Compact EDA 47 alarm and display system

- *Compact alarm system with 48 illuminated and automatically dimmed text fields*
- *Each message can be programmed as an alarm or display*
- *Switch-on and switch-off delay between 1 and 99 sec.*
- *Panel-mounted device with proven technology, flexibly adaptable to the application requirements*
- *Panel-mounted device, connection via separate terminal block*
- *Cost-effective installation, low cabling effort due to serial protocol, for example via Böning data station AHD-PS47*
- *Integrated horn and relay outputs for external horn and collective signaling*
- *Inputs for external acknowledgement and lamp test*

General information

Compact EDA 47 is a microprocessor-controlled device for panel mounting, which is mainly used as an alarm system on ships. The device receives its data serially via the binary data station AHD-PS 47, AHD-PS 47C or another serial data source. Compact EDA 47 can be used very well in the bridge area because all light fields are dimmed automatically.

The sensitivity of the dimming can be adjusted via a trim potentiometer on the back; this should be done in a dark environment or with the photosensor covered.

Kompakt EDA 47 has 47 free message fields and an additional illuminated field to indicate errors in the event of faulty communication. Kompakt EDA is configured at the factory according to customer specifications so that all desired measuring points are monitored. In the event of an alarm, an audible and visual alarm is triggered.

An alarm is acknowledged via external connectable buttons.

Data acquisition

Compact EDA 47 usually receives its data from a binary data station type AHD-PS 47 or AHD-PS 47C. Alternative data sources (e.g. AHD-DPU 9) are available on request.

Alarms and displays

Each measuring point can trigger an alarm or only serve as a status display; the desired input is configured accordingly as "Alarm" or "Display".

When a new alarm occurs, the corresponding measuring point flashes. In addition, the internal buzzer is activated and the relays for the external horn and collective alarm message are switched on. When a display-field is switched on, it shows a continuous light. No relays switch in this case.

Acknowledgement and lamp test

An alarm is first acknowledged acoustically and then visually. After activating the horn quit input, the internal buzzer and the external horn (relay) are muted.

After activating the optic quit input, all currently flashing light fields change to steady light. Each message remains active until the corresponding alarm reason has been solved. After activating the lamp test input, all text fields must light up.

Alarm activation

Compact EDA 47 offers an additional alarm blocking function. Each measuring point can be enabled or disabled via the display status of channels 1…5.

In practice, the upper message fields can be linked to various operating indicators on the ship so that an alarm is only triggered when the assigned system component is in operation.

Switch-on and switch-off delay

An individual switch-on and switch-off delay in the range of 1...99 seconds can be configured for each signaling field.

Input as normally open or normally closed contact

Each measuring point can be configured as a normally open (NO) or normally closed (NC) contact. If an input is set up in "NC" mode, a message is also triggered in the event of a wire break.

Device Structure

Compact EDA 47 consists of 2 electronic cards arranged one above the other. The front card is equipped with surface light-emitting diodes, which form a measuring point in pairs. The surface light-emitting diodes can be configured in the colors red, yellow and green and are interchangeable thanks to the existing plug-in sockets.

The illuminated fields have a size of approx. 40mm x 10mm, which provides sufficient space for clearly visible labeling. The entire text field is produced as a common film negative for all 48 measuring points, so that only the text is illuminated when the measuring point is active. The film negative can also be simply replaced by the customer, allowing subsequent changes to be made quickly and easily.

The rear electronics card contains the processor system and the EPROM memory element with the user-specific configuration data (see programming tables). All inputs and outputs are connected to a remote terminal block via a 20-pin flat cable (included in the scope of delivery).

Due to serial communication, only a few connection cables are required, significantly reducing cabling costs.
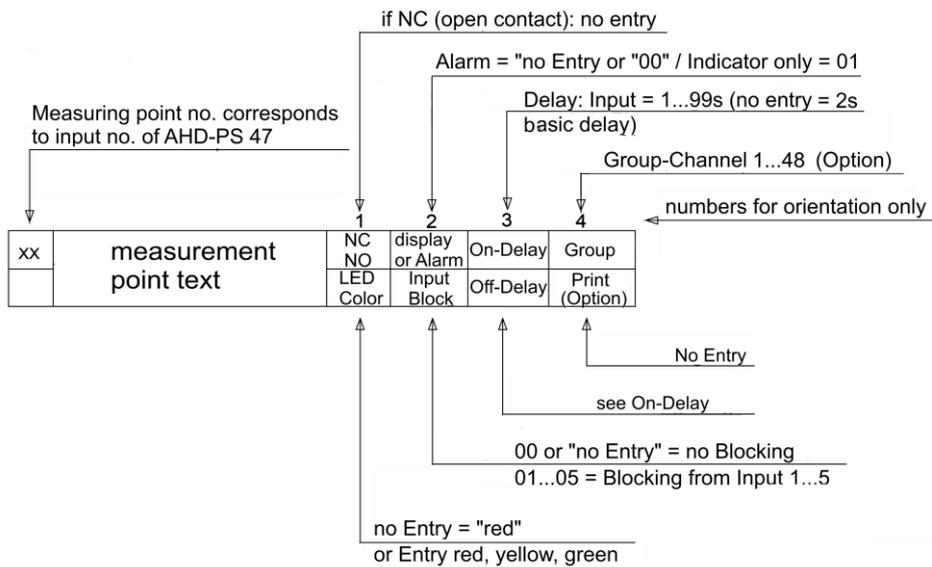
Measuring point list and programming

