COMPACT DESIGN

COMMUNICATING SYSTEM

Timo

RECEIVER

Timo radio receiver provides solutions to the broad range of functional needs of secure mobile applications, through a wide variety of input/output interfaces. This highly flexible product integrates today's cutting edge technology for optimum performance.

MAIN FEATURES

> Configurable, intelligent bi-directional radio link exchanges information while adapting to the radio environment.

> Internal, unique SIM card contains all the receiver and transmitter parameters linked to the application, and :
- allows a transmitter to associate to a receiver by recovering the application configuration,
- allows you to quickly replace a receiver if necessary.

> Quick and easy setup of the product by mini-B USB connector and **iDialog** software setup (labels, feedback, alarms, mapping actuators/outputs, interlocks, network features, access by PIN codes).

> Cable glands, circular connector (M12, C16) or industrial connector (10, 16 contacts) on receiver for easy i nstallation.

> Spring-type terminal strips ensuring a good vibration withstand capacity.

FULLY COMPLIANT WITH EUROPEAN DIRECTIVES:

Machinery directive 2006/42/EC:
Emergency stop
> SIL 3 per EN 61508
> Performance level PL e per EN ISO 13849-1 and -2
EC type certificate issued by TÜV NORD

Certificate E13 vehicle marking:
Approval granted by SNCH

E13 10R - 04 13347

Radio and telecommunication terminal equipment
(low voltage, electromagnetic compatibility, radio spectrum)
R&TTE 99/5/EC

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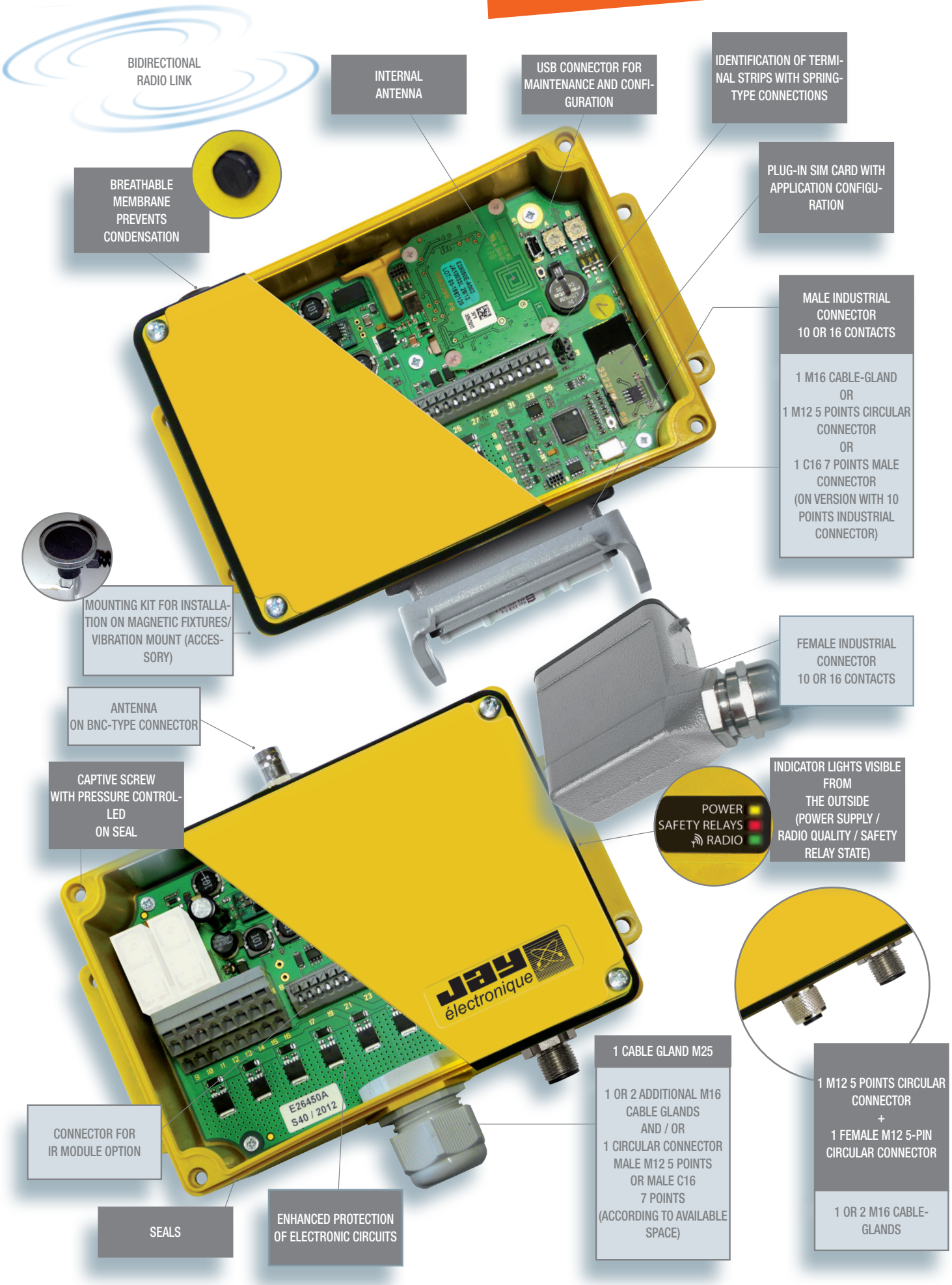

