



F 3334: 4-channel output module

safety-related, applicable up to SIL 3 according to IEC 61508

- resistive or inductive load up to 2 A (48 W)
- lamp connection up to 25 W
- with integrated safety shutdown, with safe isolation, with line monitoring
- no output signal at break of the L- supply

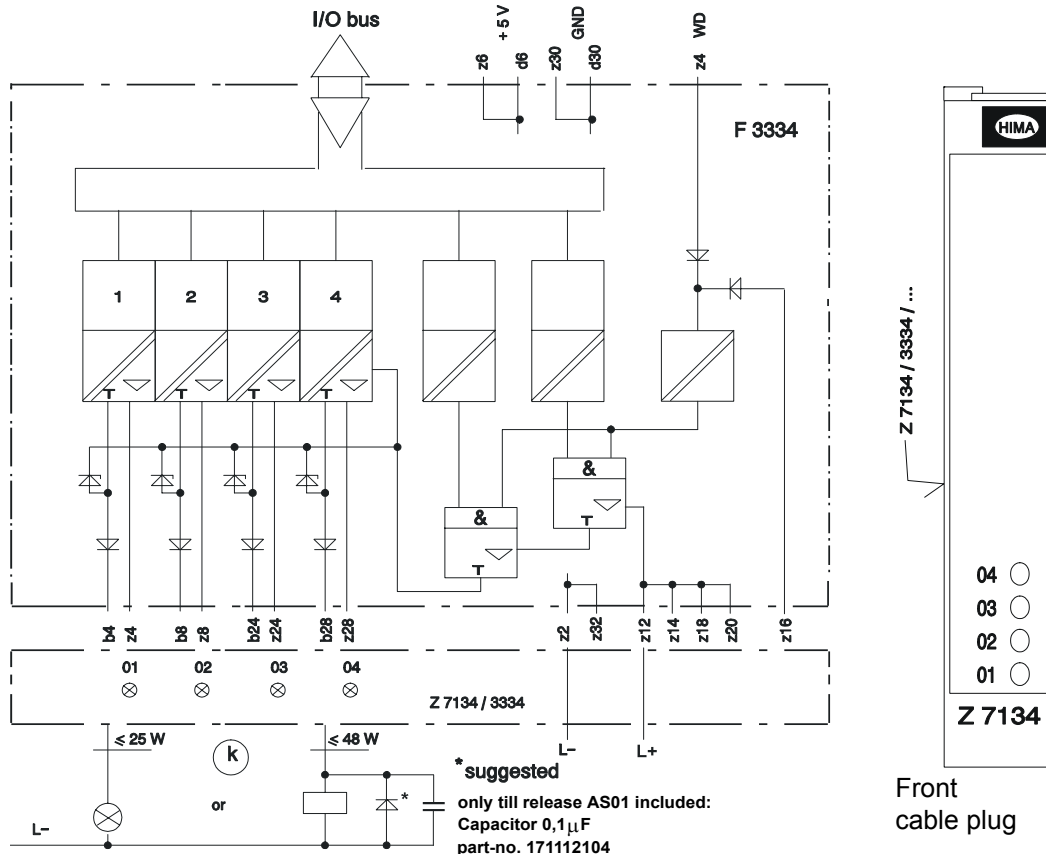


Figure 1: Block diagram and front cable plug

Appertaining function blocks: HB-BLD-3 or HB-BLD-4

The module is automatically tested during operation. The main test routines are:

- Reading back of the output signals. The operating point of the 0-signal read back is ≤ 6.5 V. Up to this value the level of the 0-signal may arise in case of a fault and this will not be detected
- Switching capability the test signal and cross-talking (walking-bit test)

Outputs	2 A, (k) short-circuit-proof
Internal voltage drop	max. 2 V at 2 A load
Admissible line resistance (in + out)	max. 3.6 Ω
Undervoltage tripping	at ≤ 16 V
Output leakage current	max. 550 μ A
Output voltage if output is reset	max. 1.5 V
Current input WD	max. 30 mA
Monitored switching time	max. 250 μ s
Space requirement	4 SU
Operating data	5 VDC / 130 mA
	24 VDC / 130 mA plus load

