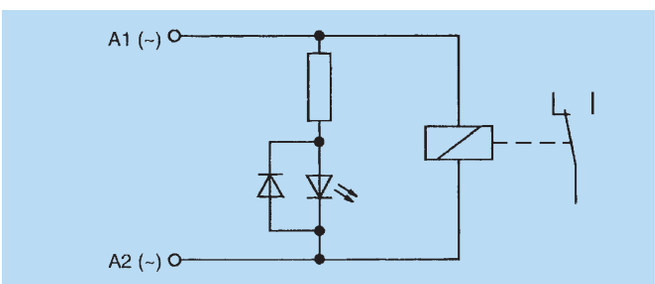
Basic principles - Relay modules

General

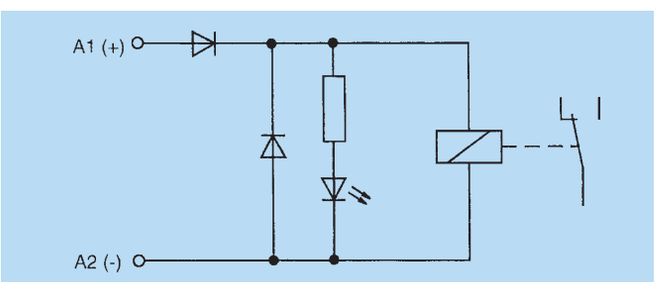
Electromechanical relays are often used as interface modules between peripherals and control units. For these applications you will find modules for the different voltage and power levels in the LUTZE range of products. As a general principle, electromechanical relays are divided into two main groups: monostable and bistable relays. In a monostable relay, the contacts return to the stable condition after the excitation stops. Bistable relays remain in their momentary state after shutdown. The relay modules featured in this catalogue are all equipped with monostable relays.

Excitation side

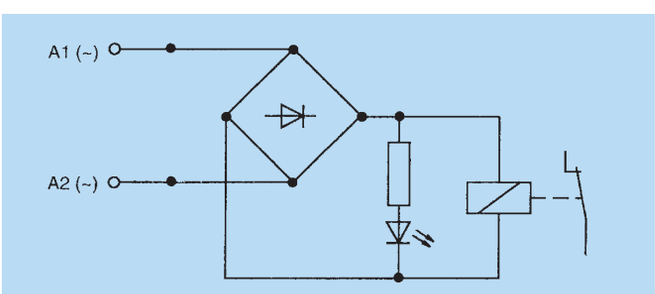
Depending on the relay used and the activation type, there are different input circuits. For pure alternating current (AC), only a visual switching status indication is used. This switching status indication is achieved typically with a diode circuit.



For a pure DC input, a recovery diode parallel to the coil is the most important element. This diode limits the inductive switch-off voltage to about 0.7 V in order to protect the connected control electronics. To increase the connection safety with regard to the recovery diode, a polarity reversal protection diode is added to the input of the module.

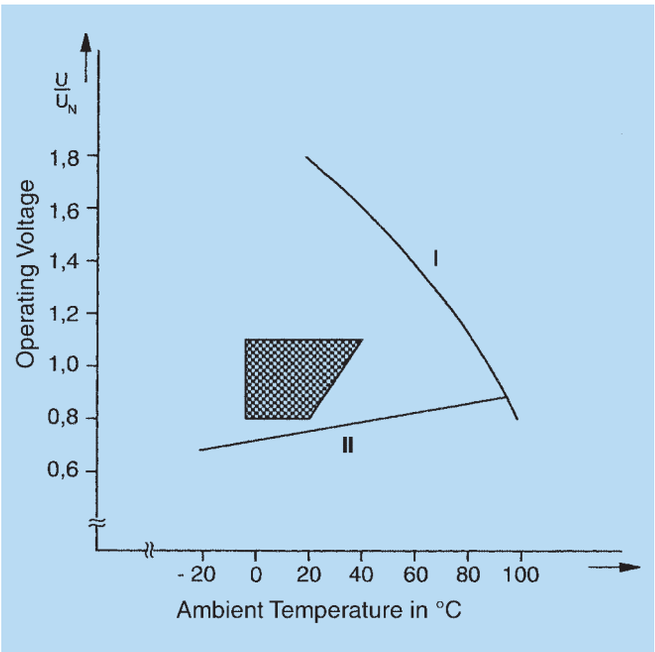


If a bridge rectifier is added to the input circuit, either AC or DC voltage can be applied for activation. Two diodes of the bridge circuit are used as recovery diodes and limit the inductive voltage to 1.4 V. Moreover, polarity reversal of the activation is no longer a problem.