RECEIVER

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DESCRIPTION

The Timo REceiver is formed by a motherboard comprising:

> 2 safety relays (RS1& RS2) (active when the «On /Validation » button on the transmitter is pressed; self-holding up to shutdown)

> 6 transistor outputs with common contact independent with respect to power supply, type logic or PWM

> 2 analog outputs

> 2 logic inputs

> 1 analog input

> 1 RS485 Modbus interface

> 1 CANopen interface

> 1 terminal strip to connect up to two infrared modules (optional) with possibility of differentiating the activation of a module over the other.

Wireless HMI Control (WHC)

Text messages or graphic images can be send from CANopen or Modbus Network and write on transmitter display screen

Compatibility:

These receivers operate with **Beta**, **Gama**, **Pika**, **Moka** transmitters, to be defined according the application.

TECHNICAL CHARACTERISTICS

MECHANICAL CHARACTERISTICS AND ENVIRONMENTAL WITHSTAND CAPACITY

Housing material	Fiberglass polyamide
Tightness	IP 65
Weight	585 g
Dimensions	190 x 120 x 60 mm max (not including attachment fittings and antenna)
Operating temperature range	-20 °C to +60 °C
Storage temperature range	-30 °C to +70 °C
Cable lead-out	Several possibilities: - via 1 or several cable gland lead-outs - via a plug-in industrial connector, 10 or 16-contacts - via a M12 or C16 circular connector
Cable connections	Spring-type terminal strips

RADIO CHARACTERISTICS

Frequency choice	64 frequencies for 433-434 MHz band 12 frequencies for 869 MHz band 64 frequencies for 911-918 MHz band 64 frequencies for 2.4 GHz
Transmit power	< 10 mW (license free)
Modulation	FM or LoRa with 2.4 GHz
Antenna	2.4 GHz: 2x external antennas (SMA) Other frequency: Internal antenna (option: plug-in antenna on BNC connector)
Average range [1]	External antenna : 250 m in congested environment [1] 300 m in clear environment [1] 80 m-300 m band 2.4 GHz in industrial environment [1] 800 m-2 Km band 2.4 GHz in open space [1] Internal antenna (except 2.4 GHz): 100 m in clear environment [1]

ELECTRICAL CHARACTERISTICS

Power supply voltage	9 to 30 VDC
Maximum consumption	4 W
Power supply protection	- against polarity inversions - against overcurrents by fuse
Response time	On startup : 0.5 s max On command : 300 ms max
Active stop time	100 ms
Passive stop time adjustable	between 0.5 to 2 s
Indication	- 1 green indicator light: Radio status and quality (visible with housing closed) - 1 yellow indicator light: Power on (visible with housing closed) - 1 red indicator light: Safety relay status (visible with housing closed) - 2 red indicator lights: malfunction and diagnostic (visible with housing open) - 1 red indicator light: indicates activation of transistor outputs (visible with housing open)

[1] Range varies according to environment conditions around transmitter and reception antenna (steel works, metal walls …).

SECURE RELAY OUTPUTS

Type of contacts	2 relays with linked contacts
Contacts and connections	2 connection points, potential free, by contact Spring-type terminal strips
Characteristics of contacts	Max. current 6 A

AVAILABLE FUNCTIONS

Transistor outputs

Contacts and connections	1 connection point per output + 1 power supply common contact spring-type terminal strips
Outputs	- Max. Interrupting capacity 4 A/output - Max. admissible current for all outputs 12 A - Max. voltage 30 VDC - Max. power 1/4 W - PWM (frequency of 1 to 1000 Hz, duty cycle of 1 to 90 %, 2 possible frequencies)

Logic inputs

Contacts and connections	2 connection points per input Spring-type terminal strips
High level on input	> 6.5 VDC
Low level on input	< 1.5 VDC
Voltage	0-30 VDC Max
Active input consumption	< 20 mA

Analog outputs

Contacts and connections	1 connection point per output + common contact spring-type terminal strips
Type of signal	0-10 V
Max. output current	< 10 mA

Analog input

Contacts and connections	1 connection point + common contact spring-type terminal strips
Type of signal	0-30 V
Active voltage input consumption	< 10 mA

Modbus RTU Slave	1 RS 485 serial link
Contacts and connections	2 connection points spring-type terminal strips
Protection (D+/D-)	ESD/EMI
Data rate	1200, 2400, 4800, 9600, 19200 (default), 38400, 57600, 115200 bits/s
Parity	- none - even (default) - odd
Slave addressing	1 to 247 (100, default)

