



Mounting and installation instructions

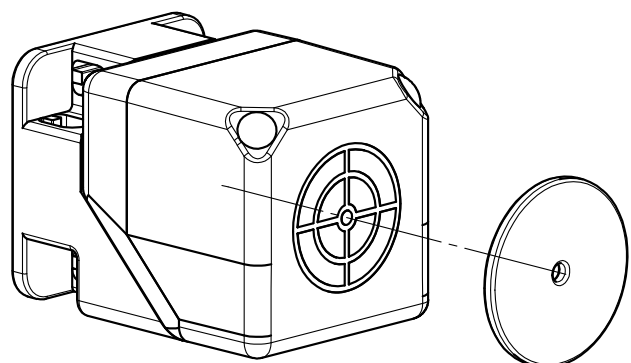
Positioning of the ID tags  
with regard to the read/write head

Installation of the ID tags in/on metal

UK

**efector190<sup>®</sup>**

**ANT512 and E8036x**



# Contents

1 Preliminary note . . . . .	2
1.1 Scope . . . . .	2
1.2 Symbols used . . . . .	2
1.3 More information . . . . .	3
2 General installation instructions . . . . .	3
3 ID tag flush mounted in metal . . . . .	4
3.1 Dimensions of the recess . . . . .	4
3.2 Read/write distances for flush installation in metal . . . . .	5
3.3 E80360 read distance . . . . .	5
3.4 E80360 write distance . . . . .	5
3.5 E80361 read distance . . . . .	6
3.6 E80361 read distance . . . . .	6
4 ID tag at a distance from the metal . . . . .	7
4.1 Installation dimensions . . . . .	7
4.2 Read/write distances at a distance from the metal . . . . .	7
5 Memory allocation . . . . .	8
5.1 E80360 . . . . .	8
5.2 E80361 . . . . .	8

## 1 Preliminary note


### 1.1 Scope


This document describes the ideal positioning of the ID tags (RFID transponders) E8036x with regard to the read/write head ANT512 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](http://www.ifm.com) → Data sheet search → e.g. E80360

Installation instructions ANT512:

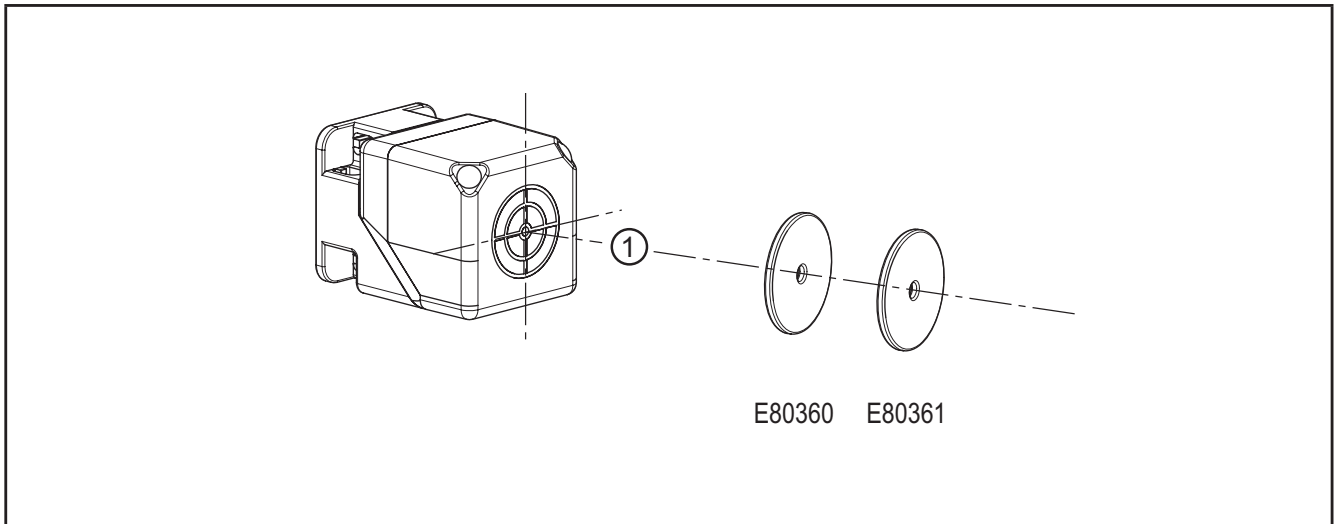
[www.ifm.com](http://www.ifm.com) → Data sheet search → ANT512 → More information

