

## Medium and Long Range Antenna OIS-P PC3114/00B, PC3114/01B

The Antennas, PC3114/00B and PC3114/01B, are part of the PC3100 series in the OIS-P family and are used for communication with PC3100 series data tags.

They are designed and built for fast data transfer, high reliability and long life applications, where a dynamic communication distance from zero up to 2 metres or alternatively zero up to 4 metres is desired.

The rugged and excellent

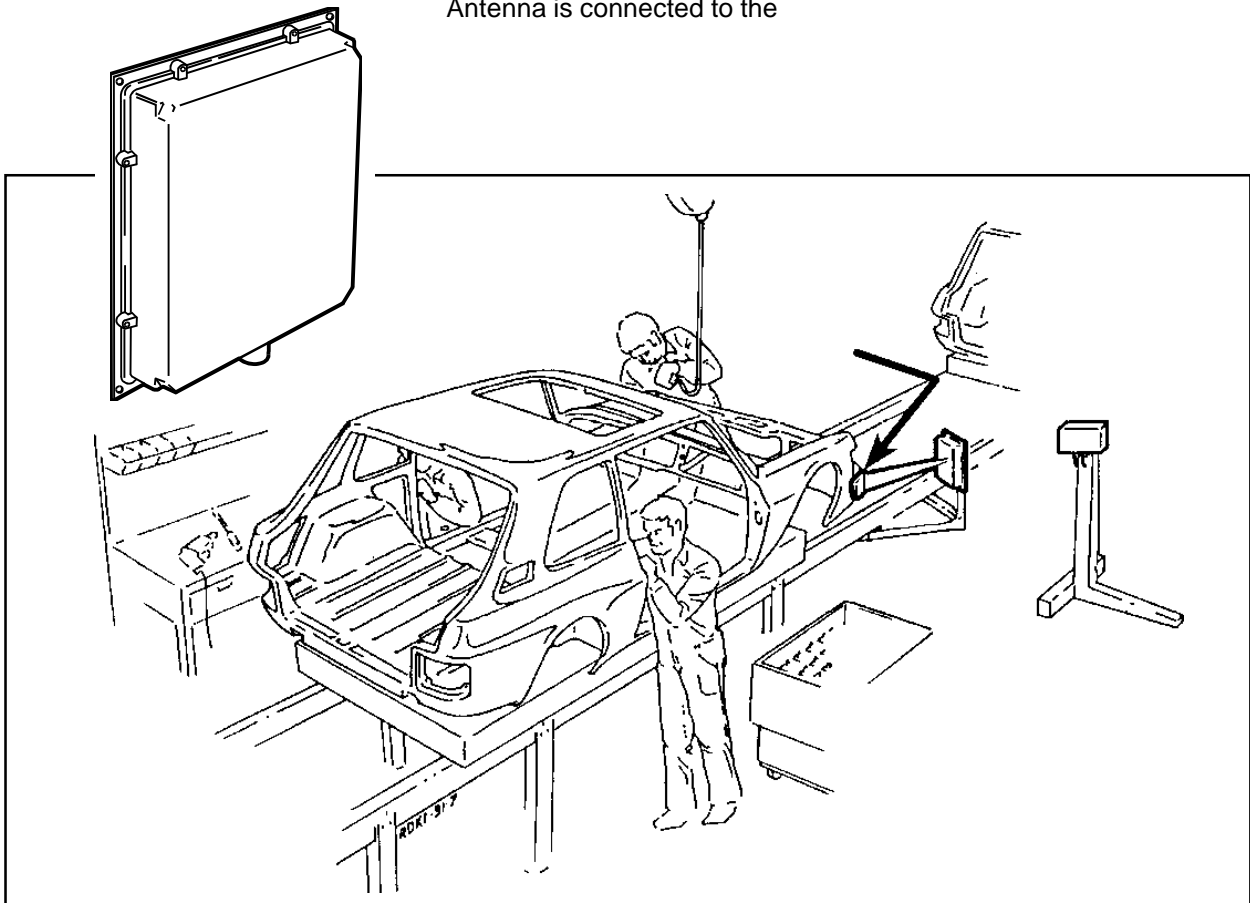
climatic resistance allow indoor as well as outdoor, stationary or mobile installation. Its compact design adds to the installation flexibility.

