ifm electronic

CE

Mounting and installation instructions

Positioning of the ID tags with regard to the read/write head

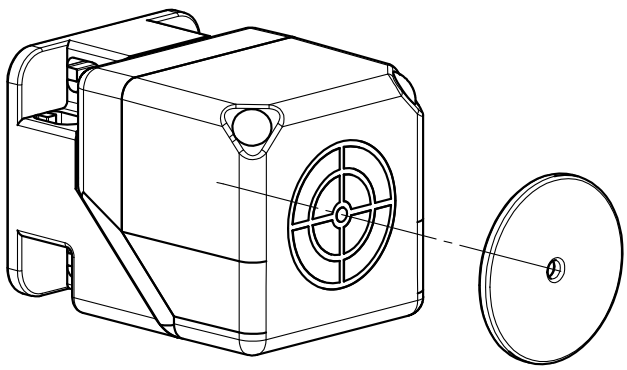
UK

Installation of the ID tags in/on metal

efector190®

ANT513 and E8037x

706120 / 00 07 / 2014



Contents

1 Preliminary note

1.1 Scope

This document describes the ideal positioning of the ID tags (RFID transponders) E8037x with regard to the read/write head ANT513 as well as the achievable read/write distances when the ID tags are installed in/on metal.

1.2 Symbols used

► Instructions

→ Cross-reference


Important note
Non-compliance can result in malfunction or interference


Information
Supplementary note

1.3 More information

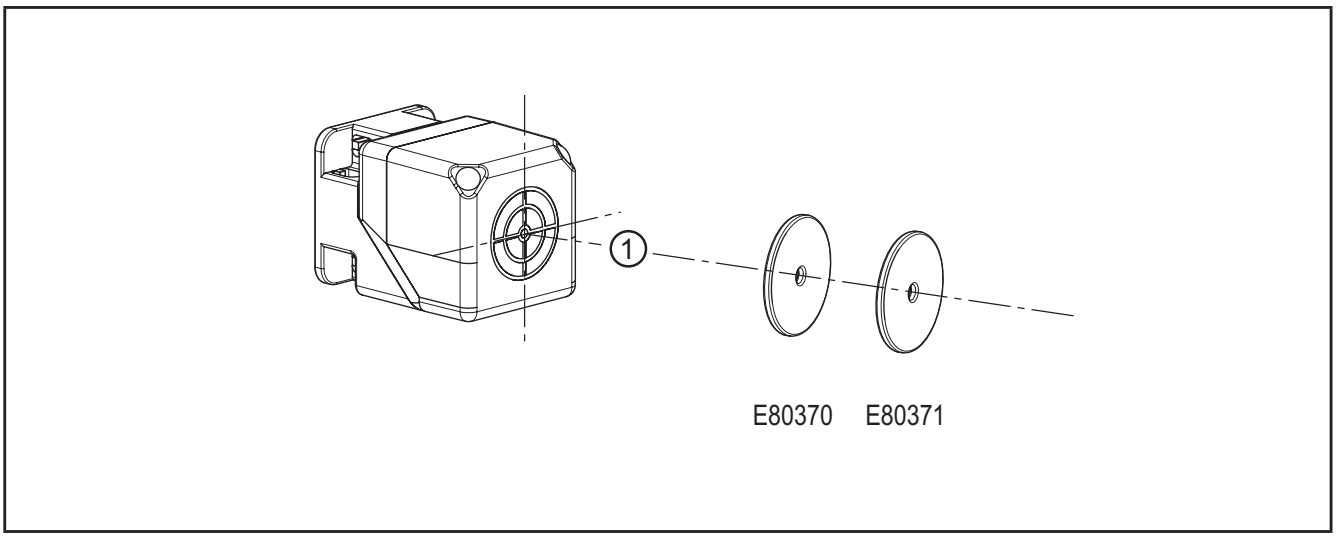
Technical data sheets:
www.ifm.com → Data sheet search → e.g. E80370

Installation instructions ANT513:
www.ifm.com → Data sheet search → ANT513 → More information

2 General installation instructions

If the ID tags are mounted in/on metal, the read/write distance is reduced.

- ► Install the ID tags centred to the antenna symbol on the front side of the read/write head.
- ► Ensure in dynamic applications that the ID tags pass the middle of the antenna symbol.