Bus CANopen Slave	CIA401 compatible
Contacts and connections	2 connection points spring-type terminal strips
Data rate	20, 50, 100, 125, 250, 500, 800 kbits/s and 1Mbits/s
Slave addressing	1 to 127

ADDITIONAL OPTIONS

STARTUP BY IR VALIDATION

TRANSMITTER / RECEIVER ASSOCIATION BY IR

ACTION AREA LIMITATION BY IR

SYNCHRONISATION OF EQUIPMENT

- Master / Master
- Tandem
- Pitch and Catch

ACCESSORIES: antennas and antenna extensions

Description	Reference for use in 418 and 433 MHz frequency bands (A)	Reference for use in 869 and 915 MHz frequency bands (B)	Picture
Straight antenna, 1/4 wave, BNC (1)	VUA001A	VUA001B	 approximate length: A = 190 mm ; B = 90 mm
Straight antenna, 1/2 wave, BNC	VUA002A	VUA002B	 approximate length: A = 335 mm ; B = 250 mm
Through insulated remote antenna, 1/2 wave, with 0.5 m BNC cable	VUA100AH	VUA100BH	 approximate length: A = 320 mm ; B = 190 mm Required drill hole Ø15 mm
Through insulated remote antenna, 1/2 wave, with 2 m BNC cable	VUA102AH	VUA102BH	
Through insulated remote antenna, 1/2 wave, with 5 m BNC cable	VUA105AH	VUA105BH	
Through insulated remote antenna, 1/2 wave, with 10 m BNC cable	VUA110AH	VUA110BH	
Insulated and magnetic remote antenna, 1/2 wave, with 3 m BNC cable	VUA103AM	VUA103BM	 approximate length: A = 440 mm ; B = 320 mm
Insulated and magnetic remote antenna, 1/2 wave, with 5 m BNC cable	VUA105AM	VUA105BM	
Through uninsulated remote antenna, 1/4 wave, with 3 m BNC cable	VUA103AV	VUA103BV	 (antenna to be mounted on a not grounded metal surface approximate length: A = 180 mm ; B = 100 mm Required drill hole Ø12 mm or Ø19 mm (according mounting type)
Through uninsulated remote antenna, 1/4 wave, with 5 m BNC cable	VUA105AV	VUA105BV	

(1): antenna supplied as standard with the receiver (except 2.4 GHz option).

ACCESSORIES: antennas

Description	Reference for use in 2.4 GHz	Picture
Straight antenna 2.4 GHz orientable 0-180 deg, gain 2 dBi - SMA(2)	VUC001C	 Approximate length 136 mm, Ø12.5 mm
Through insulated remote antenna 2.4 GHz, gain 3 dBi, IP65, 0.5 m cable - SMA	VUC100CH	 Approximate length 48 mm, Ø50 mm
Through insulated remote antenna 2.4 GHz, gain 3 dBi, IP65, 3 m cable - SMA	VUC103CH	
Through insulated remote antenna 2.4 GHz, gain 3 dBi, IP65, 8 m cable - SMA	VUC108CH	
Uninsulated antenna 2.4 GHz IP65 UV, 5 m cable - SMA Mat collar fixing diam 22 to 52 mm	VUC105CC	 Approximate length 180 mm, Ø60 mm
Uninsulated antenna 2.4 GHz IP65 UV, 10 m cable - SMA Mat collar fixing diam 22 to 52 mm	VUC110CC	
Uninsulated antenna 2.4 GHz gain 2 dBi, 3 m cable - SMA magnetic attachment	VUC103CM	 Approximate length 120 mm, Ø30 mm
Uninsulated antenna 2.4 GHz gain 2 dBi, 8 m cable - SMA magnetic attachment	VUC108CM	

CAUTION : In 2.4 GHz, the receiver is equipped with 2 antennas.

(2): 2 antennas supplied as standard with the receiver.

OTHER ACCESSORIES

Reference	Description	Picture
PWT01	Cable gland kit PE M25 with 2 wire grommets	
UDWR14	2 m cable + 16-pin male connector	 Transceiver Elio wiring side
UDWR13	2 m cable + 24-pin male connector	 Transceiver Elio wiring side
PWT15 (10 points) PWT16 (16 points)	Female industrial connector kit	
PWM203	C16 screw-type female circular connector with 7 contacts	
PWT20	1 IR module (10 m cable and plastic M16 cable gland included) for options: startup by IR validation or limitation of action area by IR system	
UDWR10	10m cable extension + connector for PWT20 IR module	
PWT17	M12 female circular connector with 5 contacts + 2m cable	
UDWR38	Receiver mounting kit using magnetic fixtures	

ZAC La Bâtie
Rue Champrond
F 38334 SAINT-ISMIER France
Tel. +33 (0)4 76 41 44 00
www.jay-electronique.com

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