

We control the future

reliable  
mobile  
efficient

## Industrial Radio Controls

# TC 200



Theimeg radio controls for industrial applications are reliable and economic, and can be used in a wide range of applications.

Theimeg radio controls are used in all areas of industry:

- Steel industry
- Automotive industry
- Construction industry
- Chemical industry
- Marine and harbour industry
- Vehicle industry
- Food industry
- Wholesale and retail
- Mining
- Pharmaceutical industry
- Leisure industry
- Logistics
- Building, office and communication technology
- Railways

**CATRON**  
*theimeg*<sup>TM</sup>

# Industrial radio controls TC 200 Mini, TC 200 Easy



TC 200 Mini

The requirements and areas of industry applicable for modern radio controls are very diverse. It is important that users are provided with standard as well as customised installations for their applications. The TC 200 radio control family of Theimeg features a modular design. This module system enables all available components to be combined to form customised solutions.

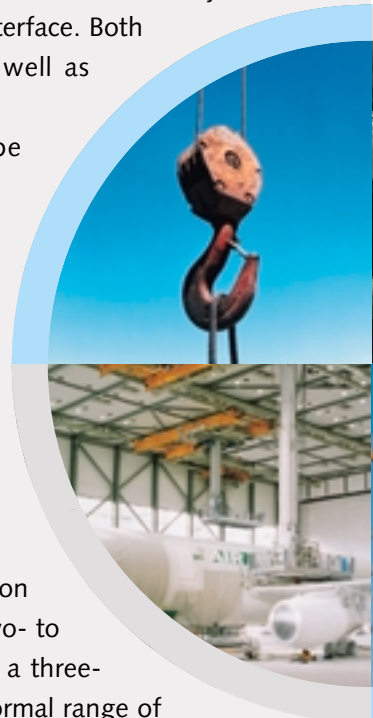
# Transmit



TC 200 Easy

The transmitter housings of the TC 200 Mini and TC 200 Easy differ only in terms of the available user interface. Both transmitters are able to send digital as well as proportional commands.

priority at Theimeg. The signals to be transmitted are protected by reception electronics designed with dual micro processor technology, hamming distance  $d=6$  and a CRC 16. Diverse redundancy of software and hardware produce maximum safety for remote control operation. Additional safety features such as tilt monitoring can also be provided as an option.



Recharger

The basic unit comes with one two-direction and one four-direction joystick for three two- to four-stage drives, three push buttons and a three-position selector switch. This covers the normal range of commands for the standard application. Analog drives can also be controlled as an option. Depending on the particular version, the light-weight transmitter weighs approx. 1.6 kg.



Harness

The robust transmitter featuring ergonomic design and capable of being used in a wide range of applications is supplied as standard with a cushioned belt, and offers maximum ease of wearing. A comfortable harness is also available. The battery capacity is adequate for at least one shift with 80 % ED.

The TC 200 transmitters are supplied as standard with a plug-in recharger unit. A processor-controlled recharger unit is optionally available for longer battery life and a rapid recharging cycle.



The TC 200 receiver forms the heart of the device family. The modular design permits a wide diversity of configuration options. The dual micro processor technology not only enables the received data to be checked; it also enables feedback data of the machine to be read and processed. Status messages can easily be evaluated externally through a sight window on the receiver housing.

# Receive

The receiver features modular design with 7 plug-in cards. A total of 4 slots is provided for generating commands. In the event of a defect, the individual modules can rapidly be replaced, and this considerably simplifies service.

Processing of the output relays can be set as standard via DIP switches, and is also optionally programmable. Potential can be switched via the internal connector strip.

Not only relay cards but also optocoupler cards, analog cards and field bus cards are available for addressing programmable controllers (PCs) crane controls, vehicle controls and machine controls.

In the case of tandem controls or Master/Slave controls, the receivers can be controlled alternately either via one or two transmitters. One transmitter assumes responsibility for commands via an active request command.

Only by an active release command the receiver is given free and the other operator is able to access the receiver again. This option is meaningful wherever heavy or long products have to be transported simultaneously by two cranes operating in tandem or where different operators at various locations in a hall have to transport loads across large distances. Theimeg's special Multi Address switching facility enables several transmitters to control several receivers.