Operating voltage range

The ambient temperature of the application site has a major influence on some of the operating parameters. Among other things, it affects the values for pick-up and release voltages. The following diagram shows the behaviour of the operating voltage as a function of ambient temperature. The operating range of the relay compliant with IEC 255 / DIN VDE 0435 is cross-hatched.



Principle of the flow of operating voltage in a relay

I. Maximum permissible voltage at 100% duty cycle
(sustaining the coil limit temperature)
II. Minimum response voltage

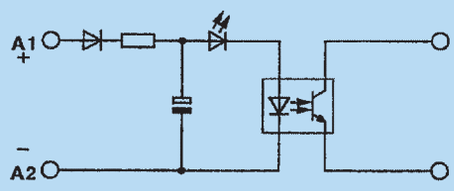
Contact side, output level

The large number of applications in a wide range of industrial fields makes it necessary to customise the relay to the application by choosing the right contact material. You will find details of the contact materials with their current carrying capabilities in the technical details for each product.

Basic principles - Optocouplers

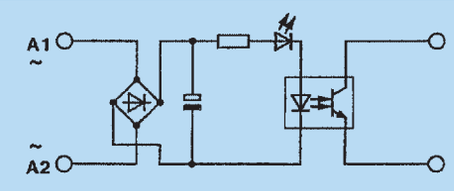
Activation
LUTZE offers optocoupler modules as interface modules in different voltage and power classes. This makes it possible to use the most suitable module to customise the control system and the process peripherals in different industrial applications. Since the actual optocoupler component, due to its design, is limited to a specific operating range, the customizing must be achieved via suitable input circuits. Depending on the circuit layout, current consumption can range from 1 to 12 mA and the voltage range from 5 V to 230 V. In doing so, a distinction must be made between inputs for DC and AC.

DC input (DC-In)
Customizing is achieved through electronics that are matched to the desired input voltage range. At the same time, a polarity reversal protection diode offers protection in the event of accidental incorrect power supply connection. Specially matched filters effectively suppress high-frequency interference



Wiring principle, DC input

AC input (AC-In)
The optocoupler element needs stable DC voltage for effective activation. A rectifier with a downstream equalising capacitor is connected to the AC input. The generated control voltage then switches the optocoupler, similar to the DC version. With the AC version, it should be taken into account that, as a rule, the switching frequency of the coupler is generally less than half of the input/ power cable frequency of the AC input. A higher switching frequency causes continuous connection due to the equalising capacitor.

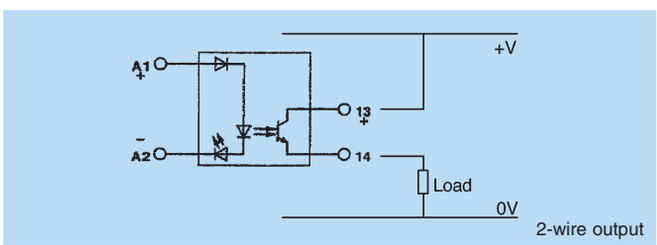


Wiring principle, AC input

Load output
Each application case and each load type make different demands on the optocoupler output. The main criteria here are:
- Power amplification
- Adaptation to the switching voltage and current (AC/DC)
- Short-circuit protection
- Polarity reversal protection

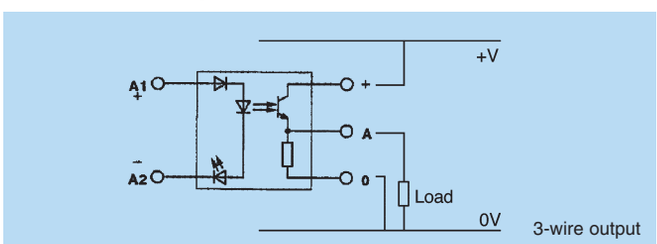
DC output (DC-Out)
One or more semiconductor stages complement the optocoupler element in order to achieve the necessary output power. This is achieved internally; on the outside, the connection terminals are designed to be the same as in conventional connections. For flawless function, attention must be paid to ensuring the correct polarity of the connections. To select the right optocoupler module, the following sequence is recommended: operating voltage range, maximum continuous current, and type of output circuit.