Compact EDA 47 is configured according to the system. This is based on the measuring point list, which is created according to customer specifications:

List of measuring points

| Customer _____ | New building _____ | Item no. _____ |
| Shipyard _____ | Ship Name _____ | Revision _____ |

	1 2 3 4		1 2 3 4		1 2 3 4		1 2 3 4
01		02		03		04	
05		06		07		08	
09		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30		31		32	
33		34		35		36	
37		38		39		40	
41		42		43		44	
45		46		47		48	Data trans-mission error

Measuring point no. corresponds to input no. of AHD-PS 47

if NC (open contact): no entry

Alarm = "no Entry or "00" / Indicator only = 01

Delay: Input = 1...99s (no entry = 2s basic delay)

Group-Channel 1...48 (Option)

numbers for orientation only

		1	2	3	4
xx	measurement point text	NC NO	display or Alarm	On-Delay	Group
		LED Color	Input Block	Off-Delay	Print (Option)

No Entry

see On-Delay

00 or "no Entry" = no Blocking
01...05 = Blocking from Input 1...5

no Entry = "red"
or Entry red, yellow, green

PROGRAMMING TABLE FOR COMPACT EDA 47 MONITORING AND CONTROL UNIT

Input	Alarm (00) Display (01)	(a) NC (00) NO (01)	(b) Switch-off delay	(b) Switch-off delay	Alarm suppression through input					(c)	Receive via serial input 2
					1	2	3	4	5		00 = no 01 = yes
1	1E30	1E00	1E60	1860	1E90	1EC0	1EF0	1F20	1F50		1400
2	1E31	1E01	1E61	1861	1E91	1EC1	1EF1	1F21	1F51		1401
3	1E32	1E02	1E62	1862	1E92	1EC2	1EF2	1F22	1F52		1402
4	1E33	1E03	1E63	1863	1E93	1EC3	1EF3	1F23	1F53		1403
5	1E34	1E04	1E64	1864	1E94	1EC4	1EF4	1F24	1F54		1404
6	1E35	1E05	1E65	1865	1E95	1EC5	1EF5	1F25	1F55		1405
7	1E36	1E06	1E66	1866	1E96	1EC6	1EF6	1F26	1F56		1406
8	1E37	1E07	1E67	1867	1E97	1EC7	1EF7	1F27	1F57		1407
9	1E38	1E08	1E68	1868	1E98	1EC8	1EF8	1F28	1F58		1408
10	1E39	1E09	1E69	1869	1E99	1EC9	1EF9	1F29	1F59		1409
11	1E3A	1E0A	1E6A	186A	1E9A	1ECA	1EFA	1F2A	1F5A		140A
12	1E3B	1E0B	1E6B	186B	1E9B	1ECB	1EFB	1F2B	1F5B		140B
13	1E3C	1E0C	1E6C	186C	1E9C	1ECC	1EFC	1F2C	1F5C		140C
14	1E3D	1E0D	1E6D	186D	1E9D	1ECD	1EFD	1F2D	1F5D		140D
15	1E3E	1E0E	1E6E	186E	1E9E	1ECE	1EFE	1F2E	1F5E		140E
16	1E3F	1E0F	1E6F	186F	1E9F	1ECF	1EFF	1F2F	1F5F		140F
17	1E40	1E10	1E70	1870	1EA0	1ED0	1F00	1F30	1F60		1410
18	1E41	1E11	1E71	1871	1EA1	1ED1	1F01	1F31	1F61		1411
19	1E42	1E12	1E72	1872	1EA2	1ED2	1F02	1F32	1F62		1412
20	1E43	1E13	1E73	1873	1EA3	1ED3	1F03	1F33	1F63		1413
21	1E44	1E14	1E74	1874	1EA4	1ED4	1F04	1F34	1F64		1414
22	1E45	1E15	1E75	1875	1EA5	1ED5	1F05	1F35	1F65		1415
23	1E46	1E16	1E76	1876	1EA6	1ED6	1F06	1F36	1F66		1416
24	1E47	1E17	1E77	1877	1EA7	1ED7	1F07	1F37	1F67		1417
25	1E48	1E18	1E78	1878	1EA8	1ED8	1F08	1F38	1F68		1418
