Indication modules

LED indication modules with collective contact

› Indicator modules in panel mounting housing with 8, 16, 24, 32, 40 or 48 signal inputs
› Available in 6 color variants, LED colors can be modified by the customer using exchangeable light pipes
› Low power consumption (less than 1 W)
› Wide range power supply and signal inputs (24 V - 230 V AC/DC)
› Integrated lamp test button and connection option for external button
› Easy configuration via DIP switch (NO / NC version, collective signal formation, inversion of collective signal)
› Operation indication via OK LED
› Labeling strips can be inserted in transparent window

Datasheet

11.05.2023

SM-LAB20-DB-UK-000

Device description

The LAB signaling modules are compact indication units in a panel mounting housing with 8, 16, 24, 32, 40 or 48 signaling inputs. The units have an internal lamp test button and the connection for an additional external button.

DIP switches are located under the front panel of the unit to configure the following functions:

- Group-wise (groups of 8) switching between normally open and normally closed principle of the inputs
- Group-wise (groups of 8) inclusion in the collective alarm
- Inverting the collective alarm

If the input of a group is operated in the normally open principle, this means that a high signal leads to the lighting of the corresponding LED and the triggering of the collective alarm relay if the input group is included in the collective alarm formation.

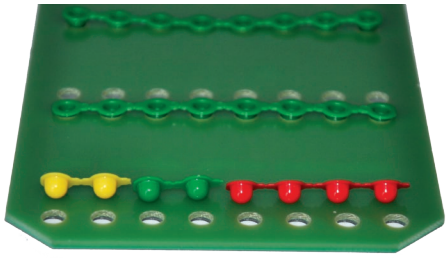
If an input is operated in the normally closed principle, this means that a low signal leads to the lighting of the corresponding LED and the triggering of the collective alarm relay when the input group is included in the collective alarm.

The contact of the collective alarm is designed as a changeover contact in order to be able to react to different requirements of the application. In addition, the function of the relay can be inverted.

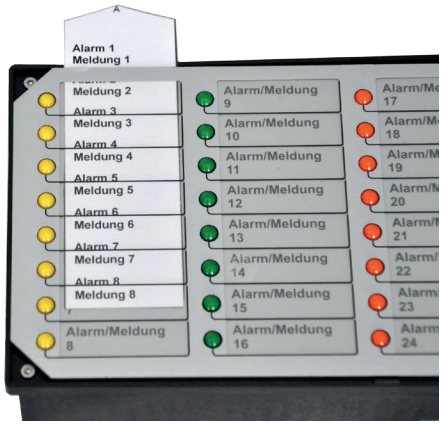
Colors of the LED displays

The high luminosity of the displays is achieved by high-intensity white LEDs. The 6 colors green, red, yellow, blue, white and orange are created by prefixed light pipes. When ordering, the display colors can be specified in groups (8 channels each). By simply exchanging the light pipes, which are available as spare parts, the colors can also be adapted very easily to individual requirements at a later date. The light pipes can be purchased in strips of 8 pieces each. The exchange is done without tools as follows:

Warning!
The front panel may only be removed in a de-energized state.



1. Removal of the front frame
2. Remove the front panel and carefully push out the light pipes from and through the front panel that are not needed, preferably at several points in a row, to the rear.
3. Press the light pipes of the desired color into the front panel from behind. front plate. The light pipes are always supplied in groups of 8 of one color. By simply bending them, they can also be easily separated and and pressed in individually.
4. The front panel and front frame must then be reassembled.



Labeling

The individual labeling of the indicators is carried out by means of labeling strips, which are slid under the cover foil after removing the front frame. For this purpose, we can provide you with templates in MS Word format, which allow two-line labeling.

Technical Data

Operation voltage U_{Sup}

DC voltage	24 – 230 V DC (- 15% / + 20%)
AC voltage	24 – 230 V AC 50/60 Hz (-15% / + 10%)
Bridging time during power failure	U_{Sup} < 110 V at least 10 ms res. 0,5 periods U_{Sup} > 110 V at least 100 ms res.. 5 periods

Alarm inputs

Response delay	< 100 ms

Nominal voltage [V AC/DC]	Switching threshold for alarm* [V] +/- 20%				Maximum permissible voltage [V AC/DC]	Input resistance [kΩ]
	On		Off			
	DC	AC	DC	AC		
24 - 230	16,5	14	13	13	253	150 (+/-20%)

* The switching thresholds refer to use at room temperature.