1. Operating voltage range
Determine the minimum and/or maximum voltages to be switched. The lower voltage must be maintained for reliable function; the upper limit must not be exceeded in order to protect the output transistor.
2. Maximum continuous current
The maximum continuous current depends on the power semiconductor used and the environment conditions. Continuously exceeding the value causes the output semiconductor to fail due to overheating. A temporary significant overload has the same effect. Since the output current depends on the temperature, it may be necessary to derate the output, depending on the ambient temperature of the optocoupler. For details contact the Lutze technical team.



2-wire output

3. Type of output circuit
The 2-wire output is comparable to a mechanical contact. However, the polarity of the connections is firmly assigned and must be adhered to for safe function. A 3-wire output, on the other hand, is potential-specific. For safe operation, both potentials must be connected to the voltage source on the output side. In the switched-off state, a permanent connection to the -ve potential (ground) is established. The advantage is an almost constant internal resistance.

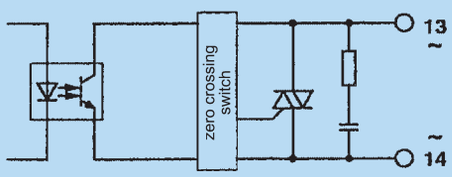


3-wire output

Basic principles - Optocouplers

AC output (AC-Out)

In order to switch AC voltages, a semiconductor element for AC voltage applications (triac) is connected to the load side of the optocoupler element. Here, as with the DC output, the same restrictions apply regarding maximum operating voltage and continuous current range as a function of the ambient temperature. In addition, for the AC voltage versions, the peak turn-off voltage of the triac (e.g., 800 V) must be adhered to. In order not to destroy the triac, it must not be exceeded during voltage fluctuations or peaks. This means that all switching inductive elements must have the appropriate suppression/protection devices.



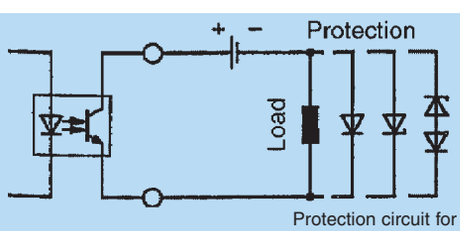
Principle wiring diagram, AC output

Protection circuits

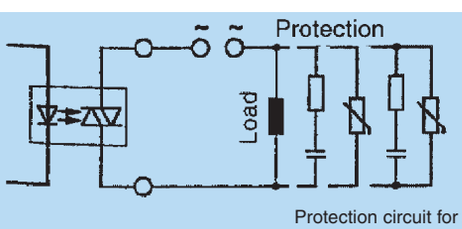
Switching inductive devices, such as contactors, valves, motors, etc., always causes high induction voltages with a sharp rise or pulse at the moment they are shut off. The voltage, which can reach very high amplitudes, is also superimposed on to a more or less wide high-frequency spectrum. Electronic components are especially sensitive to this. This means that general protection against these interruptions is necessary. Protection circuits are wired parallel to the load in order to attenuate damaging inductive voltages to a harmless level. Depending on the optocoupler design and application (load), different methods can be used.

– RC modules for AC applications
– Varistors for AC and DC operation
– Recovery/suppressor diodes for DC applications

With the right protection circuit for each application, LUTZE guarantees problem-free and safe function of all optocoupler modules used.