Communication with the data tags is established via a microwave link, at the worldwide approved frequency 2.45 GHz.

Emitted microwave power from the OIS-P system is well below the limits set by health and telecommunication authorities. The Antenna is connected to the

OIS-P Central Unit via a cable up to 100 metres in length, which transfers signal data and provides low voltage DC power to the Antenna. Signal data is protected against electrical interference by the use of balanced data transmission techniques and cable shielding.

The Antennas comply to ETSI 300 339.



## 8 kbyte Data Tag OIS-P PC3104/32A

The read and write data tag PC3104 is a part of the OIS-P PC3100 series. It is designed and built for normal temperature applications requiring dynamic storage of large amounts of user data, fast data transfer, high reliability and long life.

The rugged design and excellent climatic resistance allow indoor as well as outdoor, stationary or mobile installation. Its compact design offers installation flexibility.

The user data is backed up by a lithium battery. A battery powered data tag makes it possible to obtain communication distances in the metre range, as well as an excellent reading and writing

capability with fast moving data tags. In addition it operates at a microwave power level well below the limits set by health and telecommunication authorities.

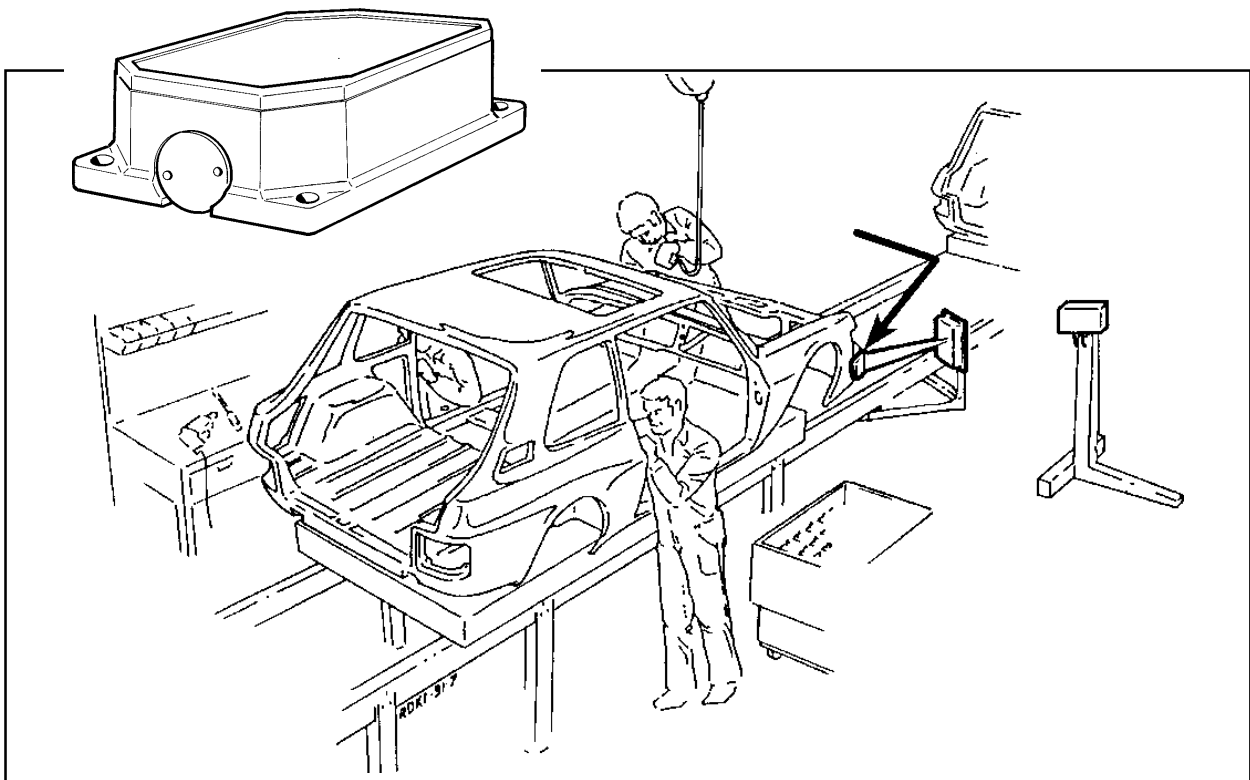
The OIS-P technology maximizes the battery lifetime. The data tag is semi-active type, normally held in a passive state. The current consumption under these passive conditions is merely a few  $\mu$  A. Only when activated in front of an antenna, the data tags data modulation electronics are powered up and the data tag reaches active current consumption in the mA range. As soon as the microwave communication is completed, the data tag returns to its passive state,

thereby saving battery energy.

