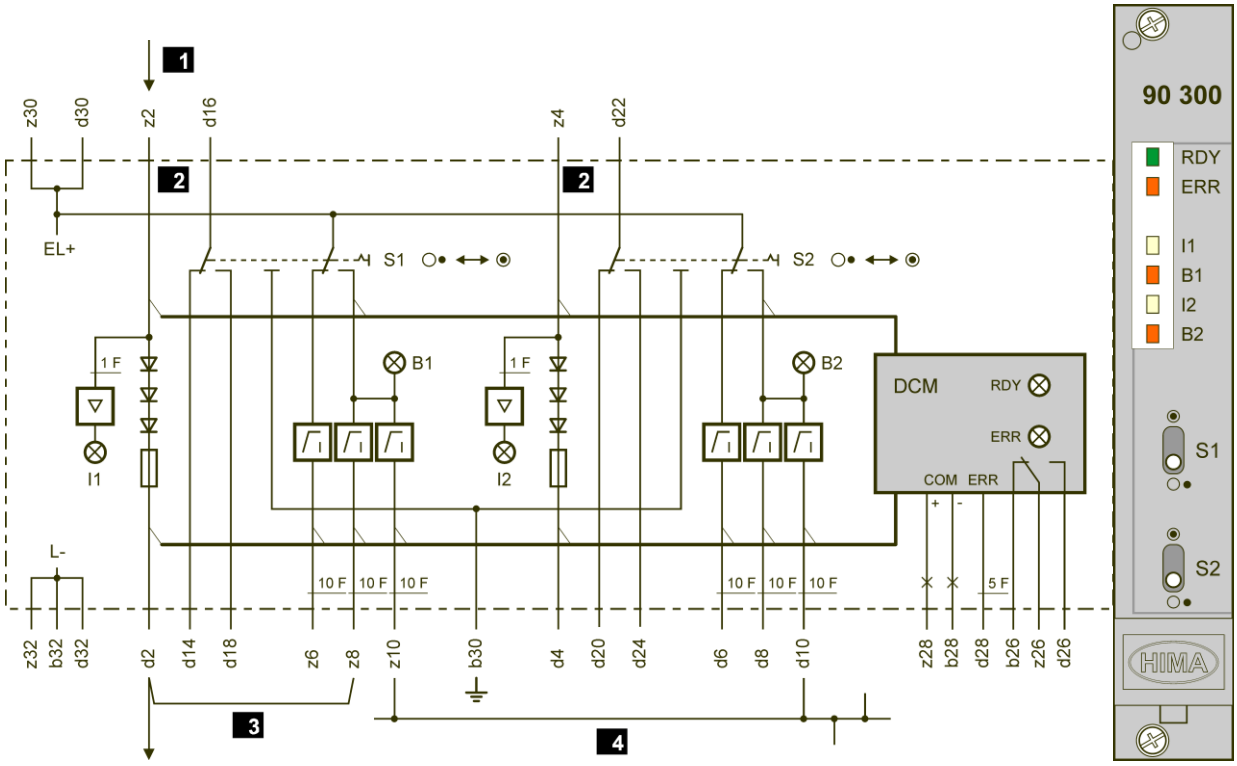
90 300: Bypass Module

2 channels with interference-free LED indicators



1 Signal path
2 Interference-free input
3 Bypass
4 Collective signal for bypass

Figure 1: Block Diagram

The bypass module reports a 1-signal present on the module's signal path by means of the LED I1 (I2). This signal can be bypassed by connecting pins d2-z8 (d4-d8) and activating switch S1 (S2) on the module's front plate. A red B1 (B2) LED signals the bypassed state. A collective indication of all existing bypasses is possible by connecting all pins z10 and d10 to a busbar.

Each bypass switch is provided with a potential-free change-over contact connected to the pins.

All the module functions are monitored by a microcontroller.

If a malfunction occurs, the ERR LED is lit, output d28 is on 1-signal and relay contact z26-d26 opens. This is also the case if the time diverges by ± 30 % or more from the setpoint.