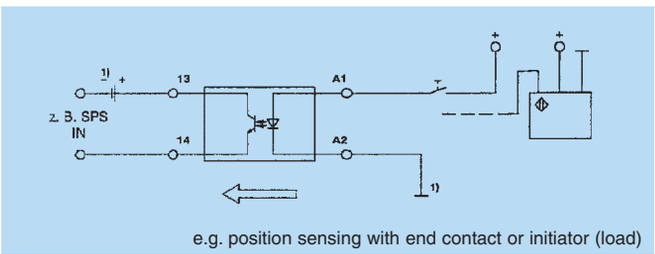


Protection circuit for DC output

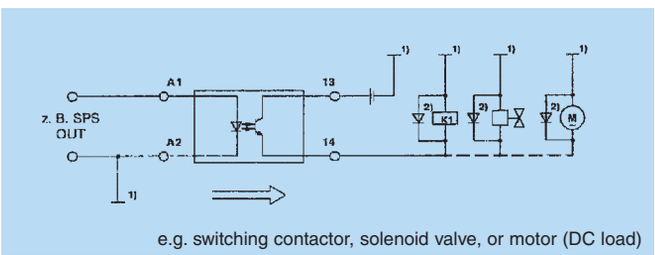


Protection circuit for AC output

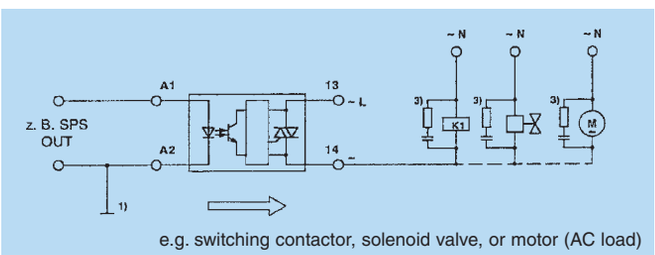
Notes on application



e.g. position sensing with end contact or initiator (load)



e.g. switching contactor, solenoid valve, or motor (DC load)



e.g. switching contactor, solenoid valve, or motor (AC load)

Terminology

Rated (maximum switching) current: This is the highest current that a device can continuously carry within the prescribed temperature limits. In virtually all cases the Rated current is also the current that, when associated with the Rated switching voltage, gives rise to the Rated load (AC1).

Rated (maximum switching) voltage: This is the switching voltage that when associated with the Rated current gives rise to the Rated load (AC1). The Rated load is used as the reference load for electrical life tests.

Rated isolation voltage
The RMS or direct voltage value of the highest constant voltage occurring between any two active parts of a current circuit if the device is used for its intended purpose. This value must be specified for each circuit of a device, such as control side, load side, and for all circuits in relation to each other, e.g. control side versus load side.

Cage clamp
Screwless connection technology for solid, multi-strand, and fine-strand copper wires with nominal cross sections of 0.08 mm^2 to 2.5 mm^2. The cage clamp spring provides sufficient contact pressure to create an airtight contact surface between wire and bus bar. This protects the transition point from corrosive elements. Cage clamp connections are suited for high voltage applications as well as for the transmission of voltages and currents in the mV and mA ranges. The advantages of this connection technology are a notably shorter wiring time, ease of maintenance, and better availability and reliability of the devices.

CE labelling
CE labelling (CE stands for "Conformité Européenne") is a prerequisite for the sale of many electrical products within the European Union. It is an indicator for government supervisory agencies that the product meets the basic requirements of the relevant EU Directives (laws). Based on existing directives, the Low Voltage Directive 73/23/EEC applies to the LUTZE interface modules. Devices compliant with this directive must be identified.

Duty cycle
Ratio of on-state time (under load) to operating time, given as a percentage. The duty cycle has an impact on the thermal behaviour of the interface modules. A relay coil, for example, reaches its final temperature after 30 minutes of excitation.

Inrush peak current
The highest current at the moment of switching on. In particular, this should be taken into account if capacitors, heater windings or lights are switched. Since the inrush peak current can be a multiple of the constant current (switching current), it is indicated with a time limit.