Different voltages can be supplied on request.

Power consumption

Number of channels	Power consumption [mW] (+/-20%)	
	Minimum	Maximum
8	60	270
16	60	370
24	60	455
32	60	540
40	65	625
48	65	710

Relay contact

Load capacity	4 A @ 0 … 250 V AC and 0 … 24 V DC 1 A @ 60 V DC 0,3 A @ 110 V DC 0,1 A @ 250 V DC
AC voltage resistance between relay contacts and signal voltage	3 KV_{eff} 50 Hz 1 min
AC voltage resistance of the opened relay contacts	1 KV_{eff} 50 Hz 1 min

External lamp test

Switching threshold direct current	18 V +/- 20%
Switching threshold alternating current	13 V +/- 20%
Input resistance	150 kΩ (+/-20%)

Mechanical data

Number of channels	Front frame H x W x D [mm]	Panel breakout [mm]	Depth with front frame and terminals [mm]	Weight [g]
08	96 x 96 x 8	92 x 92	100	195
16	96 x 96 x 8	92 x 92	100	197
24 32	96 x 192 x 8	92 x 186	100	400 405
40 48	96 x 287 x 8	92 x 282	100	550 555

Mounting	Panel mounting
Required mounting depth	120 mm
Minimum horizontal distance of two devices	15 mm
Connection terminals	pluggable
Wire cross section rigid or flexible	
without ferrules	0,2 ... 2,5 mm^2
with ferrules	0,25 ... 2,5 mm^2

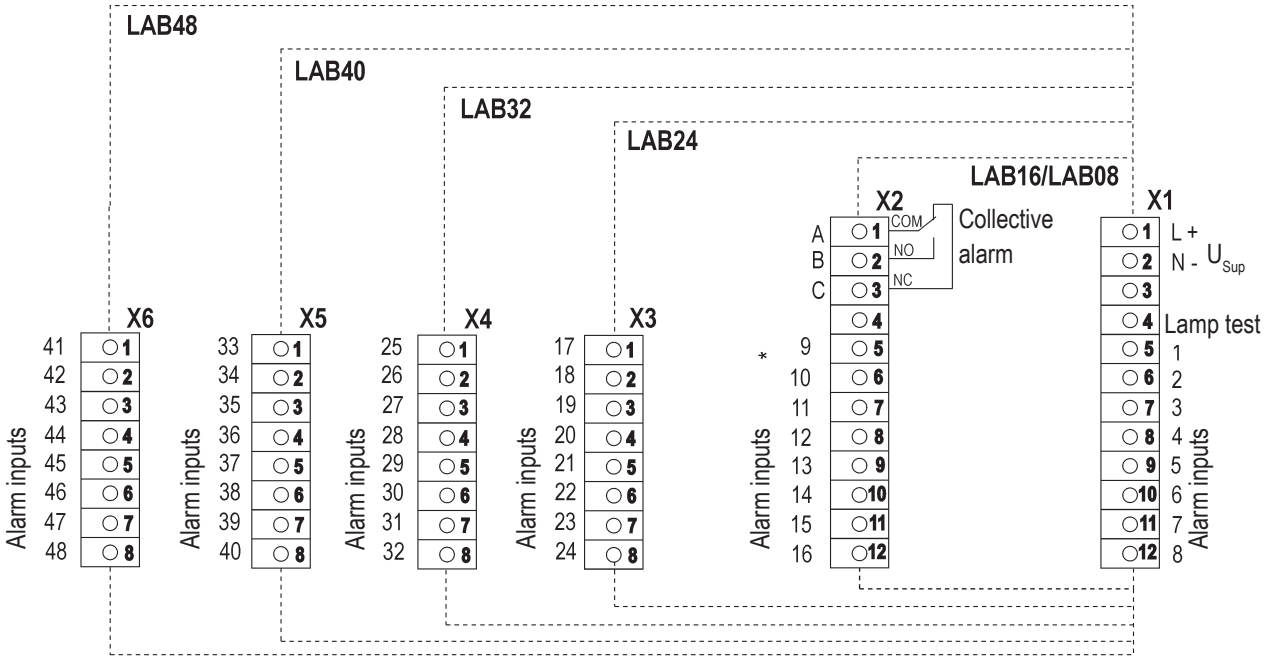
Environmental conditions	
Ambient operating temperature	-20°C .... +60°C
Storage temperature	-40°C .... +70°C
Duty cycle	100 %
Protection class front side	IP 54
Protection class rear side	IP 20
Humidity	Annual average maximum 75% relative humidity; on 56 days up to 93% relative humidity; Condensation not permitted during operation [Examination:40°C,93%rH >4days]

