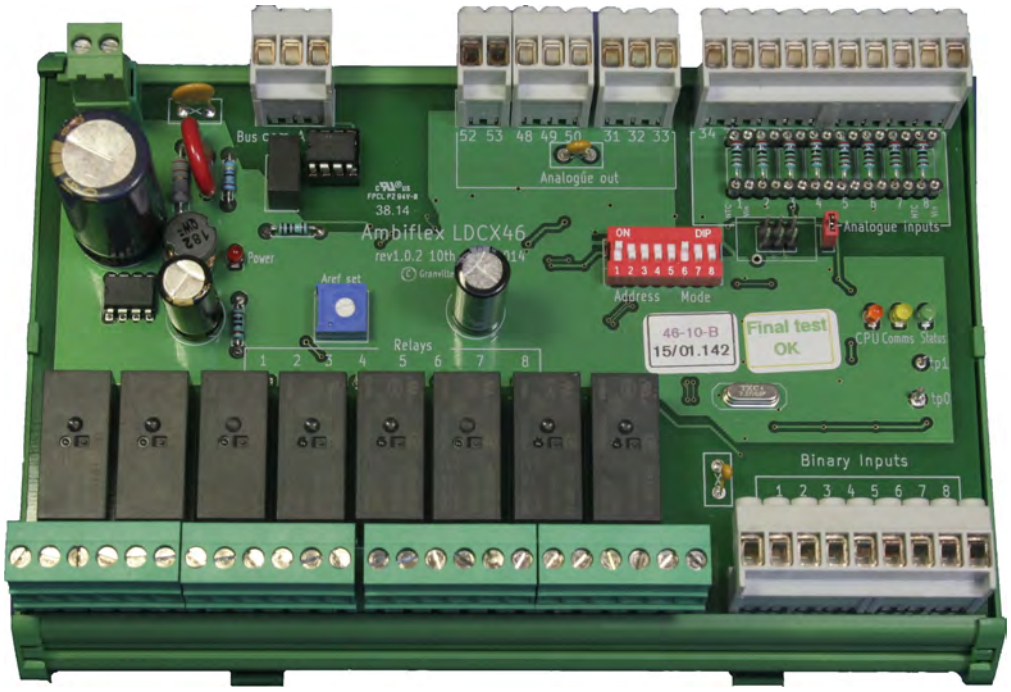
Ambiflex LDCX46

DIN rail mounting Input/Output card for MF3200 and MF82x systems

- Power 24V AC/DC
- Isolated RS485 bus
- 6 x 0..10V outputs
- 15VDC sensor supply output
- 8 x NTC/0..10V/4..20mA inputs
- 8 x Binary/pulse inputs 12..24V AC/DC
- 12V energy limited pulse metering supply output
- 8 x SPDT Power relay outputs
- All field connections pluggable



General:
LDCX46 is an input/output (I/O) card for MF3200 and MF82x BMS controller systems, providing a cost effective mix of highly configurable analog inputs, 0..10V analog ouputs, binary (aka 'digital') inputs for low voltage or VFC status sensing and pulse counting, and onboard changeover power relays. Robust DIN rail mounted construction, generously rated components and transient protection ensure reliable operation and long service life. On-card control processing gives optimum system integrity and loop response. Firmware can be updated to maximise usability over the full hardware lifetime.
Each MF3200 controller can support sixteen LDCX46 cards to give a combined total of up to 480 directly connected hardware data points.

Back compatability:
LDCX46 may be used to extend or replace LDCX cards in systems using the earlier MF82 series controllers, although system limits and point availability will be less than with MF3200 based systems. The exact limitations will depend on the application and the equipment already in use - please contact us for specific advice.

Power supply:
Nominal 24VAC or +24VDC, maximum loading 10VA.

Dimensions:
182 x 125 x 70mm

Analog inputs:
8 x NTC, 0..10VDC, 4..20mA. Individually configurable dual filtered with customisable hardware interface, scaling and offset. Low power NTC sensing to minimise self heating errors.
A regulated 15VDC output is available to provide power for active sensors.