Switch-on time (rise time)
a) For make contacts: the time between control voltage turn-on and closing of the contact.
b) For break contacts: the time between control voltage turn-on and opening of the contact.
c) For SPDT contacts: the time between control voltage turn-on and contacting the opposite contact.
d) For semiconductors: the time between control voltage turn-on and switching through the semiconductor

Switch-off time (fall time)
a) For make contacts: the time between control voltage turn-off and opening of the contact.
b) For break contacts: the time between control voltage turn-off and closing the contact (not including bouncing time).
c) For SPDT contacts: the time between control voltage turn-off and contacting the opposite contact.
d) For semiconductors: the time between control voltage turn-off and complete off-state of the semiconductor.

DC load limit curve
Relation of DC current and DC voltage during contact switching of ohmic loads and a 10 ms light arc at the contact. The load limit curve is a DC limit cut-off capacity which does not make any claims regarding the life of the contact.

Relay with positively driven contacts, or safety relay
A relay with positively driven contacts must satisfy the requirements of a very specific safety EN standard. Such relays are used within safety systems to guarantee their operational safety and reliability, contributing to a safe working environment. A Safety Relay must have at least one NO and one NC forcibly guided contact. These contacts must be mechanically linked, such that if one of the contacts fails to open, the other is prevented from closing (and vice versa). This requirement is fundamental in identifying the non-correct operation of a circuit. For example, a failure of a NO contact to open (for example, by welding closed) is identified by the failure of the NC from closing, therefore signalling an operational anomaly. EN 50205 is the standard that establishes the requirements for relays with forcibly guided contacts, and it describes two types:
• Type A: where all the contacts are forcibly guided
• Type B: where only some contacts are forcibly guided

SSR - Solid State Relay
A relay utilising semiconductor technology for load switching. These relays are not subject to burning of contacts and there is no migration of contact material. SSRs are capable of very high speed switching and virtual unlimited life if used within the specified parameters.

Terminology

Contact materials
A variety of different contact materials have been developed for different switching applications with contact switchgears. The resulting properties and applications of the most common contact materials are shown in Table 1.1. Since there is no “ideal contact,” the material is usually determined by the most important required properties.
Hard gold plated contacts have a 2-3 µm thick, non-porous gold layer. They are mostly used to switch small voltages and currents in the signal load range and in atmospheres containing sulphur. Since underneath the gold layer there is usually a contact material suitable for switching high-voltage loads, interface modules with hard gold plated contacts can be used as so-called universal relay modules. However, it must be considered that once the module has been used beyond the capacity limit of the gold plating, the module can no longer be used in a switching range below the capacity limit. The capacity limit indicates the current or voltage value that can be switched without destroying the gold layer.

Storage temperature
Temperature range in which the module may be stored without dew formation.

Cable lengths
If long cables (e.g. over 40 m for rated control voltage of 230 VAC) are needed for the control circuitry of interface modules, faultless function of the products is only possible if the following factors are taken into consideration:
The permitted voltage drop on the control cable must not exceed 5% of the rated voltage. The higher the rated control voltage and the larger the cross section of the control cable, the longer the control cables that can be used. When increasing the rated control voltage of interface modules with AC activation, the effect of the cable capacitance must be considered.
Upon opening of the control circuit, there is a potential difference between the cables, depending on the cable length. The single conductors, which have a different voltage, act as capacitors. Due to this capacitance, current flows through the interface module even if the control circuit is open. If this current is high enough, it is possible that the relay picks up or the status indication remains on. The following measures can be taken against the interference of cable capacitance:
- Use of DC voltage as control voltage
- Use of a lower control voltage
- Parallel connection of resistive or capacitive (low loss) additional consumer units

Creepage & clearance distances
The creepage & clearance distances for interface modules are calculated on the basis of VDE standard 0160 (pr EN 50178). The clearance distance is the shortest distance between two points, measured along a tightened thread. The creepage distance is the shortest distance between two points along an insulating surface along which a current can flow. A join between two parts of insulation material is considered part of the insulation material surface.

Maximum switching frequency
Maximum possible number of switching operations per time unit (5 1/s, 360 1/h) that can be performed during operation. The relay can only be operated a short time at its maximum switching frequency, as otherwise its life will be drastically shortened due to mechanical and thermal influences. With semiconductor couplings, it must be noted that the maximum switching frequency refers to ohmic loads. When switching inductive loads, the maximum switching frequency must be reduced. The inductive turn-off energy can, if the frequency is high enough, lead to capacity overload of the internal protection of the device, thus destroying it.

