

## *Operating Instructions*

# **CDtA 4L-W**

*addressable contact detector*





# Contents

Technical Data .....	4
Ordering Data .....	4
General Information .....	5
Designated Use .....	5
Safety Instructions .....	5
Function .....	6
Connection .....	7
The LANCIER Tx-Bus .....	8
Coding .....	8
Coding table .....	9
Function Test .....	9
Declaration of Conformity .....	12



## Important!

It is imperative to read and observe all safety instructions prior to initial operation!

## Technical Data

### Sensor

Measuring range	open / open loop / close / short
Input	dry contacts only
Transverse impulse stability at TxBus	1500 V DC at 10/700 µs
Time windows (addresses)	1
Operating cycle / address	2 s
Transmission time	1,5 s
Deviation from transmission time	≤ 100 ms
Reset time	≤ 200 ms
Modulation frequencies:	Short: 1792 Hz Close: 1536 Hz Open: 1280 Hz Open loop: 1024 Hz
Memory duration of latching:	max. 600 s
Supply voltage range	20 - 120 V DC
Quiescent current typ.	120 µA
Rated DC current typ.	5,4 mA
Modulation current typ.	3,6 mA <sub>pp</sub>
Operating temperature	-20...+60 °C
Storage temperature	-40...+90 °C
Protection class	IP 67
Dimensions (W x H x D)	120 x 80 x 55 mm
Weight	approx. 200 g

### Door contacts

#### Magnet

Dimensions (L x W x H)	38.1 x 25.4 x 9.6 mm
------------------------	----------------------

#### Contact switch

Dimensions (L x W x H)	74.9 x 19.1 x 9.6 mm
Switching distance:	13 to 25 mm

## Ordering Data

### Sensor CDtA 4L-W

Order no. 064000.000

### Accessories

#### Door contacts

magnetic reed contact with make and brake contact

#### Magnet

Order no. 064949.000

#### Contact switch

Order no. 060162.000

## General Information

These operating instructions should make it easier for you to become acquainted with the product. They contain important information to ensure safe, appropriate and cost-effective use of the equipment.

The operating instructions endorse the directives of national regulations for the prevention of accidents and the protection of the environment.



**These operating instructions shall be read and adopted by anyone assigned to work with/on the equipment, e. g. during operation to include setting-up, maintenance trouble-shooting.**

In addition to the operating instructions and the mandatory regulations for the prevention of accidents, applicable in the operator's country and at the place of use, the recognized technical regulations for safe and professional operation shall also be observed.

## Designated Use

The CDtA contact detector is designed to monitor dry contacts, even if the state is only changed for short terms.

Any non-compliant use excludes the manufacturer from liability for any damages. The operator carries the risk!

## Safety Instructions



**Important!**  
**Read and observe safety instructions prior to initial operation!**

- Keep the operating instructions ready to hand!



**Accident prevention!**  
**All circuit lines must be dead before mounting or dismounting of the sensor or the opening of the sensor housing !**

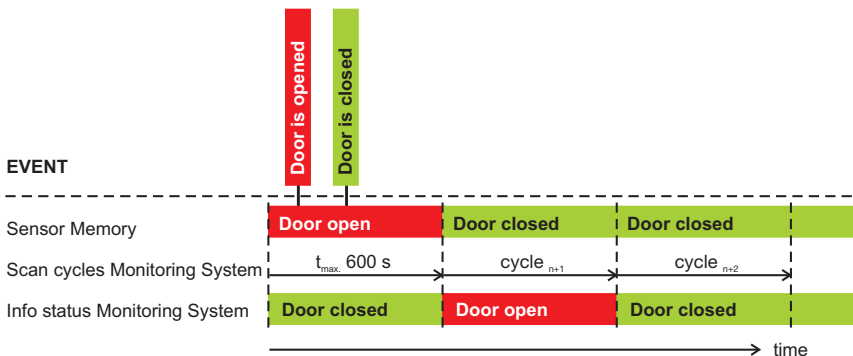
- The unit should only be operated in technically-sound condition, for its designated use, with safety and risk awareness in mind, taking into account the operating instructions. In particular, operational faults, which can compromise safety, should be rectified immediately!
  - Do not make any modifications to the equipment!
  - Mounting, maintenance and repair work should only be performed by trained personnel!
  - Only use original LANCIER replacement parts!
-

