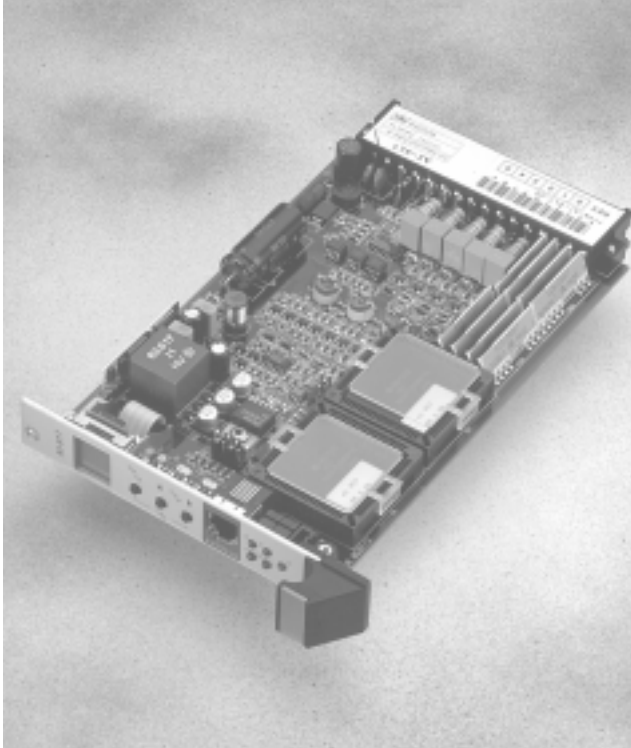


ProSafe-DSP

AI-917-A0

Analog Input module (4 * 0-20 mA)



Order number: IS-510917001

This module has four analog inputs and four logic pulse outputs. The module is programmable, so the functionality depends on the software used. Standard application programs are available. The module has a number of typical characteristics:

- Four channel 0-20 mA signal inputs
- LED indication for output status and line fault
- LCD-display for input level indication and module parameters (setpoint, actual value etc.)
- Two independent processors for high safety level
- Integrated output AND-gate for alarm groups
- Shiftregister circuit for connection to the communication system

All inputs have common 0 V.

The function of front indication LEDs, push buttons and LCD display are determined by the application. LED 1 to 4 usually indicate the status of the four logic pulse outputs.

Each logic pulse output has an integrated AND-gate. This gate is used to simplify the formation of alarm groups in for example gas applications.

The push buttons on the front on the module can be used to display the module input and settings. But they can also be used to change application parameters (setpoint, hysteresis, time delay, etc.). The ability to change these parameters can be disabled by a jumper setting on the module.

AI-917-A0 Technical Data

General

No. of inputs	4
No. of outputs	4
Size	single euro format 4TE (160x100x20 mm)
Connector	DIN 41612 Bauform F 48p
Identification	AI-917 on front

Environmental

Temperature (working)	-10 to +60 °C
Temperature (storage)	-25 to +85 °C
Relative humidity	max. 75%, no condensation
EMI	NAMUR AK EMV DIN IEC 801-2-5

Input

Current	0 - 20 mA (max. 50 mA)
Impedance	50 Ω current input
Switches (3)	partly programmable
Line fault levels Setpoint	programmable adjustable (0-22mA) on front if not disabled by jumper or programmable
Indication	programmable
Hysteresis	programmable
Stability error	<0.1% /10 °C
Accuracy	± 0.1% ± 1 bit
Resolution	1024 points over 22 mA (10 bits)
Lamp test	18 - 30 V/3.5 - 6 mA
Serial clock	clock pulse from MC-573 (min. 20 μs)
Level	0/11 V

Propagation

On delay	ca. 20 ms (program dependent)
Start up time	8 s

Isolation

0.5 kV (test)

Output

Type	current pulse 500 mA
Capacity	10 unit loads
Status indication	programmable LEDs

Type Features

Display
2 rows
first row measurement
value
2nd row 1 alpha 2 num.
char's

Type

RS-232 serial interface
(adapter cable necessary)