Mechanical life
Number of operations without contact load during which the relay remains functional.

Rated control voltage
Indicates the voltage on the load side and, depending on the execution of the interface module; can be a DC or AC voltage value.

Bouncing time
The closing of electrical contacts generates an impulse that causes the contacts to open and close several times over a certain period of time (bouncing time). This impulse, which reduces the kinetic energy of the movable contact part, is called bouncing. Bouncing reduces the life of the contact, since the load is switched during each bounce.

Terminology

Contact material	Corrosion due to		Typical properties	Typical applications	Application area
	Sulphur	oxidation			
Pure gold	no	no	Best corrosion resistance, rarely used as solid metal since it is too soft, danger of cold bonding	In layers with a thickness of _< 1 µm only for gold-plating of bearings. Economical contact protection in atmospheres containing sulphur at a layer thickness of	at least 2-3 µm
Hard gold AuNi1 AuCo1	no	no	Very good corrosion resistance, low and constant contact resistance at low levels of switching power	Dry switching circuits, use in atmospheres containing sulphur, at least 2-3 µm	µV...60 V µA...0.2 A
Rhodium	no	no	As a galvanised coating (0.1...1 µm) mainly on wedges of reed contacts	Small loads at high switching frequencies, long contact life	µV...150 V µA...2 A
Gold-silver AuAg10	no	no	Low and constant contact resistance at low levels of switching power	Dry switching circuits, measuring circuits, incoherent speech channels	µV...60 V µA...0.3 A
Gold-nickel AuNi5	no	low	In a broad load range, no contact material migration; small contact resistance; light arcs occur easily; at low levels of switching power, higher number of cycles and contact follow; interference due to fretting debris possible; very expensiv	Use in small and medium voltage and current ranges	100 mV...60 V 1 mA...0.3 A
Silver palladium AgPd30	no	no	Better resistance to oxidation than silver; harder; lower burn; expensive; constant contact resistance	Signal lines with medium loads, coherent speech channels	>1 V 1 mA...1 A
Fine-grain silver AgNi0,15	yes	no	Higher mechanical strength; lower bonding tendency and higher burn resistance than silver; relatively small contact resistance	Universal use at medium loads that are higher than pure silver	>12 V 1 mA...1 A
Hard silver AgCu3	yes	When switching	Higher mechanical strength; lower bonding tendency and higher burn resistanc ethan fine-grained silver but higher contact resistance	Use at medium loads	>12 V >10 mA...10 A
Silver-nickel AgNi 90/10	yes	no	Higher burn resistance; lower bonding tendency; higher contact resistance	Especially suited for switching inductive loads	>17 V > 50 mA
Silvercadmium oxide AgCdO10	yes	no	Low bonding tendency. high burn resistance at high levels of switching power	Switching circuits with medium to high loads, DC circuits	>12 V > 100 mA
Silver-tin oxide AgSnO10	yes	no	Low bonding tendency. very high burn resistance at high levels of switching power, minor contact material migration	Switching circuits with high switch-off/ switch-on loads, DC circuits	>17 V > 50 mA
Tungsten W	no	yes	Highest melting point, high resistance to burn; for high switching frequency at low duty cycles	Switching circuits with the highest switchoff / switch-on loads	>60 V >1 A

Table 1.1

Dropout voltage
Indicates the maximum control voltage at which a relay will release to its de-energised position.

Switching power
Sum of switching current and switching voltage. With relay couplings, care must be taken not to exceed the upper or lower limit of the switching voltage, switching current, or switching power. When switching DC, the switching power is determined by the DC load limit curve.

Switching voltage
Voltage occurring between the contacts or at the switching transistor, prior to closing or after opening the circuit, once transient phenomena has subsided.

Switching current
Current that can be switched by the relay contact or switching transistor under normal operating conditions. For semiconductor couplings, a reduction of the switching current for reasons of power loss due to ambient temperature might be necessary (de-rating). The appropriate current and temperature values can be found in the relevant de-rating diagram with each product.