## Function

The addressable contact detector CDtA 4L-W is applied in the LANCIER Monitoring-System to monitor dry contacts, even if the state is only changed for short terms. The electronic is placed in a sturdy housing (IP 67) and can also be used under rough environmental conditions. Applications are manhole openings, all kinds of access supervision. In networks already supplied with addressable sensors (e. g. for pressure, humidity) this additional function can be built-in very economically.

The contact connected to the detector is monitored for 4 conditions. Open and closed contacts are recognized as well as short circuits or open loops in the connection between the sensor and the contact.

The CDtA 4L-W recognizes the 4 possible state conditions and converts them into significant frequencies. Every change in condition is stored for max. 600 seconds in its memory until the LANCIER monitoring system has read the information.



- The detector memory stores the first upcoming event (state of the contactor) for maximum 600 s.
- The monitoring system reads the detector memory once each scan cycle. The period of a scan cycle depends on the installation of the surveilled net (e. g. number of sensors and detectors). It must not exceed 600 s.
- After the detector's memory has been read and cleared by the monitoring system, it will store the actual state of the contactor.

## Connection



### Important!

Mounting, maintenance and repair work should only be performed by trained personnel!



### Accident prevention!

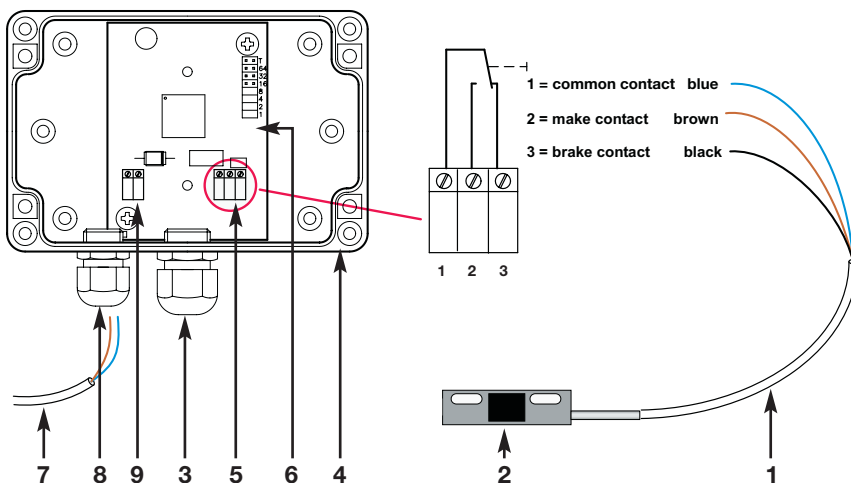
All circuit lines must be dead before mounting or dismounting of the sensor or the opening of the sensor housing !



### Important!

In accordance to the Directive 98/37/EEC, the length of the connection cable shall not exceed 3 meters!

- Lead the connection cable (1) of the switch (2) through the conduct fitting (3) of the housing (4).
- Connect the connection cable (1) of the switch to the termination clamps (5) on the PC board (6) according to the connection diagram shown in the drawing below.
- Lead the sensing pair cable (7) through the conduct fitting (8) of the housing (4).
- Connect the supervision pair (7) to the termination clamps (9) on the PC board (6).



# The LANCIER Tx-Bus

A maximum of 127 addressable transducers can be connected to one supervision pair.

The measured values of all sensors connected to the Lancier monitoring system are transmitted in time intervals. Therefore all installed sensors must be coded before being installed.