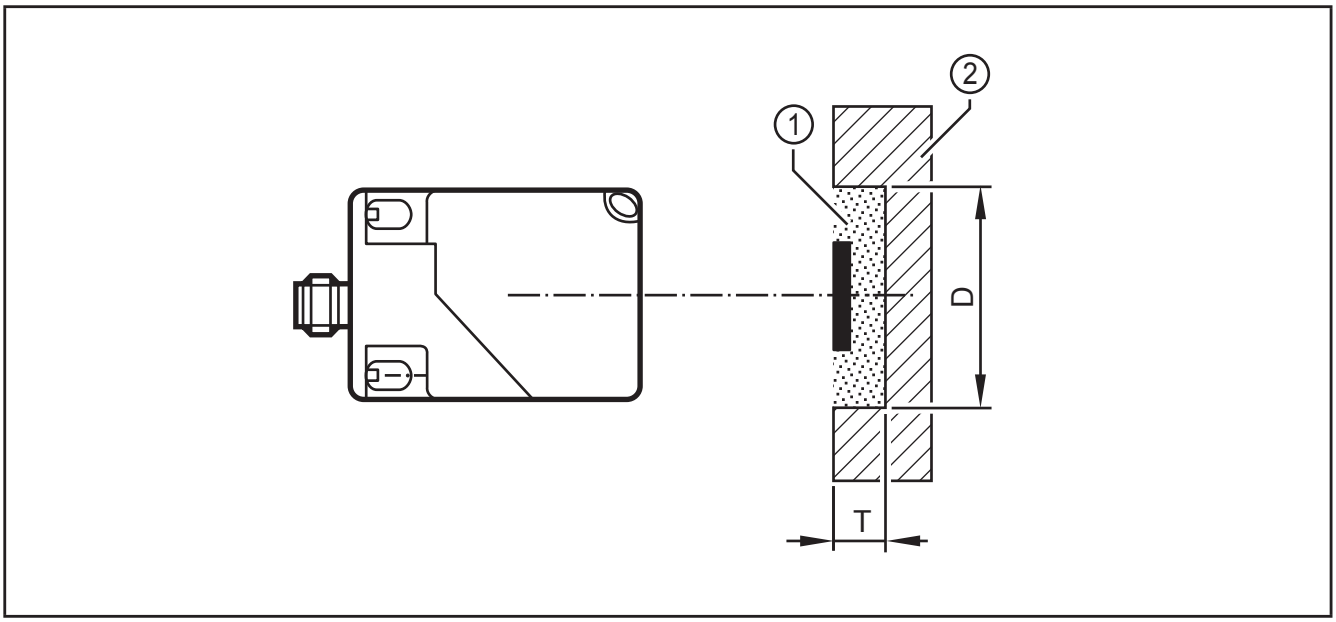
1: Marking middle of the antenna = middle of the ID tag

3 ID tag flush mounted in metal

► Install the ID tag flush and centred in a circular recess. Take into account the diameter and the minimum depth of the recess.

► Fill the space between the ID tag and the metal carrier with a non-metallic filling compound (e.g. glue or cast resin).

3.1 Dimensions of the recess



1: Non-metallic filling compound
2: Metal

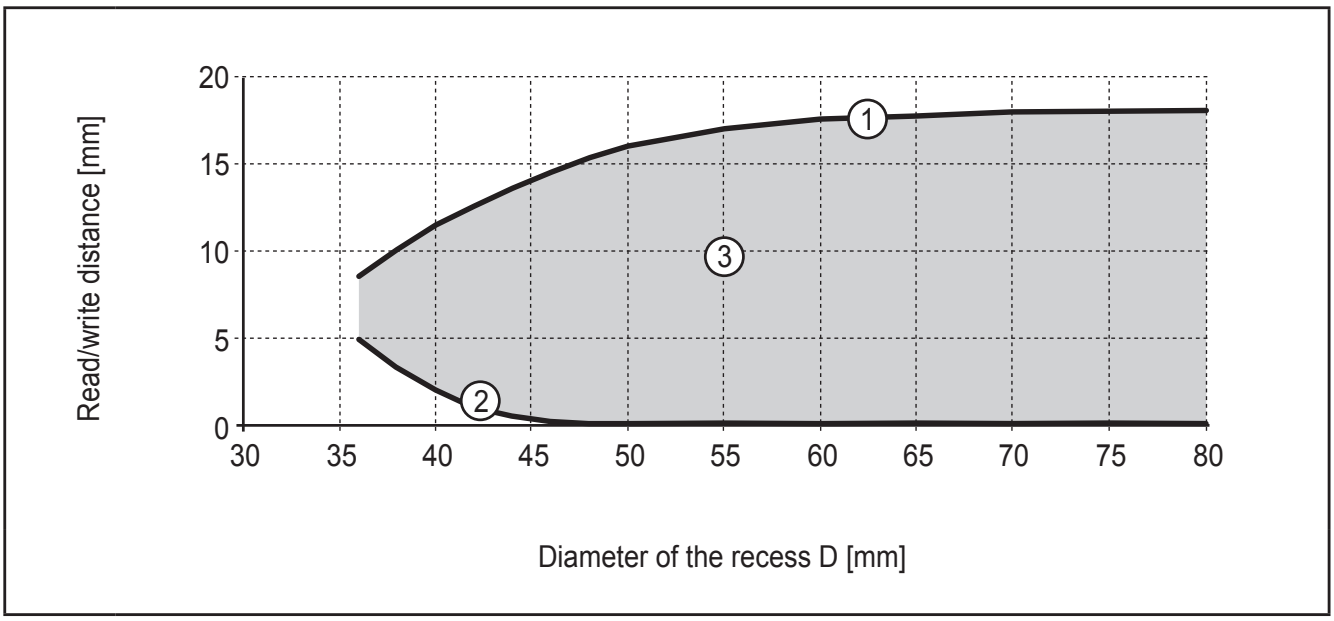
ID tag	Diameter of the recess D [mm]	Depth T [mm]
E80370	≥ 30	≥ 5
E80371	≥ 30	≥ 5