Switching capacity
Current that can be switched on and off by an interface module under predetermined conditions. For the MicroCompact relay couplings, these conditions are defined by usage categories compliant with EN 60947-5-1:

Usage category	Type of current	Typical application case
AC-12	**Alternating**	**Switching resistance loads**
AC-15	**Alternating**	**Switching solenoids**
DC-12	**Direct**	**Switching resistance loads**
DC-13	**Direct**	**Switching solenoids**

In order to achieve a life exceeding the 6050 switching cycles required in the standard with usage categories AC-15 and DC-13, it is vital that inductive loads have a suitable suppression unit.

Terminology

Screw terminals
The screw terminals used in the Lutze interface modules allow the connection of fine-strand conductors with a cross section of up to 2.5 mm² and one-wire conductors with a cross section of up to 4 mm². They comply with EN 60999 and feature captive screws. A regular screwdriver (blade 3.5 x 0.8 mm) is needed for activation.

Protection class compliant with DIN 40 050
The protection class of a device defines the protection against touching and against penetration of solid particles and water. Internationally, the protection class is expressed as a letter and number combination (IP = International Protection). The first digit defines protection against touching and foreign particles; the second digit indicates the water protection grade.

Protection circuits
With interface modules, a distinction is made between input and output side protection circuits. The protection circuit on the input side can have the following protective features:
- Reverse-connect protection by means of polarity reversal protection diodes or bridge rectifiers
- Protection against power surges at electronic inputs, e. g. through varistors

Protection circuits on the output side are usually used only with semiconductor couplings for intrinsic protection of the electronic switching element. They certainly do not replace the mandatory protective circuits for inductive loads.
With relay couplings, internal contact protection has been omitted, since ideal suppression is not possible due to the wide switching capacity range, and suppression must take place at the source of the interference.

Safe isolation
Safe electrical isolation guarantees potential-free transmission of signals between different machine parts and systems. According to VDE 0160 (prEN 50178), safe isolation is required for extra-low voltage circuits (SELV or PELV) and other current circuits. It is made possible through design measures, double or reinforced insulation of the air and creep distances, as well as through the use of special elements that meet safe isolation requirements. The need for special elements is met in Lutze interface modules through the use of the following disconnect elements:
- Relays, tested according to VDE 0106
- Optocouplers compliant with VDE 0884

Overvoltage category
Determines the withstand surge voltages for the respective rated power cable voltages for AC voltage systems compliant with IEC 38. For LUTZE interface modules. overvoltage category III compliant with DIN VDE 0110 applies Overvoltage category III is defined as follows:
"Operating equipment of overvoltage category III is intended for use in systems, or parts thereof, where lightning overvoltages need not taken into account, but which are subject to special requirements with regard to the safety and availability of the operating equipment or the networks depending on it ..."

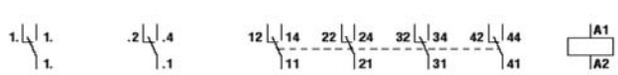
Ambient temperature
Temperature range in which the module can be operated under specified operating conditions. Dew formation is not permissible. The contamination of a device's air and creep distances over its service life must be taken into account through its degree of contamination, as defined by VDE 0160 (prEN 50178). Degree of contamination 1 to 4 defined as follows:

1. No or only dry, non-conducting contamination occurs. The contamination has no influence.
2. Normally, only non-conducting contamination occurs. Occasionally, however, brief conductance can be expected due to dew formation when the device is not in operation.
3. Conducting or dry, non-conducting contamination occurs, which becomes conductive since dew formation is expected.
4. The contamination results in permanent conductivity, e.g. caused by conductive dust, rain, or snow.

Contact specification

Symbol	Configuration	
	Make contact (normally open)	NO
	Brake contact (normally closed)	NC
	Changeover	CO

Terminal marking
European standard EN 50005 recommends the following numbering for the marking of relay terminals:
- .1 for common contact terminals (e.g. 11, 21, 31 ...)
- .2 for NC contact terminals (e.g. 12, 22, 32 ...)
- .4 for NO contact terminals (e.g. 14, 24, 34 ...)
- A1, A2, for control input



number configuration number relay with 4 poles

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