Norms

Interference immunity for industrial areas	DIN EN IEC 61000-6-2
Emitted interference for industrial areas	DIN EN 61000-6-4
Industrial, scientific and Medical equipment - Radio disturbance characteristics - Limits and methods of measurement (Class A)	DIN EN 55011

The specifications for AC voltage are given as effective values and refer to a sinusoidal AC voltage with a frequency of 50 / 60 Hz. All data refer to an ambient temperature of 25 °C.

Terminal assignments

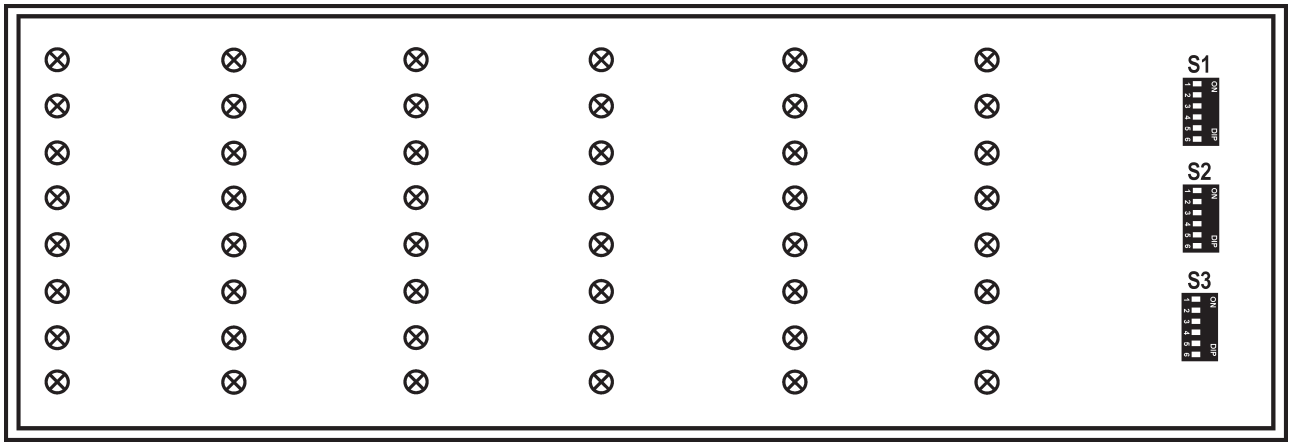


* The alarm inputs 9 - 16 are not assigned for the LAB08.

If the signal inputs are operated in normally closed mode, unused inputs must be connected to + or L.

DIP-Switch

After taking off the front frame and removing the front panel, DIP switches become visible. In the following figure, a LAB with 48 alarms is shown as a representative of all devices.



Depending on the number of channels of the indication module, there are different numbers of DIP switches and they have the functions described in the tables below.

LAB 08 and LAB 16

Switch	Function with switch position „ON“	
	LAB 08	LAB 16
S1.1	Alarm 1-8 is included in the collective alarm formation	Alarm 1-8 is included in the collective alarm formation
S1.2	No function	Alarm 9-16 is included in collective alarm formation
S1.3	Input 1-8 in normally closed principle	Input 1-8 in normally closed principle
S1.4	No function	Input 9-16 in normally closed principle
S1.5	Collective relay inverted	Collective relay inverted
S1.6	No function	No function