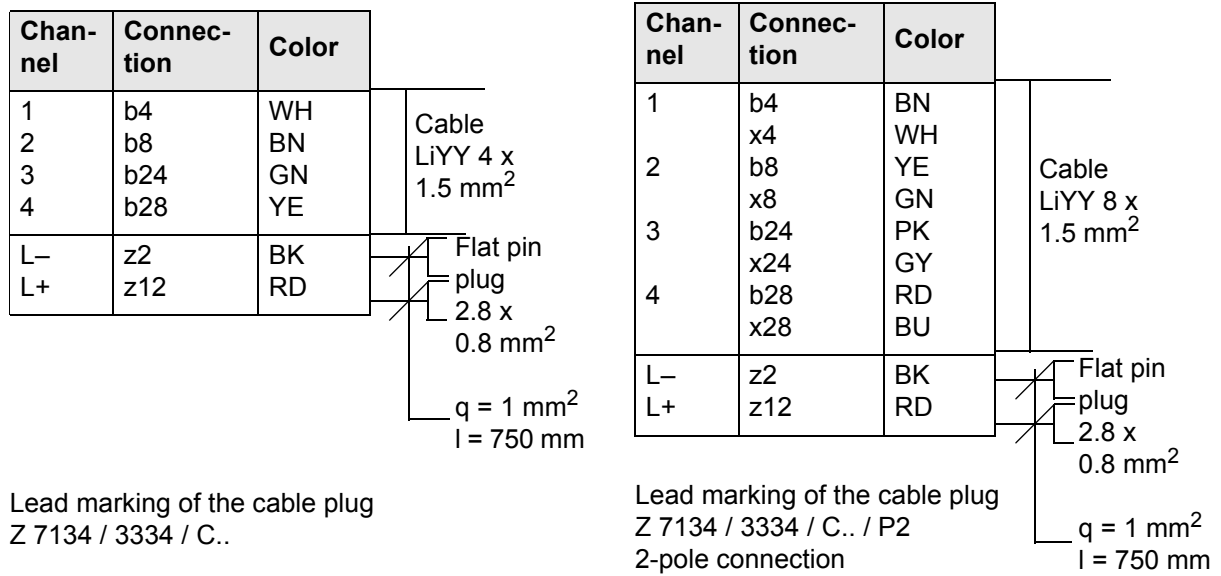


Figure 2: Lead markings of the cable plugs

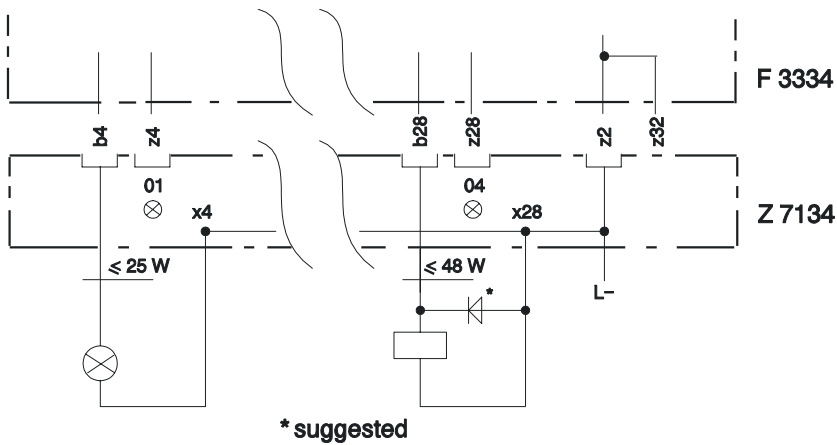


Figure 3: 2-pole connection

Operating points of line monitoring

short circuit current	2.6...5 A
line break	0.5...9.5 mA

Planning notes



The function block HB-BLD-3 (for single channel operation) or HB-BLD-4 (for redundant operation) must be used for all applications with the module.

- In case of line monitoring the appertaining function blocks HB-BLD-3 (for single channel operation) or HB-BLD-4 (for redundant operation) enable enhanced configuration possibilities for the module.
 - The extension of the time for the inrush current for lamp loads by the appertaining function block is valid for all channels. So inductive and lamp loads may not be operated on *one* module at the same time.
 - The line break monitoring requires a minimum load of 10 mA. Line short-circuit and line break can be evaluated in the user program as line faults by means of the function blocks HB-BLD-3 or HB-BLD-4. The evaluation of the signal "line break" is made up to SIL 1.
 - At the same time only 2 channels may be operated with the max. load (2 A). If the load is up to max. 1 A, all channels may be operated at the same time.
 - In one I/O subrack max. 10 output modules with nominal load may be used.
 - The outputs can be connected in parallel without external decoupling diodes.
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The connection of capacitive loads is not permitted. A length of the connection line up to 3 km is possible. The line capacity, however, is limited to a maximum of 1 μ F.

In conjunction with certain 25 W lamp types problems may occur caused by too high inrush current.

To prevent this at building block HB-BLD-3 (HB-BLD-4) at input "INRUSH CURRENT IN ms" a time between 1 to 50 ms might be set to suppress the fault signal. The duration of the test then will be exceeded to the maximum of the entered time if this input is allocated.

Since edition (AS) 03 a resistor 1 Ω / 5 W must be connected in series to the lamp.
