

32 47124A00

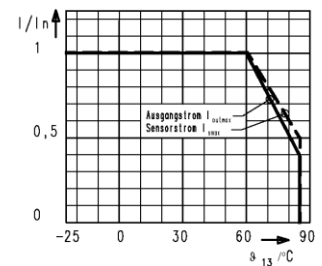
## Hybrid rectifier for bridge and half-wave rectified DC voltage with fast turn-off through current detection

The rectifier with built-in current sensor for fast turn-off is designed for the operation of electromagnetic devices. It ensures fast turn-on and turn-off and delivers both half-wave and bridge rectified output voltage. On the DC side, the output voltage is enabled by the built-in current sensor which measures the AC current of the connected motor. If the motor is stopped, the rectifier turns off on the DC side as soon as the current falls below the turn-off threshold. The turn-off voltage generated by the inductive load is limited. The rectifier is generally suitable for connection in parallel with AC motors. The current sensor must be wired into the motor current path in such a way that the current flow created when the motor operates in generator mode will not pass through the sensor. This is crucial to avoid delayed or impaired DC side switching. The load must be connected to the bridge or half-wave DC voltage output. Simultaneous operation of loads connected to both outputs is not envisaged. The output not in use is live and must be insulated to avoid hazards.

## Technical specifications

<b>Rectifier operating principle</b>		time-controlled changeover from bridge rectification to half-wave rectification				
<b>DC side switching</b>		internal, with motor current detection				
<b>Ambient temperature</b>		(°C)	-25 ... 85	derating for motor and load current: see diagram		
<b>Motor current detection range</b> $I_{\text{Motor-nom}}$		(A AC)	0.27 ... 34			
<b>Transient overload capacity of current detection</b>		( $f(I_{\text{Mn}})$ )	$-7 * I_{\text{Mn}}$			
<b>Turn-off delay</b>		(ms)	20 ms			
<b>Turn-off voltage</b>		(V)	approx. 300 V	at $I = 0,7 \text{ ADC}$		
<b>Maximum permitted energy absorption of switching voltage limitation</b>		(J)	28	for 2 ms		
Type	Rated input voltage $U_1$ (tol.: $\pm 10\%$ ) (40 – 60 Hz) (VAC)	Output voltage BD1(1+) and BD2	Output voltage BD1(2+) and BD2	Max. output current $I_{\text{OE}} / I_{\text{H}}$ (ADC)	Housing W x H x D (mm)	Connections
32 47124A00	220 - 460	$0.445 * U_1$	$0.89 * U_1$	1.2 / 1.2	43 x 55.5 x 33	7 stranded wires, 1.5 mm <sup>2</sup> , fine-wire / to UL 1015 / TEW or UL10086 (AWG 14)

## Permitted current load at ambient temperature



**Protection:**  
IP 67 to EN 60529

**Subject to change without notice.**

## CE

### EMC Directive 2004/108/EEC:

Compliance with the following standards is confirmed:  
 EN 50081-2 (Emission):  
 EN 55011 (VDE 0875, part 11, 1992)  
 Group 1, Class A conducted interference  
 Group 1, Class B radiated interference  
 EN 61000-6-2 (Immunity):  
 EN 61000-4-3 (1997) severity level 3  
 EN 61000-4-4 (1996) severity level 3  
 EN 61000-4-5 (1996) severity level 3