When data is transferred from the data tag to the Antenna, the data tag simply reflects the microwave energy sent out by the Antenna. No battery energy is expended in establishing this communication link.

The battery life expectancy can be computer simulated for customer-specific conditions. In normal industrial applications, the battery life will typically exceed 8 years.

The data tag complies to ETSI 300 339.



## Electrical and Mechanical Data PC3104/32A

(Note 1)

### Data speed

- Writing 40 kbit/s
- Reading 65 kbit/s

### Wake up time

- 2 ms

### Battery life

(Note 2)

Activation	at 20°C	at 50°C
• 0.1 %	> 8 years	> 8 years
• 1.0 %	6 years	5 years

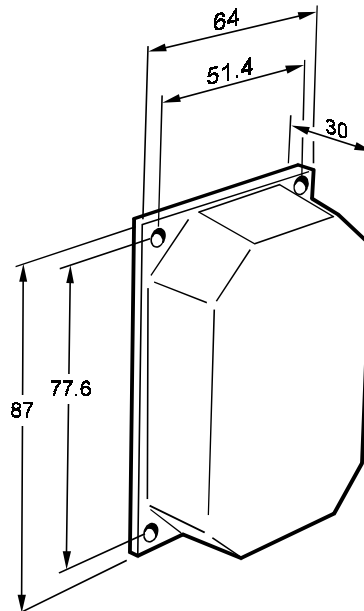
The battery is exchangeable.

### RAM memory capacity

- PC3104/32A 8 kbyte

### RAM memory life

- Unlimited number of read/write cycles



### Outline drawing

(all dimensions in mm)

- Tolerance unless otherwise specified  $\pm 0.5$  mm
- Mounting proposal: M4 screws,  $\varnothing 4.8 \pm 0.3$  (4 x)

### Weight

- 110 g

### Casing

- Luran S

### Colour

- Grey

## Environmental Data

### Temperature range

#### Operating and storage

- $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

### Vibration (operating)

- sine  $\pm 0.35$  mm 10-60 Hz  
sine 5 g 60-500 Hz  
in 3 axes, 40 min/axis  
ref: IEC 68-2-6-Test Fc
- random  $0.02 \text{ g}^2/\text{Hz}$   
10 - 2000 Hz,  
3 hours in  $\pm 3$  axes  
ref: IEC 68-2-34 Test Fdb

### Bump (survival)

- 10 g, 6 ms halfsine x 4000  
in 3 axes  
ref: IEC 68-2-29 Test Eb

### Shock (survival)

- 50 g, 6 ms halfsine x 10  
in 3 axes  
ref: IEC 68-2-27 Test Ea

### Free fall (survival)

- 1000 mm x 100 falls  
ref: IEC 68-2-32 Test Ed

### Enclosure

- IP 67  
ref: IEC 529

### Water immersion (survival)

- 9.8 kPa x 2 hrs  
ref: IEC 68-2-17 Test Qf

### Solar radiation (survival)

- $1.12 \text{ kW/m}^2$  x 56 days  
ref: IEC 68-2-5  
Test Sa class C

### EMC immunity (operating)

- Electrostatic discharge:  
4/8 kV  
ref: EN61000-4-2
- Radiation: 3 V/m  
ref: EN61000-4-3

#### Note 1

Unless otherwise specified at  $20^{\circ}\text{C}$ .

#### Note 2

Activation percentage is defined as the maximum part of the time that is used for reading and writing. Under these circumstances, more than 95% of the data tag will exceed the specified lifetime. For

battery lifetime at other temperatures and activation levels, consult your OIS-P sales representative. Typical activation levels in industrial applications are less than 0.1 %.