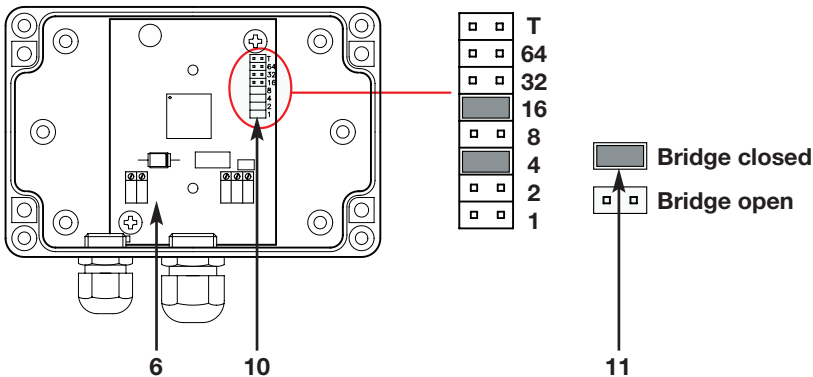
## Coding



## Accident prevention!

**All circuit lines must be dead before mounting or dismounting of the sensor or the opening of the sensor housing !**

- Open the housing.
- The coding bridge **(10)** is placed on the detector's PC board **(6)**.
- Set the code by placing (closing) or removing (opening) jumpers **(11)** to the contacts with needle-nosed pliers.
- The test bridge „T“ must stay open = no jumper.
- Mark the adjusted code onto the transducer label with a water-proof pen.
- Close the housing:



Address in example:  $16 + 4 = 20$



## Coding table

Code	64	32	16	8	4	2	1
1							■
2						■	
3					■	■	
4					■		
5					■	■	
6					■	■	
7					■	■	
8					■		
9					■	■	
10					■	■	
11					■	■	
12					■	■	
13					■	■	
14					■	■	
15					■	■	
16					■		
17					■	■	
18					■	■	
19					■	■	
20					■	■	
21					■	■	
22					■	■	
23					■	■	
24					■	■	
25					■	■	
26					■	■	
27					■	■	
28					■	■	
29					■	■	
30					■	■	
31					■	■	
32					■	■	

■ Bridge closed (jumper set)

Code	64	32	16	8	4	2	1
33							■
34						■	
35						■	
36						■	
37						■	
38						■	
39						■	
40						■	
41						■	
42						■	
43						■	
44						■	
45						■	
46						■	
47						■	
48						■	
49						■	
50						■	
51						■	
52						■	
53						■	
54						■	
55						■	
56						■	
57						■	
58						■	
59						■	
60						■	
61						■	
62						■	
63						■	
64						■	

Code	64	32	16	8	4	2	1
65							■
66						■	
67						■	
68						■	
69						■	
70						■	
71						■	
72						■	
73						■	
74						■	
75						■	
76						■	
77						■	
78						■	
79						■	
80						■	
81						■	
82						■	
83						■	
84						■	
85						■	
86						■	
87						■	
88						■	
89						■	
90						■	
91						■	
92						■	
93						■	
94						■	
95						■	
96						■	

□ Bridge open (jumper removed)

Code	64	32	16	8	4	2	1
97							■
98						■	
99						■	
100						■	
101						■	
102						■	
103						■	
104						■	
105						■	
106						■	
107						■	
108						■	
109						■	
110						■	
111						■	
112						■	
113						■	
114						■	
115						■	
116						■	
117						■	
118						■	
119						■	
120						■	
121						■	
122						■	
123						■	
124						■	
125						■	
126						■	
127						■	

## Function Test

Each transducer has to be checked with the Lancier Testbox (Order no. 050833.000) for accurate function and coding. The necessary steps are described in the manual of the Testbox.



### Important!

Check all transducers before use, in order to avoid later malfunction!





## **Declaration of Conformity**

according to directive 98/37/EEC

We declare under our sole responsibility, that the product

**Make: LANCIER Monitoring**  
**Type: CDtA 4L-W**

to which this declaration relates corresponds to the relevant basic safety and health requirements of the directive 98/37/EEC, and to the requirements of the other relevant directives:

**73/23/EWG**  
**89/336/EWG**

For the relevant implementation of the safety and health requirements mentioned in the directives, the following standard(s) and/or technical specification(s) has (have) been respected:

**GSG**  
**EN 61000-6-3/4**  
**EN 61000-6-1/2**

Münster, 15 March 2004

  
Research and Development

  
Managing Director