

Manufacturer's Declaration

This product is intended for installation in a machine or system, based on the machine directive 2006/42/EC.

It is forbidden to start use of the product until the machine or system into which it should be built is operating in accordance with the EC directives.

The product corresponds to the low voltage directive 2006/95/EC.

Safety Regulations

Danger!

To prevent injury or damage, only professionals and specialists should work on the devices, following the relevant standards and directives. Please read the Installation and Operational Instructions carefully before installation and initial operation of the device.

- Danger of death on touching voltage-carrying cables and components.
- Danger of device failures caused by short circuits or earth short circuits at the terminals.
- Electronic devices cannot be guaranteed fail-safe.



Warning:

Without a conformity inspection, this product is not suitable for use in areas where there is a high danger of explosion. This statement is based on directive 94/9/EC (ATEX directive).

Application

Rectifiers are used to connect DC units to alternating voltage supplies, for example electromagnetic brakes and clutches (ROBA-stop®, ROBA-quick®, ROBATIC®), electromagnets, electrovalves, contactors, switch-on safe DC motors, etc.

Function

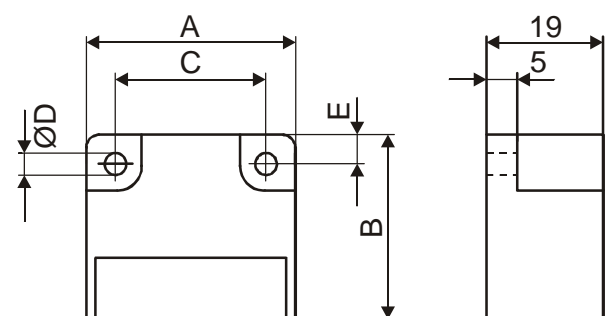
The AC input voltage is rectified in order to operate DC voltage units. Also, voltage peaks, which occur when switching off inductive loads and which may cause damage to insulation and contacts, are limited and the contact load reduced.

Electrical Connection (Terminals)

- 1 + 2 Input voltage
- 3 + 4 Connection for an external switch for DC-side switching
- 5 + 6 Coil
- 7 - 10 Free nc terminals (only for size 2)
When connecting to PELV, only for excess voltage category II.



Dimensions (mm)



Size	A	B	C	ØD	E
1	34	30	25	3,5	4,5
2	54	30	44	4,5	5,0
3/4	64	30	54	4,5	5,0

Accessories: Mounting bracket set for 35 mm rail (EN 50022)
Article No. 1803201

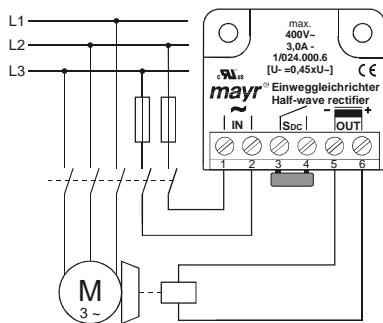
Installation and Operational Instructions for Half-wave Rectifiers and Bridge Rectifiers Type 02_.000.6

(B.02+0006.GB)

Technical Data

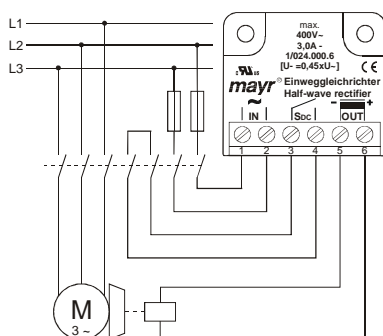
Calculation output voltage	Bridge rectifier		Half-wave rectifier			
	VDC = VAC x 0,9		VDC = VAC x 0,45			
Type	1/025	2/025	1/024	2/024	3/024	4/024
Max. input voltage	230 VAC	230 VAC	400 VAC	400 VAC	500 VAC	600 VAC
Max. output voltage	207 VDC	207 VDC	180 VDC	180 VDC	225 VDC	270 VDC
Output current at ≤ 50 °C	2,5 A	2,5 A	3,0 A	4,0 A	4,0 A	4,0 A
Output current at max. 85 °C	1,7 A	1,7 A	1,8 A	2,4 A	2,4 A	2,4 A
Max. coil capacity at 115 VAC at ≤ 50 °C	260 W	260 W	-	-	-	-
Max. coil capacity at 115 VAC up to 85 °C	177 W	177 W	-	-	-	-
Max. coil capacity at 230 VAC at ≤ 50 °C	517 W	517 W	312 W	416 W	416 W	416 W
Max. coil capacity at 230 VAC up to 85 °C	352 W	352 W	187 W	250 W	250 W	250 W
Max. coil capacity at 400 VAC at ≤ 50 °C	-	-	540 W	720 W	720 W	720 W
Max. coil capacity at 400 VAC up to 85 °C	-	-	324 W	432 W	432 W	432 W
Max. coil capacity at 500 VAC at ≤ 50 °C	-	-	-	-	900 W	900 W
Max. coil capacity at 500 VAC up to 85 °C	-	-	-	-	540 W	540 W
Max. coil capacity at 600 VAC at ≤ 50 °C	-	-	-	-	-	1080 W
Max. coil capacity at 600 VAC up to 85 °C	-	-	-	-	-	648 W
Peak reverse voltage	1600 V	1600 V	2000 V	1600 V	2000 V	2000 V
Rated insulation voltage	320 V _{RMS}	320 V _{RMS}	500 V _{RMS}	500 V _{RMS}	630 V _{RMS}	630 V _{RMS}
Pollution degree (Insulation coordination)	1	1	1	1	1	1
Protection fuse	To be included in the input voltage line					
Recommended microfuse, switching capacity H The microfuse corresponds to the max. possible connection capacities. If fuses are used corresponding to the actual capacities, the permitted limit integral I ² t must be observed.	FF 3,15A	FF 3,15A	FF 4A	FF 5A	FF 5A	FF 5A
Permitted limit integral I ² t	40 A ² s	40 A ² s	50 A ² s	100 A ² s	50 A ² s	50 A ² s
Protection	IP65 components, encapsulated / IP20 terminals					
Terminals	Cross-section 0,14 – 1,5 mm ² (AWG 26-14)					
Ambient temperature	- 25 °C up to + 85 °C					
Storage temperature	- 25 °C up to + 105 °C					
Conformity markings	UL, CE	UL, CE	UL, CE	UL, CE	UL, CE	CE
Installation conditions	The installation position can be user-defined. Please ensure sufficient heat dissipation and air convection. Do not install near to sources of intense heat!					