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## Electrical and Mechanical Data PC3114/00B, PC3114/01B

### Communication distance

PC3114/00B 2 m  
PC3114/01B 4 m

### Emitted power

- Microwave channel  
PC3114/00B Max 25mW EIRP  
PC3114/01B Max 95mW EIRP  
(Note 1).

### Emitted power intensity

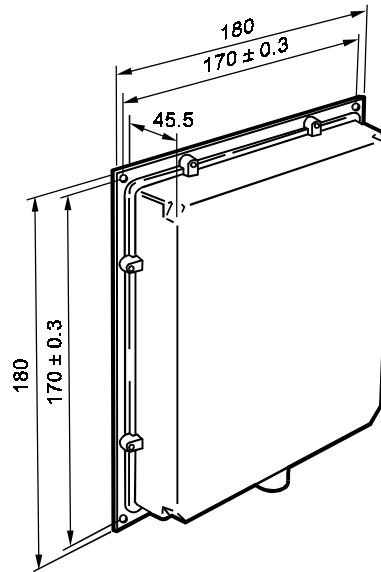
- Designed according to international health standards
- 100 cm from the Antenna:  
PC3114/00B Max 0,2  $\mu\text{W}/\text{cm}^2$   
PC3114/01B Max 1  $\mu\text{W}/\text{cm}^2$   
(Note 2).
- 0 cm from the Antenna:  
PC3114/00B Max. 25  $\mu\text{W}/\text{cm}^2$   
PC3114/01B Max. 100  $\mu\text{W}/\text{cm}^2$   
(Note 2).

### Frequency

- Microwave: 2450 MHz

### Outline drawing

- Tolerance unless otherwise specified  $\pm 1$  mm.
- Mounting proposal: M4 screws  $\varnothing 5 \pm 0.3$  (4 x)  
(All dimensions in mm)



### Weight

- 1,3 kg

### Casing

- Polymer (Radome)
- Aluminium painted (Mounting flange)

### Colour

- Grey
- Black (Connector)

### Accessories

(for connection to PC3141/03B)

- PC3117/11A Antenna cable 10 m, incl connectors, or
- PC3117/12A Antenna connector set and
- PC3017/02A 100 m Cable, excl connector
- PC3117/13A Antenna cable, length to be specified 1 - 100 m

## Environmental data

### Temperature range

Operating and storage  
• - 40 °C to + 70 °C

### Vibration (operating)

- sine  $\pm 0.35$  mm 10-60 Hz  
sine 5g 60-500 Hz  
in  $\pm 3$  axes, 40 min/axes  
ref: IEC 68-2-6 Test Fc
- random 0.01  $\text{g}^2/\text{Hz}$   
10 - 2000 Hz,  
3 hours in  $\pm 3$  axes  
ref: IEC 68-2-34 Test Fdb

### Bump (survival)

- 15 g, 6 ms halfsine x 1000  
in  $\pm 3$  axes  
ref: IEC 68-2-29 Test Eb

### Shock (survival)

- 50 g, 6 ms halfsine x 10  
in  $\pm 3$  axes  
ref: IEC 68-2-27 Test Ea

### Bench handling (survival)

- Face 100 mm  
Corner 100 mm  
ref: IEC 68-2-31 Test Ec

### Enclosure

- IP 65  
ref: IEC 529

### Water immersion (survival)

- 9.8 kPa x 2 hrs  
ref: IEC 68-2-17  
Test Qf

### Solar radiation (survival)

- 1.12  $\text{kW}/\text{m}^2$  x 56 days  
ref: IEC 68-2-5  
Test Sa class C

### EMC immunity (operating)

- Electrostatic discharge: 4/8 kV  
ref: EN 61000-4-2
- Radiation: 3 V/m  
ref: EN 61000-4-3
- Transient burst, 1 kV 50 ns  
ref: EN 61000-4-4

#### Note 1

Output power, EIRP, is defined as radiated power times antenna gain, related to an isotropic antenna. The

figures consider peak power. In all practical cases, the average output power is lower as the antenna is not transmitting continuously.

#### Note 2

Distance from the Antenna above, is defined straight out from the Antenna surface where the intensity is the highest.

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