## 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.

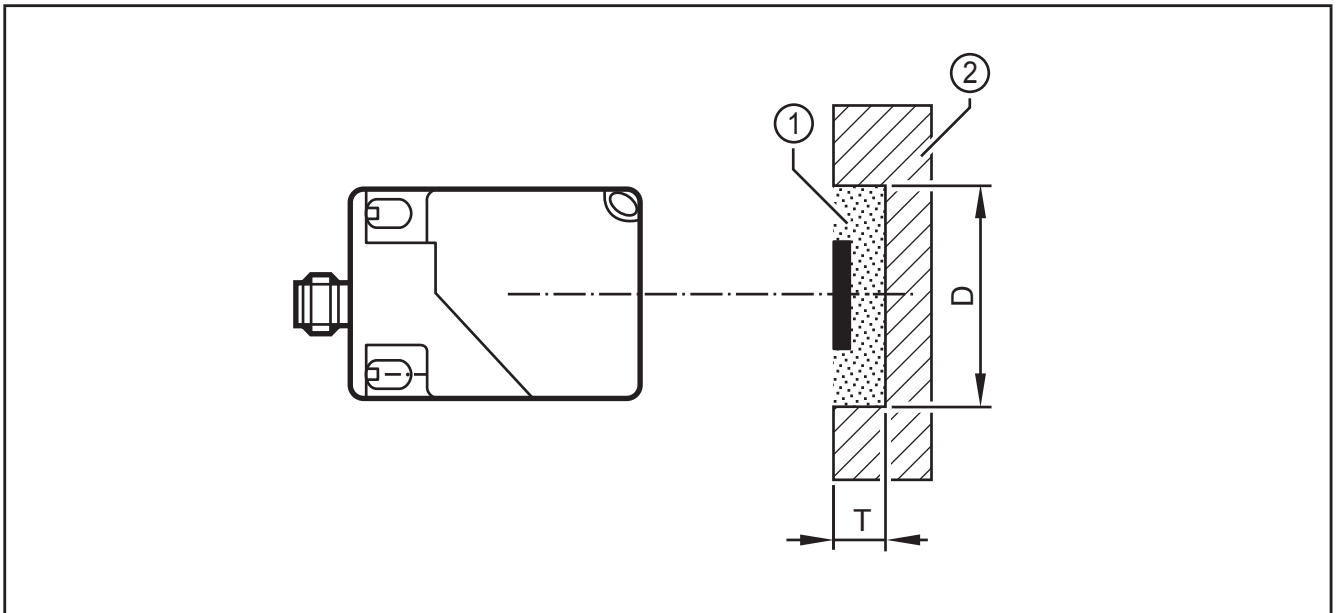


1: Marking middle of the antenna = middle of the ID tag

### 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

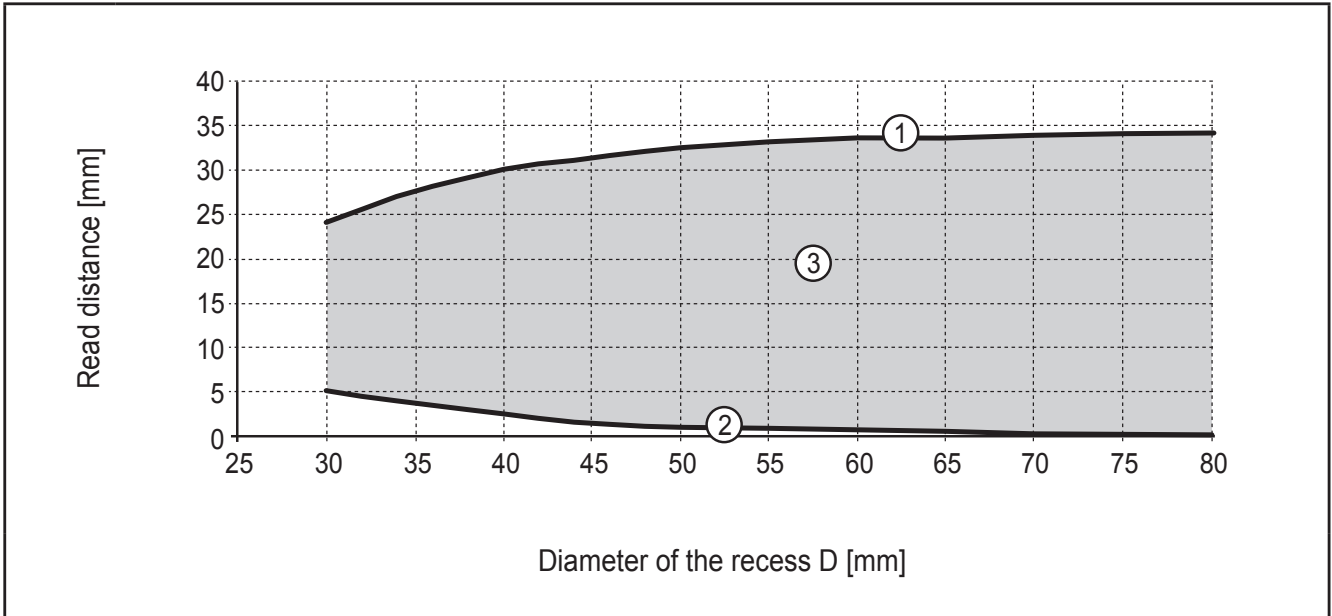
ID tag	Diameter of the recess D [mm]	Depth T [mm]
E80360	$\geq 30$	$\geq 5$
E80361	$\geq 30$	$\geq 5$