26	1E49	1E19	1E79	1879	1EA9	1ED9	1F09	1F39	1F69		1419
27	1E4A	1E1A	1E7A	187A	1EAA	1EDA	1F0A	1F3A	1F6A		141A
28	1E4B	1E1B	1E7B	187B	1EAB	1EDB	1F0B	1F3B	1F6B		141B
29	1E4C	1E1C	1E7C	187C	1EAC	1EDC	1F0C	1F3C	1F6C		141C
30	1E4D	1E1D	1E7D	187D	1EAD	1EDD	1F0D	1F3D	1F6D		141D
31	1E4E	1E1E	1E7E	187E	1EAE	1EDE	1F0E	1F3E	1F6E		141E
32	1E4F	1E1F	1E7F	187F	1EAF	1EDF	1F0F	1F3F	1F6F		114F
33	1E50	1E20	1E80	1880	1EB0	1EE0	1F10	1F40	1F70		1420
34	1E51	1E21	1E81	1881	1EB1	1EE1	1F11	1F41	1F71		1421
35	1E52	1E22	1E82	1882	1EB2	1EE2	1F12	1F42	1F72		1422
36	1E53	1E23	1E83	1883	1EB3	1EE3	1F13	1F43	1F73		1423
37	1E54	1E24	1E84	1884	1EB4	1EE4	1F14	1F44	1F74		1424
38	1E55	1E25	1E85	1885	1EB5	1EE5	1F15	1F45	1F75		1425
39	1E56	1E26	1E86	1886	1EB6	1EE6	1F16	1F46	1F76		1426
40	1E57	1E27	1E87	1887	1EB7	1EE7	1F17	1F47	1F77		1427
41	1E58	1E28	1E88	1888	1EB8	1EE8	1F18	1F48	1F78		1428
42	1E59	1E29	1E89	1889	1EB9	1EE9	1F19	1F49	1F79		1429
43	1E5A	1E2A	1E8A	188A	1EBA	1EEA	1F1A	1F4A	1F7A		142A
44	1E5B	1E2B	1E8B	188B	1EBB	1EEB	1F1B	1F4B	1F7B		142B
45	1E5C	1E2C	1E8C	188C	1EBC	1EEC	1F1C	1F4C	1F7C		142C
46	1E5D	1E2D	1E8D	188D	1EBD	1EED	1F1D	1F4D	1F7D		142D
47	1E5E	1E2E	1E8E	188E	1EBE	1EEE	1F1E	1F4E	1F7E		142E
"48"	1E5F	1E2F	1E8F	188F	1EBF	1EEF	1F1F	1F4F	1F7F		--

- The memory addresses are shown on the left-hand side of each column. The data is entered in the free fields on the right-hand side as required. Unfilled fields are assigned the value "00".
- The input marked "48" becomes active if the serial data receive to the Compact EDA is defective.

a) NC: message is generated when the contact is open or the signal is falling; the content of the memory address must be "00".
    NO: message is generated when the contact is closed or the signal is rising; the content of the memory address must be "01".

b) Content of memory address = response delay in seconds (tolerance max. +10%). Maximum value = 99.

c) Each input can be suppressed by inputs 1 to 5. Example for measuring point 1 = "Engine in operation" and measuring point 8 = "Engine alarm – Lo oil pressure", measuring point 8 is to be suppressed by measuring point 1 when the motor is at idle:

    The content of memory address 1E97 must be "01". The suppression is canceled as soon as the message "Engine in operation" is active and the corresponding delay time has elapsed. The suppressed measuring points are always assigned to the "suppression inputs" by entering '01' in the corresponding memory addresses. If measuring point 27 is to be suppressed by input 5, the value "01" is also written to memory address 1F6A. Multiple suppression of a measuring point is also permitted.