Interbus-S

Profibus-DP

Optocoupler

Relay card

Analog card



Interface cards

ce cards

# General technical data radio control TC 200

Frequency range:	410 - 490 MHz (70 cm band)	Receiver sensitivity:	≤ 1 µV @ 10 dB (S/(S+N+D))
Approval:	National as well as international approvals	Digital electronics:	Redundant dual microprocessor system in the receiver
Modulation:	FM (Frequency Modulation)	Operating temperature:	-20° C to +60° C
Signal coding:	PPM	Receiver relays:	Output relays: max. 250 VAC/5A (ohmic load)
Transmission speed:	4.800 Bd. on the radio circuit	Protection type:	Transmitter IP 65, receiver IP 65
Typical response time:	70 ms (at 4.800 Hz)	Receiver operating voltage:	48 - 230 VAC, 50/60 Hz or 12 - 48 VDC
Hamming distance:	d = 6 (message check)		
Transmission power:	10 mW - 500 mW depending on application		

## TC 200 receiver

- 2-channel dual micro processor system with internal communication and mutual monitoring
- AC PSU 48 V - 230 V, 50/60 Hz
- DC PSU 12 V - 48 V
- Synthesiser HF module (autoscan)
- 500 ms passive emergency stop time
- 3 redundant passive emergency stop circuits
- Relays capacity AC 5A/250 V
- Status display: Master 8 LEDs, Slave 4 LEDs
- Standard frequency setting via DIP switches
- PC interface for free configuration and diagnosis
- 4 freely available slots for output cards
- Redundant address
- Cable gland as standard connection
- Protection class: IP 65
- Dimensions WxHxD: 220 x 320 x 160 mm
- Key switch (On/Off)
- Mushroom head button, rotary unlocking, for Stop function
- integrated antenna
- PC interface for free configuration and diagnosis
- Synthesiser HF part (frequency setting via DIP switches)
- LED for status and error display
- Transmitted address monitored by an independent monitoring unit
- Replacement battery with 0.6 Ah (optional 1.6 Ah)
- Weight: Approx. 1.6 kg
- Dimensions (WxHxD) MINI II: 215 x 136 x 147 mm  
EC: 264 x 136 x 147 mm

### Options:

- Antenna diversity for difficult reception conditions
- Multi address switching
- Field bus cards: Profi-DP, Interbus-S
- Optocoupler output cards
- Proportional output cards
- Tilt switch in transmitter
- external transmitter antenna
- external address
- 1,6 Ah batteries
- Processor-controlled charging unit
- Carrier belt for the transmitter
- Harting connector for relay output

## TC 200 transmitter

- 1 four-direction joystick for 2 drives (2- to 4-stages possible) alternatively analog signal
- 1 two-direction joystick for 1 drive (2- to 4-stages possible)
- Up to 8 proportional drives can be controlled
- 3-way selector switch
- 2 push buttons
- 1 side push button

**UNITED STATES**  
 Cattron-Theimeg International Inc.  
 58 West Shenango Street  
 Sharpsville, PA 16150  
 Phone: +1-724-962-3571  
 Fax: +1-724-962-4310  
 e-mail: mail@cattron.com

**AFRICA**  
 Cattron-Theimeg Africa (Pty.) Ltd.  
 24 O'Rielly Merry Road, Rynfield, Benoni.  
 P.O. Box 15444, Farrarmere, Benoni  
 Gauteng 1518, South Africa  
 Phone: +27-11-425-1123  
 Fax: +27-11-849-5717  
 e-mail: cattron@iafrica.com

**CANADA**  
 Cattron-Theimeg Canada Ltd.  
 150 Armstrong Avenue, Units 5 - 6  
 Georgetown, Ontario L7G 5G8  
 Phone: +1-905-873-9440  
 Fax: +1-905-873-9449  
 e-mail: salescdn@cattron.com

**BRAZIL**  
 Cattron-Theimeg Américas Ltda.  
 Rua Antonio Rodrigues de Carvalho, 435  
 13033-220 - Campinas - SP  
 Phone: +55-19-243-7803  
 Fax: +55-19-243-9258  
 e-mail: cattronamericas@usa.net

**EUROPE**  
 Cattron-Theimeg Europe GmbH & Co. KG  
 Krefelder Straße 423 - 425  
 D-41066 Mönchengladbach  
 Phone: +49-2161-6363-0  
 Fax: +49-2161-6363-100  
 e-mail: theimeg@theimeg.de

**UNITED KINGDOM**  
 Cattron-Theimeg UK Ltd.  
 Riverdene Industrial Estate,  
 Molesey Road, Hersham  
 Walton-on-Thames, Surrey KT12 4RY  
 Phone: +44-1932-247511  
 Fax: +44-1932-220937  
 e-mail: sales@cattronuk.com