### 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.

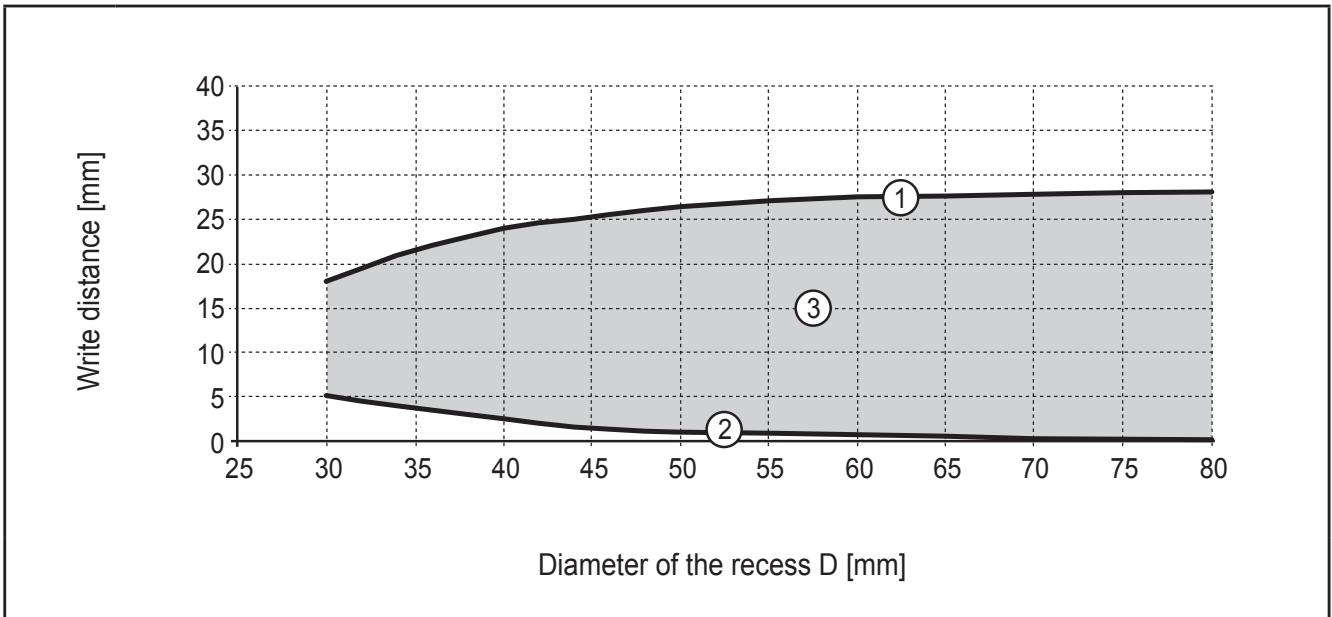
The following read/write distances apply from a minimum depth T = 40 mm.