Output z28-b28 is intended for connecting to the communication module, e.g., for transferring data to a distributed control system (DCS).

RDY (Ready) indicates the applied voltage (≥ 20 V).

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English translation of the German original document: HI 804 030 D, 90 300 (1516)

Fuses	0.375 A
Switching contact	≤ 30 V, ≤ 2 A
Operating data	24 VDC / 50 mA
Space requirement	3 RU, 4 HP

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Communication via Modbus

Reading of Variables

Type BOOL: Function code 1
Type WORD: Function code 3
Events: Function codes 65, 66, 67

Relative address	Data type	Value	Description	Relative event no.
0	WORD	92 H	Module type: 90 300	
1	BOOL	0	None	
2	BOOL	1	Module removed	
3	BOOL	1	Communication with module not ok	
4	BOOL	1	Module in slot, communication ok	
5	BOOL	1	Operating voltage too low, no RDY	
6	BOOL	1	Module fault, ERR	
7…8	BOOL	0	None	
9	BOOL	1	1-signal at input z2, I1	0
10	BOOL	1	1-signal at input z4, I2	1
11…16	BOOL	0	None	
17	BOOL	1	*S1* bypass switch ON	8
18	BOOL	1	*S2* bypass switch ON	9
19…40	BOOL	0	None	
41	BOOL	1	1-signal at output d2	24
42	BOOL	1	1-signal at output z6	25
43	BOOL	1	1-signal at output z8	26
44	BOOL	1	1-signal at output z10	27
45	BOOL	1	1-signal at output d4	28
46	BOOL	1	1-signal at output d6	29
47	BOOL	1	1-signal at output d8	30
48	BOOL	1	1-signal at output d10	31

Table 1: Module Status via Modbus

Value: 0 always has the opposite meaning
H: Hexadecimal value
Absolute address: A = p * 256 + relative address
Absolute event no.: E = (p - 1) * 32 + relative event no.
p = Slot no. in the subrack

Reading of All Variables

Function code 3, 84 WORDS

Starting with address 2000 H, 3000 H or 4000 H

	WORD 0 (16-bit)		WORD 1 (16-bit)		WORD 2 (16-bit)		WORD 3 (16-bit)	
Relative address	0	8…1	24…17	16…9	40…33	32…25		48…41
Data	Module type	Module status	None	None	None	None	None	Outputs

For error-free data transfer, all 84 WORDS must be read. This ensures that the variables of all the modules within a subrack are transferred. 0 is transferred for unused module slots.

Communication via PROFIBUS DP

Reading of Variables

Relative addresses of WORD and BYTE type

WORD	Bit	BYTE	Bit	Value	Description
0	0…7	0	0…7	92 H	Module type: 90 300
	8	1	0	0	None
	9		1	1	Module removed
	10		2	1	Communication with module not ok
	11		3	1	Module in slot, communication ok
	12		4	1	Operating voltage too low, no RDY
	13		5	1	Module fault, ERR
	14		6	0	None
	15		7	0	None
1	0	2	0	1	1-signal at input z2, I1
	1		1	1	1-signal at input z4, I2
	2…7	3	2…7	0	None
	8		0	1	*S1* bypass switch ON
	9		1	1	*S2* bypass switch ON
	10…15		2…7	0	None
2		4…5		0	None
3	0	6	0	1	1-signal at output d2
	1		1	1	1-signal at output z6
	2		2	1	1-signal at output z8
	3		3	1	1-signal at output z10
	4		4	1	1-signal at output d4
	5	7	5	1	1-signal at output d6
	6		6	1	1-signal at output d8
	7		7	1	1-signal at output d10
	8…15		0…7	0	None

Table 2: Module Status via PROFIBUS DP

Value: 0 always has the opposite meaning
H: Hexadecimal value
Absolute address WORD: W = 4 * (p - 1) + relative address
Absolute address BYTE: B = 8 * (p - 1) + relative address
p = Slot no. in the subrack