Binary (digital) inputs:

8 x 24V AC/DC inputs optimised for VFC, low voltage and meter pulse contact detection each with LED input indicator.

An energy limited regulated 12VDC supply is provided for 'safe area' operation.

Analog outputs:

6 x 0..10VDC analog outputs. Max loading 10mA.

Relay (digital) outputs:

8 x SPDT power relays 8A contacts 230VAC (resistive) with indicator LEDs. Max continuous load each relay 5A.

Control connections:

2.5mm pluggable terminals.

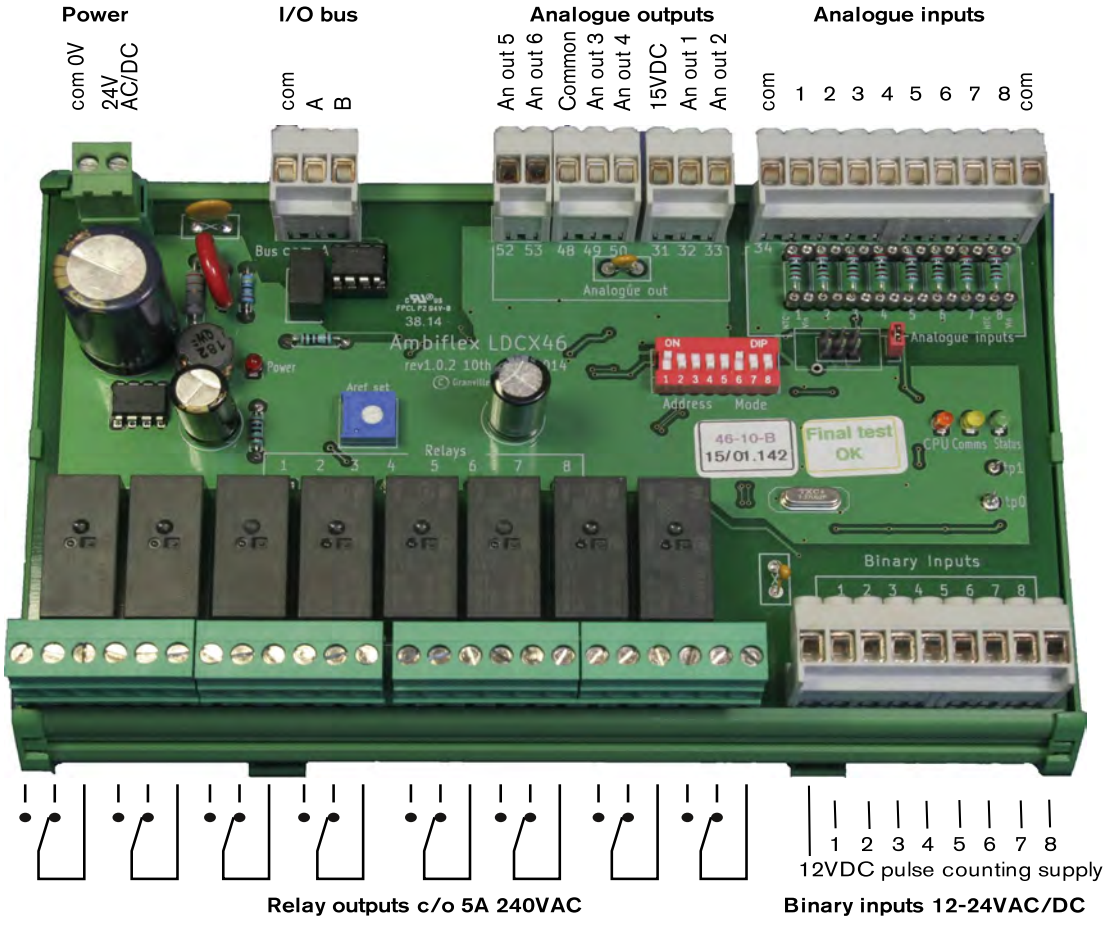
Signal level connections (analog inputs and outputs, binary inputs) should be in screened cable and installed so as to avoid crosstalk from common return currents or ground loops and to minimise pickup and coupling with power connections or other sources of EMI.