### 3.3 E80360 read distance



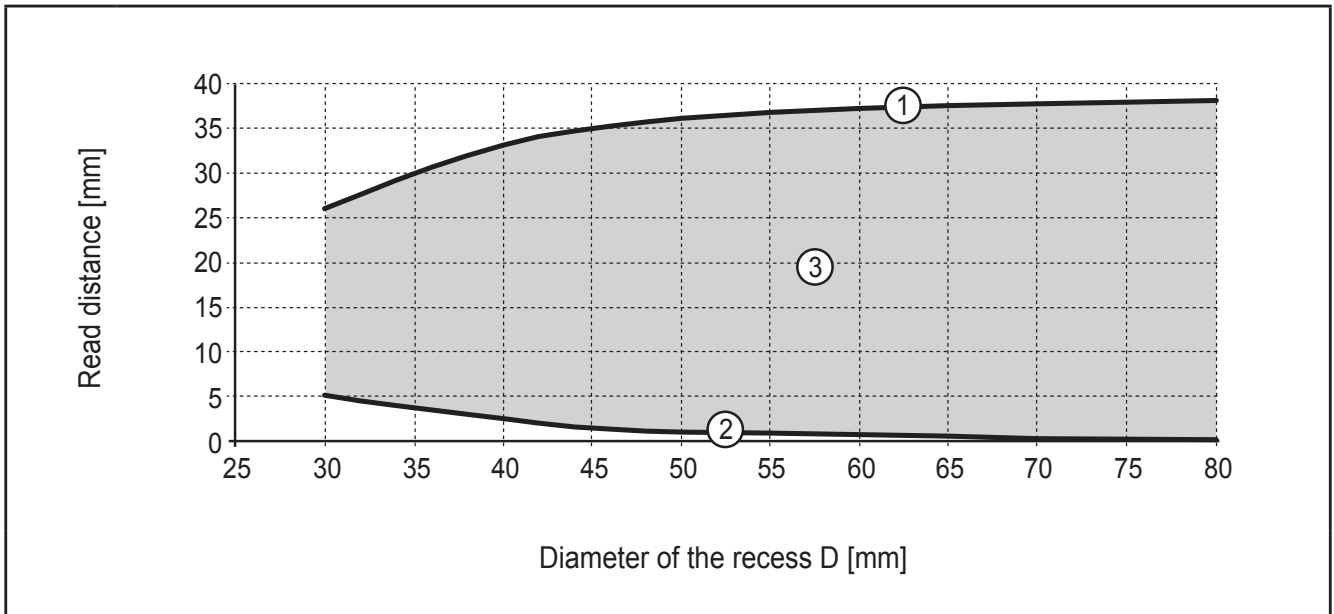
- 1: Upper limit
- 2: Lower limit
- 3: Read area

### 3.4 E80360 write distance



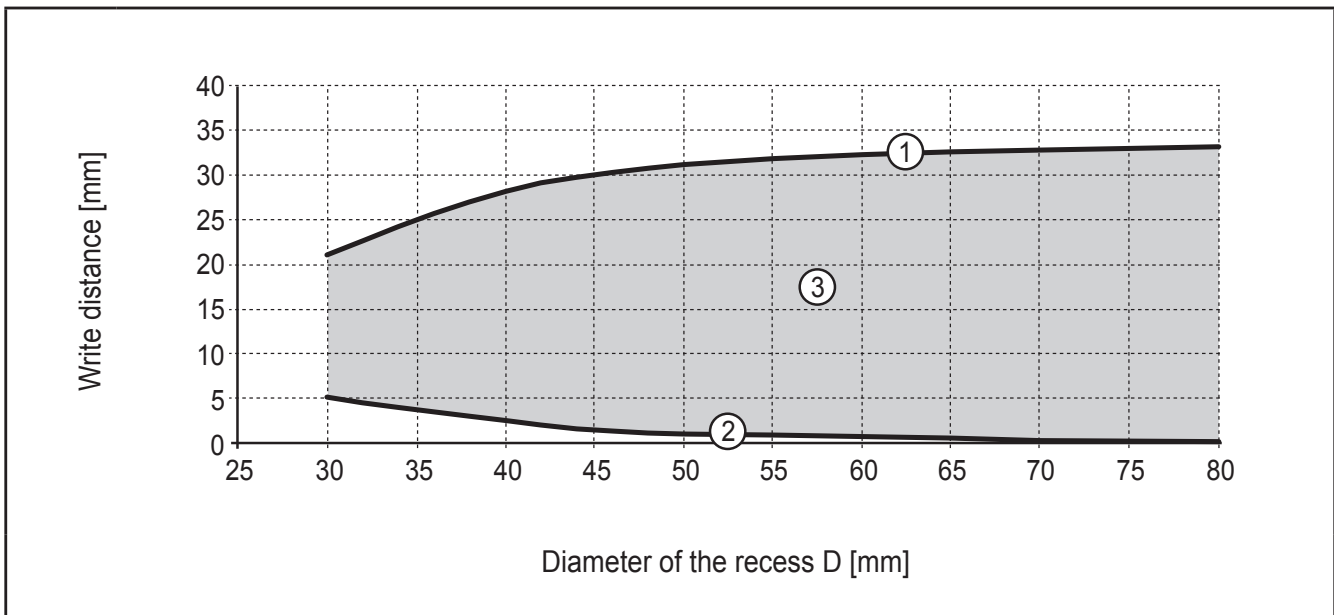
- 1: Upper limit
- 2: Lower limit
- 3: Write area