LAB 24 and LAB 32

Switch	Function with switch position „ON“	
	LAB 24	LAB 32
S1.1	Alarm 1-8 is included in collective alarm formation	Alarm 1-8 is included in collective alarm formation
S1.2	Alarm 9-16 is included in collective alarm formation	Alarm 9-16 is included in collective alarm formation
S1.3	Input 1-8 in normally closed principle	Input 1-8 in normally closed principle
S1.4	Input 9-16 in normally closed principle	Input 9-16 in normally closed principle
S1.5	Collective relay inverted	Collective relay inverted
S1.6	No function	No function
S2.1	Alarm 17-24 is included in collective alarm formation	Alarm 17-24 is included in collective alarm formation
S2.2	No function	Alarm 25-32 is included in collective alarm formation
S2.3	Input 17-24 in normally closed principle	Input 17-24 in normally closed principle
S2.4	No function	Input 25-32 in normally closed principle
S2.5	No function	No function
S2.6	No function	No function

LAB 40 and LAB 48

Switch	Function with switch position „ON“	
	LAB 40	LAB 48
S1.1	Alarm 1-8 is included in collective alarm formation	Alarm 1-8 is included in collective alarm formation
S1.2	Alarm 9-16 is included in collective alarm formation	Alarm 9-16 is included in collective alarm formation
S1.3	Input 1-8 in normally closed principle	Input 1-8 in normally closed principle
S1.4	Input 9-16 in normally closed principle	Input 9-16 in normally closed principle
S1.5	Collective relay inverted	Collective relay inverted
S1.6	No function	No function
S2.1	Alarm 17-24 is included in collective alarm formation	Alarm 17-24 is included in collective alarm formation
S2.2	No function	Alarm 25-32 is included in collective alarm formation
S2.3	Input 17-24 in normally closed principle	Input 17-24 in normally closed principle
S2.4	No function	Input 25-32 in normally closed principle
S2.5	No function	No function
S2.6	No function	No function
S3.1	Alarm 33-40 is included in collective alarm formation	Alarm 33-40 is included in collective alarm formation
S3.2	No function	Alarm 41-48 is included in collective alarm formation
S3.3	Input 33-40 in normally closed principle	Input 33-40 in normally closed principle
S3.4	No function	Input 41-48 in normally closed principle
S3.5	No function	No function
S3.6	No function	No function

Order descriptions

LAB

22	L	x	x	x	x	x	x	x	x	x	
											Number of alarm channels
		A									8 alarm inputs
		B									16 alarm inputs
		C									24 alarm inputs
		D									32 alarm inputs
		E									40 alarm inputs
		F									48 alarm inputs
											Operating and signalling voltage
			W								24 - 230 V AC/DC (wide range)
											LED color group 1 (channels 1 - 8)
											R-red, G-green, Y-yellow, B-blue, W-white, A-orange
											LED color group 2 (channels 9 - 16)
											R-red, G-green, Y-yellow, B-blue, W-white, A-orange, O not available
											LED color group 3 (channels 17 - 24)
											R-red, G-green, Y-yellow, B-blue, W-white, A-orange, O not available
											LED color group 4 (channels 25 - 32)
											R-red, G-green, Y-yellow, B-blue, W-white, A-orange, O not available
											LED color group 5 (channels 33 - 40)
											R-red, G-green, Y-yellow, B-blue, W-white, A-orange, O not available
											LED color group 4 (channels 41 - 48)
											R-red, G-green, Y-yellow, B-blue, W-white, A-orange, O not available
											Model
										0	Standard
											not equal to 0 = special model

22 L Article number

Please fill up the respective LED colours groups with an 0 in case they are not available:

Example: LAB 16: 22L B W R G 0 0 0 0 0

Accessories

Article number	Description
22ZLPGREEN	6 strips (with 8 light pipes each) Green
22ZLPRED	6 strips (with 8 light pipes each) Red
22ZLPYELLOW	6 strips (with 8 light pipes each) Yellow
22ZLPBLUE	6 strips (with 8 light pipes each) Blue
22ZLPWHITE	6 strips (with 8 light pipes each) White
22ZLPAMBER	6 strips (with 8 light pipes each) Orange
22ZLPMIXED	Respectively one strip (with 8 light pipes each) Green, Red, Yellow, Blue, White, Orange

Subject to technical changes

Wir drucken CO_2 neutral

Contact

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