

DC-Current Monitor Type 8546-HVL (ABB)

8546-HVL



Current monitor Type 8546-HVL

Description

The 8546-HVL current sensor works with 24V DV and measures the magnetic field around a conductor (e.g. a power rail).

The 8546-HVL is designed to monitor a hybrid voltage limiter (HVL). A program specially adapted for the HVL serves to monitor it and to provide error reports.

The polarity of the DC-current does not affect this.

Special technology means that the device remains functional even with strong magnetic fields (e.g. lightning strikes), despite its high responsiveness. The switching threshold of the device (sensitivity) can be set with a potentiometer. If the switching threshold is exceeded by the current, a digital switching output (positive switching around 24V DC) is triggered.

As a basic principle, the device operates with a storing output (latch), i.e. exceeding the threshold once leads to permanent setting of the output. The device is reset by means of a 24V DC reset input. If this input is connected permanently to 24V DC, the latch function is suspended and the output of the device follows the measurement current.

A test button allows the sensitivity of the device to be increased by a factor of 3. This can be used for adjustment to a current that is smaller by this factor.

The operation of the switch output is „low active“, i.e. if the device has not exceeded its threshold value, the output is at 24V DC. If the threshold value is exceeded, the output is drawn towards GND. A line break in the downstream analysis is therefore treated in exactly the same way as an overcurrent.

The status of the device is shown by two LEDs:

- green LED: ready for operation
- yellow LED: check HVL

The output is set if the pre-set current is exceeded three times within 60 mins. or if the pre-set current flows for longer than 60 mins.

The output is automatically reset after 8 hours or by means of a reset pulse applied to input (2).



Technical Data

Dimensions	small housing 65x50x55mm, Al-busbar large housing 80x82x55mm Cu-busbar
Fixing connections	max. M16
Connections	+24VDC, DC GND, Reset, Output
Cross-section	50 x 8 mm ² Cu/Al
Potting	PU
Contact	electronic switching contact
Operate value	adjustable from ≥ 10 A to ca. 40A
Switching voltage	max. DC 30V
Switching current	max. DC 200 mA
Switching power	max. 4 W
Ambient temperature	-25°C to +80°C, 5-95% humidity
Connection	4 screw clamps, max 1,5 mm ² M12x1,5 cable gland (small housing) M20x1,5 cable gland (large housing)
impulse current with-stand capability	60kA (8/20µs)
lightning current with-stand capability	25kA (10/350µs)

Ordering Information

Type	part no.
8546-HVL-monitor (Al)	720130
8546-HVL-monitor (Cu)	720132

Other design variants of coil connections, fixing, operate values and cable lead lengths on request.

8546-HVL

2. Technical data

2.1 Limit data

(absolute maximum values)

Parameter	Symbol	Limit values	Condition	Additional description
Supply voltage	U_{B-min} U_{B-max}	16 V DC +30 V DC	Residual ripple <100 mV _{SS}	
Switching output	I_{L-max} U_{L-CP}	200 mA 62 V		permanently resistant to short circuiting, overload protection
Control input	U_{E-max}	±30 V DC		
Ambient temperature	$T_{a(B)}$	-25 °C to +80 °C	rel. humidity 5-95%	non-condensing
Storage temperature	$T_{a(L)}$	-40 °C to +85 °C	rel. humidity 5-95%	non-condensing

2.2 Electrical data, supply

Tension d'alimentation	U_B	24 V DC	Tolerance ±20%	
Consommation en courant	I_B	21 mA	$U_B = 24$ V DC	
Puissance dissipée	P_B	500 mW	$U_B = 24$ V DC	

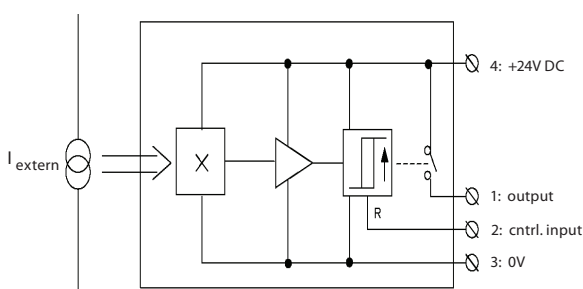
2.3 Electrical data, switching output

Type de sortie		PNP		Positive switching
Logique de commutation		low active		+24V = switched off 0V (high resist.) = switched on
Charge	I_L	0 mA to 200 mA	$U_B = 24$ V DC	
Protection de surintensité		yes		permanently
Protection de court-circuit		yes		permanently
Courant de court-circuit max.	I_{L-SC}	1.2 A	$T_{a(B)} = -25$ °C	
Chute de tension	U_{A-max}	< 1 V	$I_L < I_{L-max}$	

2.4 Electrical data, control input

Input voltage - logical „0“ - logical „1“	U_{E0-max} U_{E1-min}	< +10 V DC > +20 V DC	$U_B = 24$ V DC $U_B = 24$ V DC	or unswitched (open)
Drive current	I_{E-max}	< 1 mA	$U_E = 24$ V DC	
Min. pulse length	T_{E-min}	150 ms		Internal filtering to suppress interference pulses

3. Block circuit diagram



4. Dimensions, connection scheme