### 3.5 E80361 read distance



- 1: Upper limit
- 2: Lower limit
- 3: Read area

### 3.6 E80361 write distance

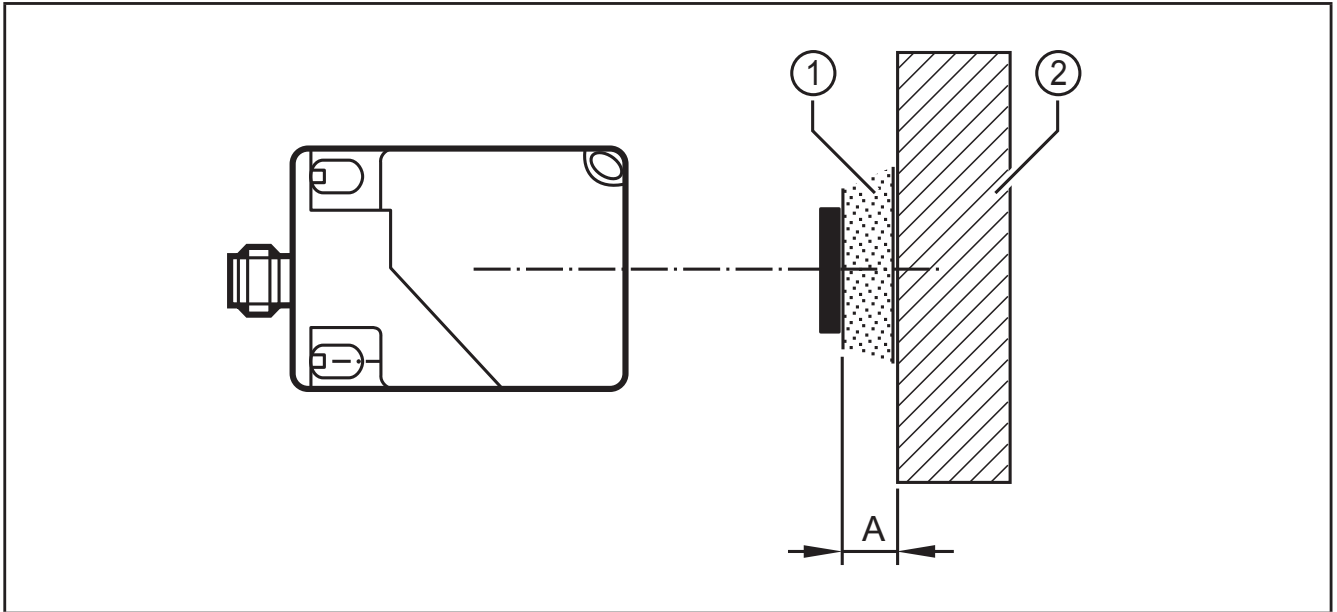


- 1: Upper limit
- 2: Lower limit
- 3: Write area

## 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]							
	0		5		10		15	
	read	write	read	write	read	write	read	write
E80360	20	15	50	45	55	50	60	55
E80361	20	15	45	40	50	45	55	50

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 E80360

Tag identification (UID)				
	MSByte	...	...	LSByte
UID byte	3	2	1	0
UID bit	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

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

### 5.2 E80361

Tag identification (UID)				
	MSByte	...	...	LSByte
UID byte	3	2	1	0
UID bit	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



User data					
	Address (hex)	MSByte	...	...	LSByte
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 59	0x00EC	Data 3	Data 2	Data 1	Data 0
Block 60	0x00F0	Data 3	Data 2	Data 1	Data 0
Block 61	0x00F4	Data 3	Data 2	Data 1	Data 0

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