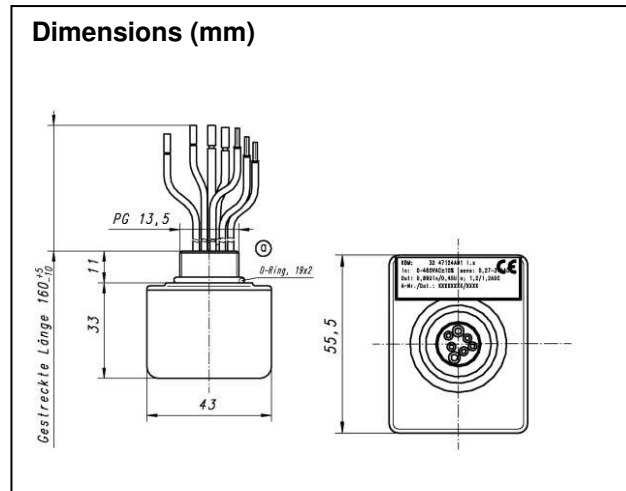
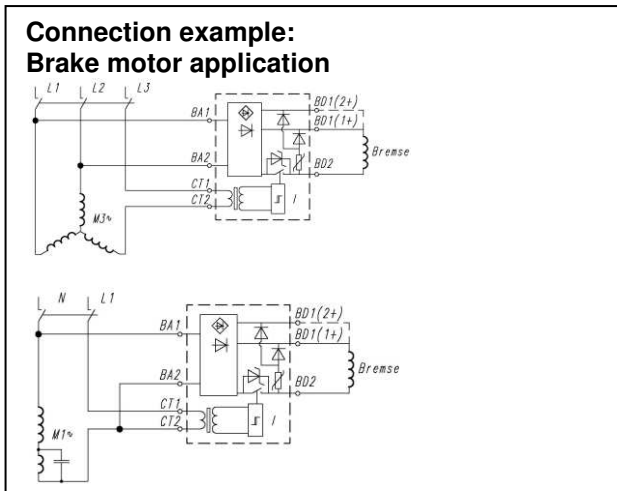
### Low Voltage Directive 2006/95/EEC:

Compliance with the following standards is confirmed:  
 HD 625.1S1 (1996), (VDE 0110) insulation coordination, EN 60529 (1991) IP 54 external mounting

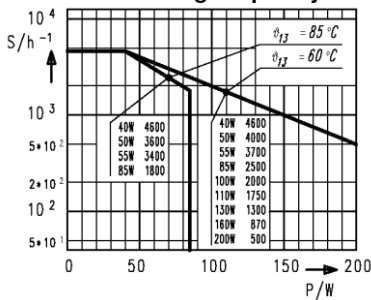
**Machinery Directive 2006/42/EC:** These products are considered components in the sense of Machinery Directive 2006/42/EC and must not be put into service until the machinery in which they are incorporated has been declared in conformity with the provisions of the EC Directives.

## ROHS

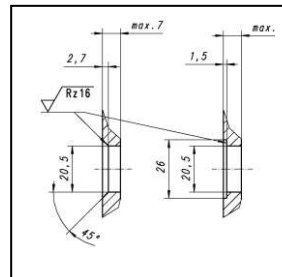
The specified products comply with Directive 2002/95/EC (ROHS).



**Permitted switching frequency**



**Rec. mounting**



**Connections**

Colour	Identification to EN60034-8
Brown	BA1 = ACin
Brown	BA2 = ACin
Red	BD1(1+) = L1 +
Green	BD1(2+) = L1 +
Black	BD2 = L -
Blue	CT1 = sensor 1
Blue	CT2 = sensor 2

**Connection and operation**

Rectifiers with current detection are specifically designed for fast start-up and braking of electric motors.

The terminals marked "BA2" / "CT1" and "CT2" are connected in series with a motor coil in such a way that no current can flow from "CT1" to "CT2" when the motor is turned off (see connection example).

As a result, the switching time will not be affected by any current flow between the motor coil and brake when the motor operates in generator mode as it runs down. The current sensor and rectifier are wired into the same circuit, so rectifier connection is simple and straight forward if the connection examples or equivalent methods are followed.

**Attention!**

The brake is switched off if the current sensor has not been connected correctly or in case of insufficient motor current flow or phase failure. In this case, it must be ensured that continuous motor operation is inhibited when the brake is not released as this would cause damage to the brake, solenoid or rectifier.

Any motor changeover during operation which would cause the current flowing through the "CT" terminals to fall below the minimum switching current for over 10 ms is not allowed as this may cause brake engagement.

The brake rectifier input is between "CT2" and "BA1" and is not potential-separated from the current sensor.

**Attention!**

Switching operations must take place in such a way that the interval time between power off and power on is at least as long as the overexcitation time specified for the rectifier.

The rectifier is not designed as a phase failure detector or similar protection system and must not be used for any such purpose. Frequency converter operation of the motor is not permitted when the rectifier is connected in parallel.

Switching operations with current supply through the "CT" terminals alone without simultaneous involvement of the "BA" terminals is not allowed as this would cause dynamic overloading of the rectifier and inhibit overexcitation when power is reapplied.

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