Technical Data

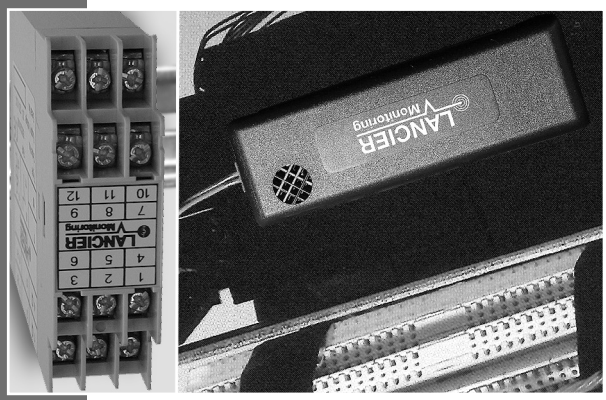
Measuring range		open / broke / close / short
Transverse impulse stability at Tx-bus		1500 V DC at 10/700 µs
Time windows (addresses)		1
Operating cycle / address		2 s
Transmission time		1.5 s
Deviation from transmission time		≤ 100 ms
Reset time		≤ 200 ms
Supply voltage		20 .. 120 V DC
Quiescent current typ.		50 µA
Rated DC current typ.		5.4 mA
Modulation current typ.		3.6 mA_{pp}
Operating temperature		-20 .. +70 °C
Storage temperature		-30 .. +80 °C
Dimensions	Housing -S	97 x 22 x 75 mm (L x W x H)
	Housing -PM	88 x 30 x 16 mm (L x W x H)

Ordering Data

Contact Sensor CTxA 4S-S	**Order-no. 050668.000**
Contact Sensor CTxA 4S-PM	**Order-no. 043775.000**
Accessory	
Fixing bar	
for 5 snap-on housings, length 125 mm	**Order-no. 041444.000**

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

BA 073528.020/09.07



Operating Instruction

CTxA 4 S

Housing type -PM and -S
Addressable Contact Sensor

LANCIER Monitoring

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 CTxA contact sensor is designed to monitor electric contact conditions.
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!

EC Declaration of Conformity

in accordance with EC directives 98/37/EC

We declare under our sole responsibility that the product

Make: **LANCIER Monitoring**
Type: **CTxA 4S-S and -PM**

to which this declaration refers, meets the relevant health and safety requirements of the EC directive 98/37/EC, as well as the requirements of other relevant EC directives.

73/23/EEC	**Low voltage directive**
89/336/EEC	**Electromagnetic compatibility**

For proper implementation of the health and safety requirements named in the EC directives the following standard(s) and/or technical specification(s) have been consulted:

EN 61000-6-3/4	**Emitted interference**
EN 61000-6-1/2	**Interference resistance (fault-free operation)**

Münster, 02 November 2006

Research and Development

Managing Director

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LANCIER Monitoring

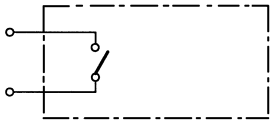
Accident prevention!
All circuit lines must be dead before mounting or dismounting of the sensor or the opening of the sensor housing!

- The sensor 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 sensor!
- Mounting, maintenance and repair work should only be performed by trained personnel!
- Only use original LANCIER Monitoring replacement parts!

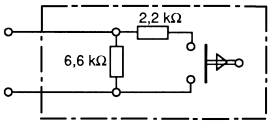
Function

The addressable contact sensor CTxA 4S recognizes 2 or 4 states of the connected contact and transduces them into output frequencies, viz:

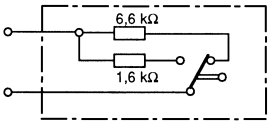
- **Switch or relay contact**
  „open“ = 1024 Hz
  „closed“ = 1792 Hz



- **Safety make contact with automatic reset**
  „open “ = 1280 Hz
  „closed “ = 1536 Hz
  „line disconnection“ = 1024 Hz
  „line short-circuit“ = 1792 Hz



- **Safety change-over switch**
  „off position“ = 1280 Hz
  „on position“ = 1536 Hz
  „line disconnection“ = 1024 Hz
  „line short-circuit“ = 1792 Hz



To ensure a reliable monitoring function of the three different contacts, the resistors indicated above must be installed by the customer. The permitted tolerance of the resistors is ±1%. The line length between the contact and the sensor must not exceed 10 m.

The sensor is integrated into the monitoring system by the LANCIER Tx-bus.

The LANCIER Tx-bus

A maximum of 127 addressable sensors can be connected to one Tx-bus pair.

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

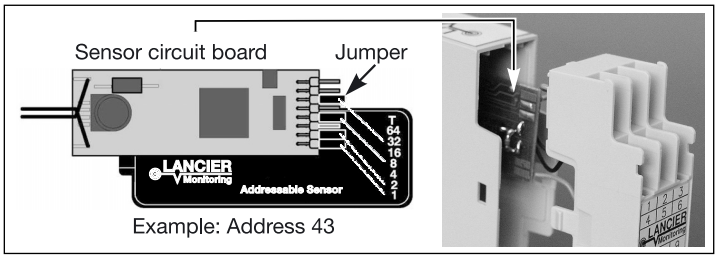
Coding

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.
- Lift side clamping straps with a screw driver.

Important!
Obey handling instructions.
Electrostatic discharge (ESD) damage.

- Take sensor circuit board out carefully.
- Place the jumpers with needle-nose pliers according to the required address and the coding table next page.
- Place the jumpers only on one pin if contact should stay open.



- The test bridge (T) must stay open.
- Mark the adjusted code onto the sensor label with a water-proof pen.
- Close housing:
  Put sensor circuit board into housing. Place cables into cable bushing and close housing. Take care that clamping straps snap in properly.

Important!
Do not clamp the wires while closing the housing!

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		▬					

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	▬				▬	▬	▬
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83	▬		▬			▬	▬
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90	▬		▬	▬		▬	
91	▬		▬	▬		▬	▬
92	▬		▬	▬	▬		
93	▬		▬	▬	▬		▬
94	▬		▬	▬	▬	▬	
95	▬		▬	▬	▬	▬	▬
96	▬	▬					

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	▬	▬	▬	▬	▬	▬	▬

▬ Coding bridge closed ▭ Coding bridge open

Function Test

Each sensor 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.

Mounting

- Check sensor for correct address code (visually / Testbox).
- Open sleeve (housing -PM only).
- Fix sensor to a rod of the sleeve (housing -PM) or to a fixing bar (housing -S).
- Identify supervision pair and check it with the Testbox.
- Connect sensor **Housing -PM**:
  Contact input = two black wires (polarity safe)
  Supervision pair = two green wires
- Connect sensor **Housing -S**:
  Contact input = terminal 3 and 6 (polarity safe)
  Supervision pair = **a** to terminal 1 or 2
  = **b** to terminal 4 or 5
- Check sensor function on pair with Testbox.
- Close sleeve (housing -PM only).

Risk of damage to property!
If the sleeve is heated beyond the maximum allowed sensor storage temperature (90 °C) (e. g. for soldering the lead sleeve), the sensor must be wrapped with heat resistant material (paper tape i. a.) and placed in the sleeve's centre.

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