Communication bus:

Galvanically isolated RS485 bus running at 9600/38400 baud daisy chained to MF3200 or MF82x controller. Characteristic cable impedance 90..120 ohm, screened twisted pair with commoning core. Max length 1000m; terminate with 120 ohm + 1000pF series network.

Indicators:

LED indicators for power ok, CPU status, comms activity, online status, binary inputs and relay outputs.



Termination schedule

Relay 1,2 connector:
3 Rla1 n/c
4 Rla1 n/o
5 Rla1 com
6 Rla2 n/c
7 Rla2 n/o
8 Rla2 com

Relay 3,4 connector:
9 Rla3 n/c
10 Rla3 n/o
11 Rla3 com
12 Rla4 n/c
13 Rla4 n/o
14 Rla4 com

Relay 5,6 connector:
15 Rla5 n/c
16 Rla5 n/o
17 Rla5 com
18 Rla6 n/c
19 Rla6 n/o
20 Rla6 com

Relay 7,8 connector:
21 Rla7 n/c
22 Rla7 n/o
23 Rla7 com
24 Rla8 n/c
25 Rla8 n/o
26 Rla8 com

Binary (digital) input connectors:
51 Energy limited 12V output
27 Binin 1
28 Binin 2
29 Binin 3
30 Binin 4

44 Binin 5
45 Binin 6
46 Binin 7
48 Binin 8

Supply connector:
1 supply common / DC negative
2 supply 18..24VAC 50/60Hz, +18..36VDC

Bus connector:
Bus com - bus common
Bus A - RS485 line A
Bus B - RS485 line B

Analog output connectors:
52 An out 5
53 An out 6

48 An out common 0v
49 An out 3
50 An out 4

31 15VDC analog sensor supply output
32 An out 1
33 An out 2

Analog input connector:
34 Analog input common
35 An in 1
36 An in 2
37 An in 3
38 An in 4
39 An in 5
40 An in 6
41 An in 7
42 An in 8
43 Analog input common

Configuration switches

Bus address:

DIP switches 1..4 set the bus address. Binary weighted 1.. 16 thus

All off = address 1

1on, 2,3,4 off = address 2

...

1,2,3,4 all on = address 16

DIP switch 5 is reserved for future use - leave 'off'.

Bus mode:

DIP switches 6 and 7 set the bus comms mode :

6,7 off = 'std' mode (82x series compatability - max 8 cards)

6 off, 7 on = 'hs' mode

6 on, 7 off = 'hsx' mode (MF3200 with full support for 6 x analog outputs)

6 on,7 on - reserved, do not use.

Timer test mode:

DIP switch 8 'on' puts on-card delay timers into fast run test mode. Switch 'off' for normal use.

Analog inputs

Each analog input has two positions, 'NTC' and 'Volts', where appropriate conditioning resistors can be plugged in to configure it for different types of sensor or input signal.

Common configurations include:

NTC -20..40°C: 2k7 at NTC, omit Volts

NTC 0..120°C: 2k0 at NTC, omit Volts

0..10VDC: 12k0 at Volts, omit NTC

As standard the card is supplied with 2k7 resistors fitted for NTC operation: a set of 2k0 and 12k resistors is included in the termination kit.

For 4..20mA omit NTC and Volts resistors, connect 75ohms (not supplied) between input and common. Other ranges and functions (potentiometer inputs, PTC sensors etc) can be accepted: please contact us for specific advice.

NTC sensing is at low power (1.5V) and software linearised, resulting in improved range and accuracy with minimal self-heating error.

The host controller maintains selection, range and offset settings (including arbitrary ranging points for specialised inputs) which are automatically uploaded to the LDCX card as required.

If you have any questions or need further information please contact us:

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