View and connection diagram
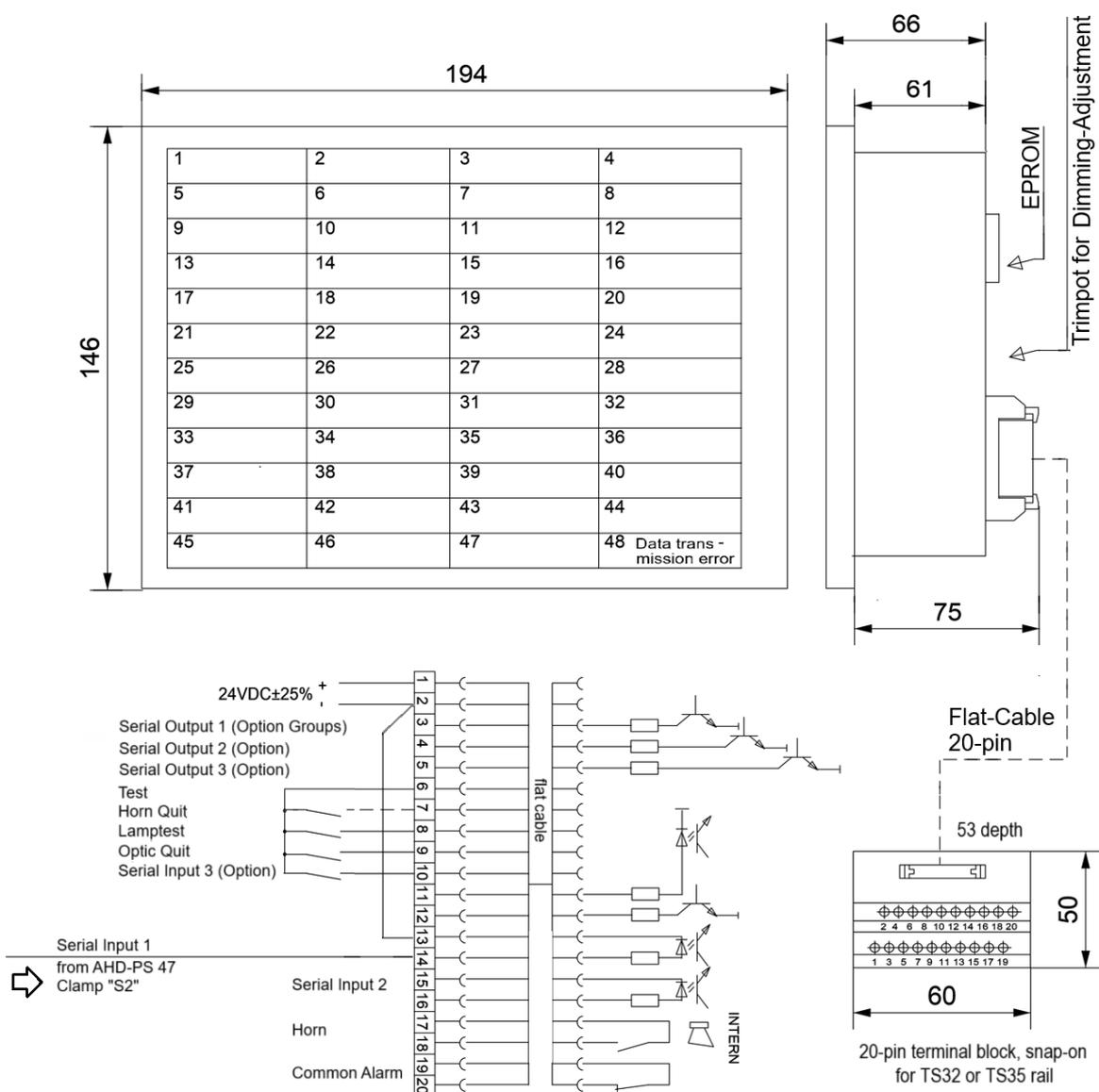
Technical data

General data	
Dimensions, W x H x D	192 x 144 x 74 mm
Panel cutout	185 x 137 mm
Weight	approx. 1 kg

Assembly Type, Housing	
	Panel mounting enclosure, Front with labeling foil

Environmental data	
Operating temperature	-10°C...~ +55°C
Storage temperature	-30°C...~ +85°C
Protection class	IP 23 IP 54 front with front cap

Electrical data	
Power supply	24 V DC (+25% / -25%)
Power consumption	approx. 200 mA (24 V DC) 1.2 A (all fields active)

Outputs	
2 relay contacts	2 x relay contact potential-free DC - 1 A continuous current

Light fields	
48 LEDs	20x10mm color red, yellow, green (configurable)

Inputs	
Binary control inputs	• Horn Quit • Optics Quit • Lamp test • Alarm test (option)

Interfaces	
Serial	1 x TTY (optocoupler) (Data from AHD-PS 47) 2 x TTY (option)

Part-No.	
2085	EDA / 47 Messages and alarm repetition