3.2 Read/write distances for flush installation in metal

The achievable read/write distances depend on the diameter D and depth T of the recess in the metal carrier.

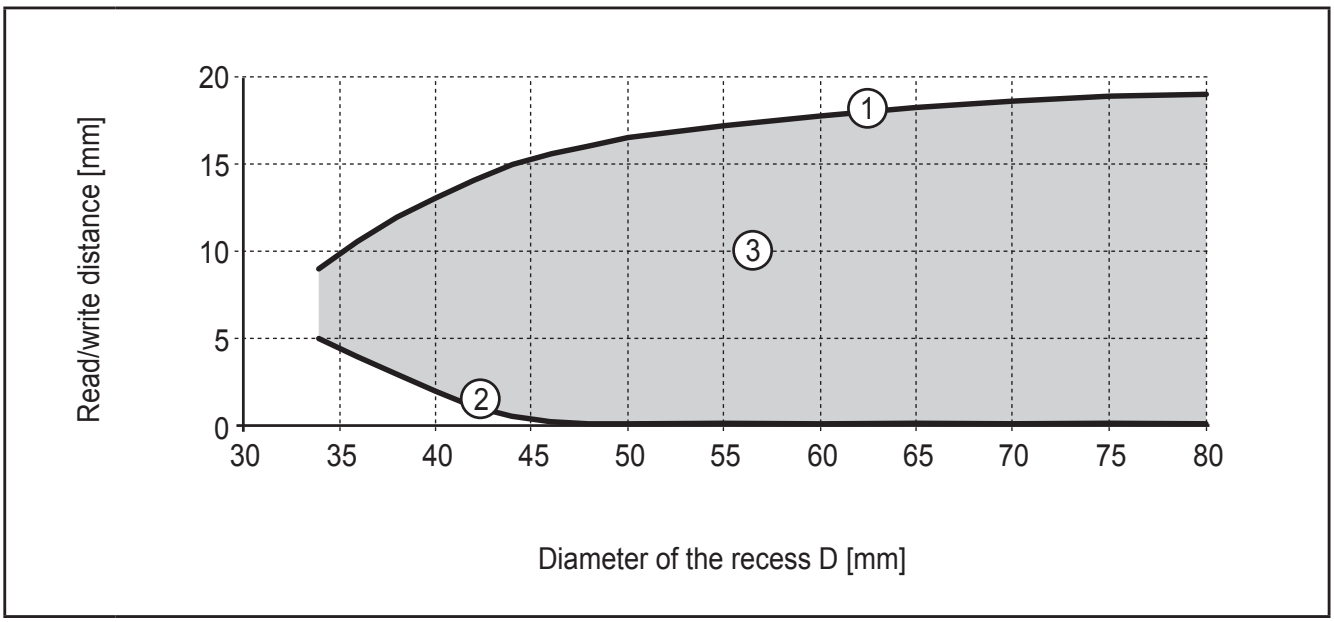
The following read/write distances apply from a minimum depth T = 5 mm.