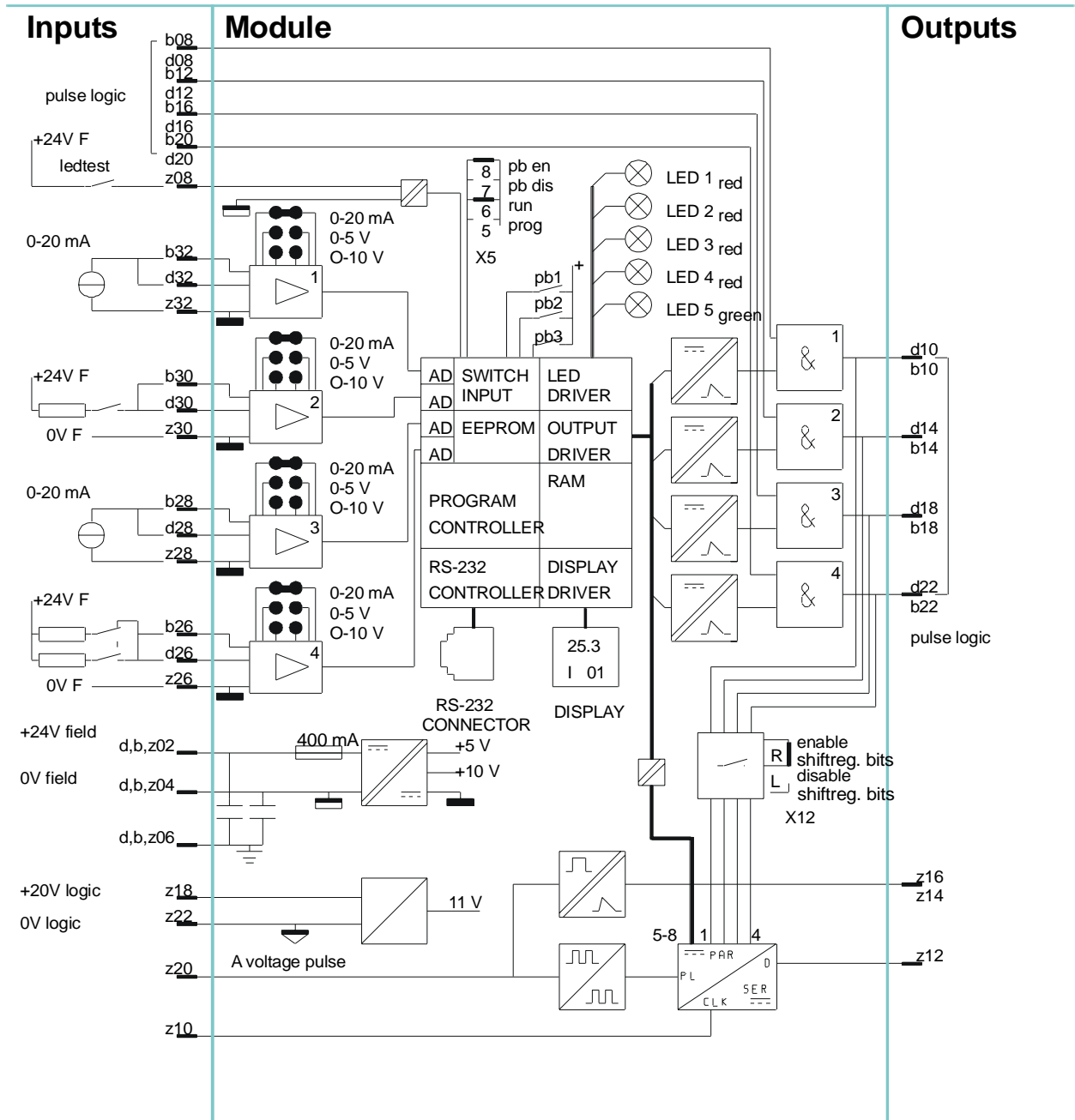
Supply

Supply voltage	20 V (logic), 18 - 30 Vdc
Ripple	< 1 top-top
Clock signal	A voltage pulse
Current consumption	10 mA (20 V), 70 mA (24 V)

Dissipation

2 W

AI-917-A0 Functional Diagram

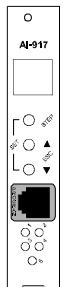


Supply

Notes

Front

see 'inputs'




Notes

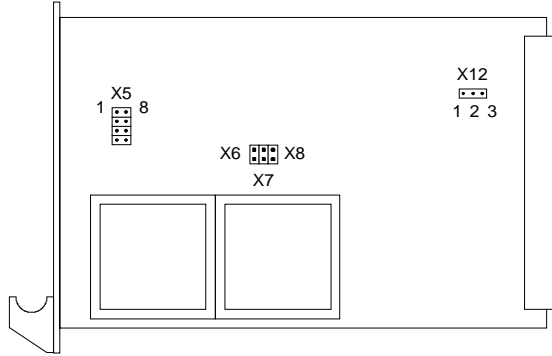
Jumpers

The following jumpers can be found on the AI-917 module:

Jumpers

Jumper	Pin	Function description
X5	1 - 8	Enable pushbuttons 2 and 3
	2 - 7	Disable pushbuttons 2 and 3
	3 - 6	Module in run mode
	4 - 5	Module in programming mode
X6		Enable calibration
X7		Factory test only
X8		Factory test only
X12	1 - 2	Enable shiftregister bits 1 - 4
	2 - 3	Disable shiftregister bits 1 - 4

 = default jumper position



To disable changing of program parameters jumper X5 must be placed on 2-7. In position 1-8 the change of program parameters is enabled.

Jumpers X6, X7 and X8 must be not connected (no jumper placed).

Module Fault

To indicate a module fault, all five LED's on the front panel will blink. All pulse outputs will be disabled (logic-0) and a fault code will be indicated on the LCD-display

100	Program halted on line 100
A54	Error 54 detected by CPU-A

Faults can be detected by processor A or by processor B. On the LCD-display the processor name is followed by a fault number listed below.

Fault	Description	Remedy
11	Input 1 discrepancy	Check input connections input 1
12	Input 2 discrepancy	Check input connections input 2
13	Input 3 discrepancy	Check input connections input 3
14	Input 4 discrepancy	Check input connections input 4
15	Program discrepancy	Replace module
20	Communication error	Check programming cable
21	No data from parallel CPU	Replace module
22	User program halted	Replace module
23	Unused interrupt	Replace module
24	Watch dog time out	Check program or replace module
38	User program fault	Check program or replace module
39	Operating system fault	Replace module
40	RAM-Memory CRC error	Switch power or replace module
41	Unable to switch off output 1	Switch power or replace module
42	Unable to switch off output 2	Switch power or replace module
43	Unable to switch off output 3	Switch power or replace module
44	Unable to switch off output 4	Switch power or replace module
45	Power supply fault (internal)	Replace module
46	General CPU fault	Replace module
49	General input fault	Replace module
51	RAM check fault	Replace module
52	EEPROM CRC-error	Switch power or replace module
53	Wrong program statement	Check program or replace module
54	Wrong program statement	Check program or replace module
55	Wrong program counter	Check program or replace module