Connection Example (400 VAC, AC-side switching)



AC-side switching means **low-noise switching**; however, the brake engagement time is longer (c. 6-10 times longer than with DC-side switch-off). Use for non-critical braking times.

Connection Example (400 VAC, DC-side switching)



DC-side switching means **short brake engagement times (e.g. for EMERGENCY STOP operation)**. However, this produces louder switching noises.

Protective Circuit

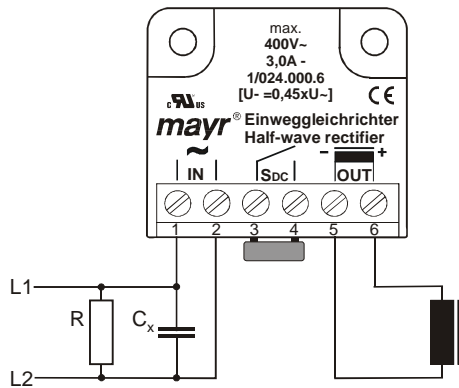


When using DC-side switching, the coil must be protected by a suitable protective circuit according to VDE 0580, which is already integrated in *mayr*[®] rectifiers. Nevertheless, the high voltage induced on circuit interruption produces switching sparks, which lead to contact consumption. Therefore, only use the main contacts of a contactor suitable for inductive loads with a minimum contact opening of 3mm for switching the DC-side contact S_{DC}. Connecting the main contacts in series reduces wear.

EMC-conform Installation

This rectifier does not produce any interference. However, if the device is used in connection with other components (e.g. electromagnetic brakes), the resulting interference can exceed the permitted limit values. Please therefore install the rectifier according to the EMC directives!

The measures described for keeping to the EMC directives are inspected under laboratory conditions and, due to possible deviations, cannot always be automatically transferred, depending on the condition of each machine or plant. The inspection tests the individual components *mayr*[®]-rectifier and *mayr*[®]-brake and is applicable for input voltages of up to 600 VAC.



Installation of a C_x -capacitor into the AC connection:

$C_x = 330 \text{ nF} / 250 \text{ V}$	up to 230 V input voltage
$C_x = 330 \text{ nF} / 440 \text{ V}$	up to 400 V input voltage
$C_x = 330 \text{ nF} / 660 \text{ V}$	up to 600 V input voltage
$R = 0,5 \text{ M}\Omega$	discharge resistor

Warning!

- Please mount the C_x -capacitor directly onto the rectifier (connection terminal)!
- Avoid antennae effect: Keep the supply cables as short as possible: do not form ring or bow shapes with the cables!
- Mount good earth connections onto the metal body of the brake!
- Lay control cables separately from power cables or from strongly pulsating cables!

Standards

DIN EN 61000-6-2:2006-03	Interference immunity
DIN EN 61000-6-4:2002-08	Interferences
VDE 0160 / DIN EN 50178:1998-04	Equipment of high-voltage current plants with electronic machinery materials

Insulation co-ordination acc. VDE 0110 / DIN EN 60664:2003-11
Excess voltage category III

Appointed use:
Acc. DIN EN 50178:1998-04