3.2.1 E80370 read/write distance



1: Upper limit
2: Lower limit
3: Read/write area

3.2.2 E80371 Read/write distance

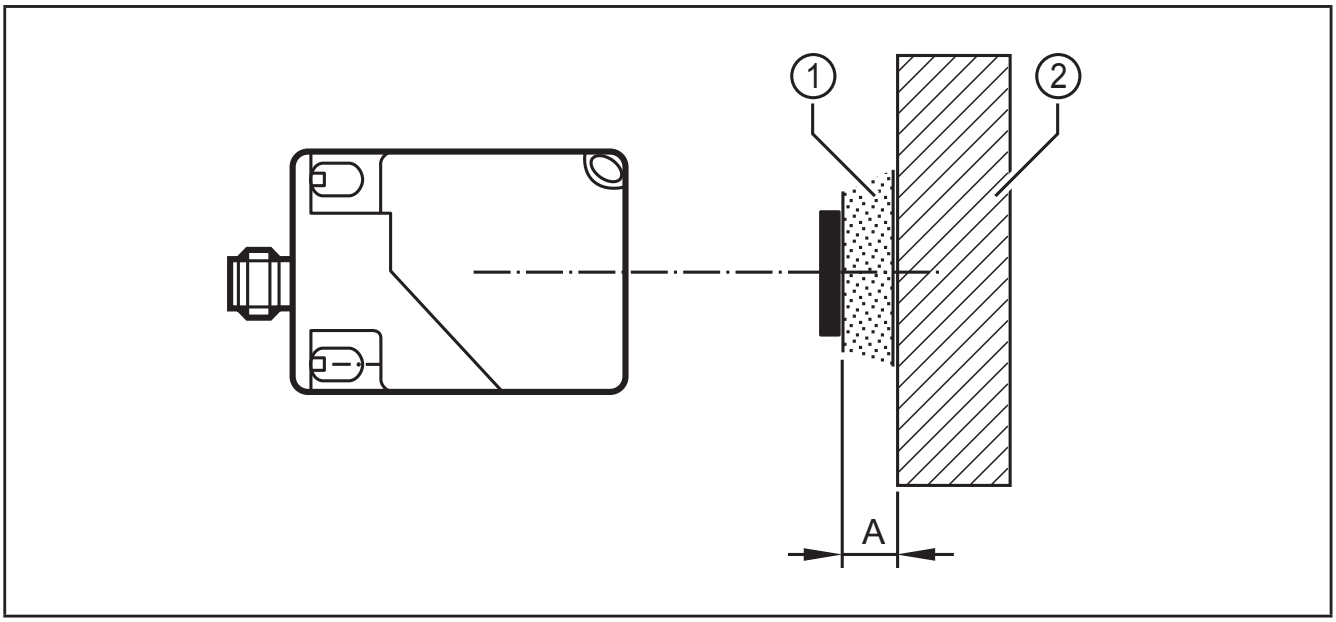


1: Upper limit
2: Lower limit
3: Read/write area

4 ID tag at a distance from the metal

► Mount a non-metallic spacer between the ID tag and the metal carrier.

4.1 Installation dimensions



1: Non-metallic spacer
2: Metal

4.2 Read/write distances at a distance from the metal

ID tag	Distance from metal A [mm]		
	5	10	15
	read / write	read / write	read / write
E80370	25	40	45
E80371	30	50	55

Read/write distances in mm

5 Memory allocation

The following tables show the memory allocation of the tag identification (UID) and user data.

On delivery no memory contents are defined.

5.1 E80370

Tag identification (UID)								
	MSByte	...	...	...	...	...	...	LSByte
UID byte	7	6	5	4	3	2	1	0
UID bit	63..56	55..48	47..42	41..33	32..24	23..16	15..8	7..0

User data									
	Address (hex)	MSByte	...	...	...	...	...	...	LSByte
Block 0	0x0000	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 1	0x0008	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 2	0x0010	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 3	0x0018	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 4	0x0020	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 5	0x0028	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 6	0x0030	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 7	0x0038	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 8	0x0040	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 9	0x0048	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
..	...	...	...	...	...	...	...	...	...
Block 247	0x07B8	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 248	0x07C0	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0
Block 249	0x07C8	Data 7	Data 6	Data 5	Data 4	Data 3	Data 2	Data 1	Data 0

Size of every memory location "Data..." = 1 byte

5.2 E80371

Tag identification (UID)								
	MSByte	...	...	...	...	...	...	LSByte
UID byte	7	6	5	4	3	2	1	0
UID bit	63..56	55..48	47..42	41..33	32..24	23..16	15..8	7..0

User data					
	Address (hex)	MSByte	...	...	LSByte
Block 0	0x0000	Data 3	Data 2	Data 1	Data 0
Block 1	0x0004	Data 3	Data 2	Data 1	Data 0
Block 2	0x0008	Data 3	Data 2	Data 1	Data 0
Block 3	0x000C	Data 3	Data 2	Data 1	Data 0
Block 4	0x0010	Data 3	Data 2	Data 1	Data 0
Block 5	0x0014	Data 3	Data 2	Data 1	Data 0
Block 6	0x0018	Data 3	Data 2	Data 1	Data 0
Block 7	0x001C	Data 3	Data 2	Data 1	Data 0
Block 8	0x0020	Data 3	Data 2	Data 1	Data 0
Block 9	0x0024	Data 3	Data 2	Data 1	Data 0
...	...	...	...	...	...
Block 25	0x0064	Data 3	Data 2	Data 1	Data 0
Block 26	0x0068	Data 3	Data 2	Data 1	Data 0
Block 27	0x006C	Data 3	Data 2	Data 1	Data 0

Size of every memory location "Data..." = 1 byte