COMPACT DESIGN

COMMUNICATING SYSTEM

TRANSCEIVER

Timo

The Timo radio transceiver by JAY Electronique 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 transceiver and operator module parameters linked to the application, and :
- allows an operator module to associate to a transceiver by recovering the application configuration,
- allows you to quickly replace a transceiver 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 transceiver for easy installation.

→ 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

TÜV NORD Type Tested No 44 250 11 382580 007

Certificate E13 vehicle marking:
Approval granted by SNCH

snch E13 10R - 04 13347

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

TRANSCEIVER

Timo

Jay électronique

BIDIRECTIONAL RADIO LINK

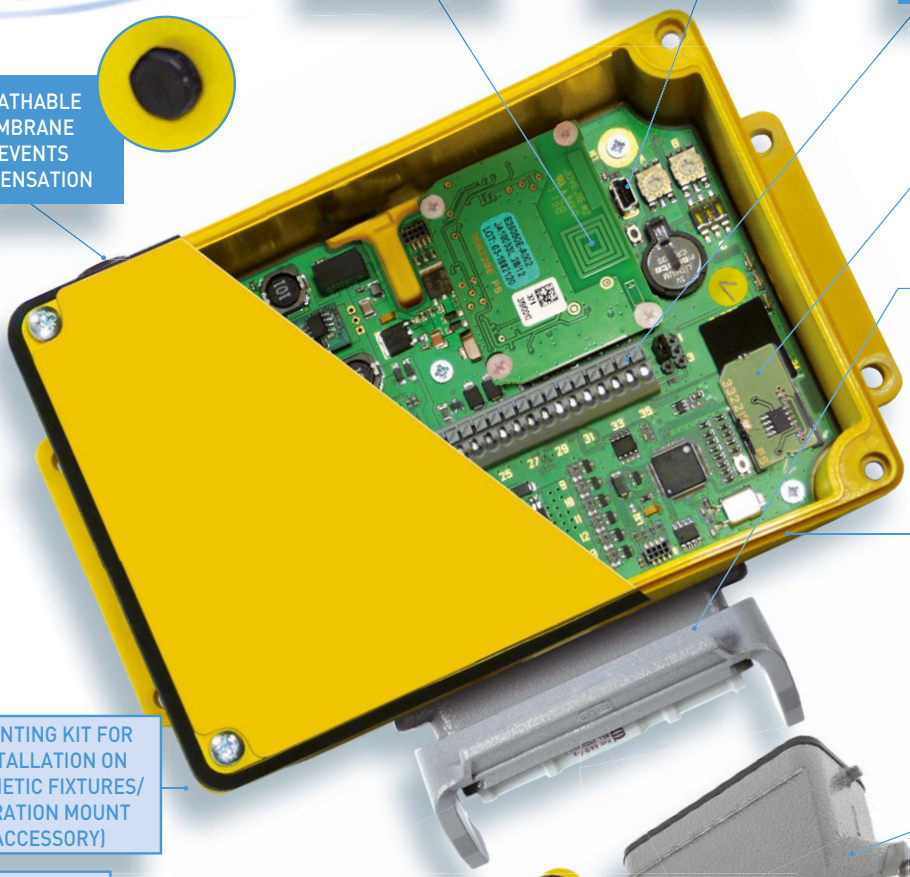
INTERNAL ANTENNA

USB CONNECTOR FOR MAINTENANCE AND CONFIGURATION

IDENTIFICATION OF TERMINAL STRIPS WITH SPRING-TYPE CONNECTIONS

BREATHABLE MEMBRANE PREVENTS CONDENSATION

PLUG-IN SIM CARD WITH APPLICATION CONFIGURATION



MALE INDUSTRIAL CONNECTOR 10 OR 16 CONTACTS

1 M16 CABLE-GLAND OR 1 M12 5 POINTS CIRCULAR CONNECTOR OR 1 C16 7 POINTS MALE CONNECTOR (ON VERSION WITH 10 POINTS INDUSTRIAL CONNECTOR)

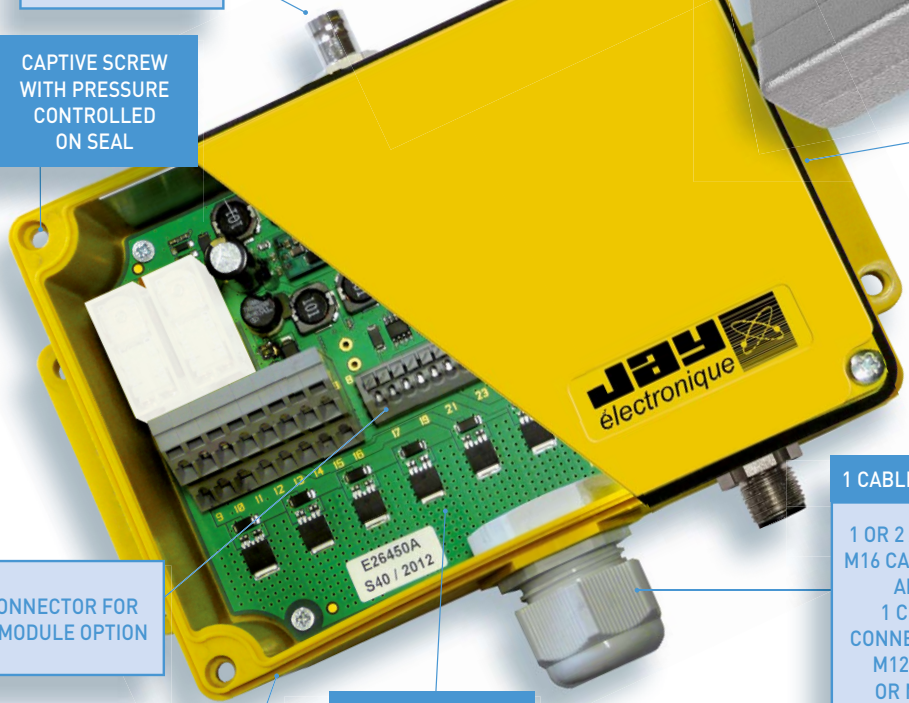
MOUNTING KIT FOR INSTALLATION ON MAGNETIC FIXTURES/ VIBRATION MOUNT (ACCESSORY)

FEMALE INDUSTRIAL CONNECTOR 10 OR 16 CONTACTS

ANTENNA ON BNC-TYPE CONNECTOR

CAPTIVE SCREW WITH PRESSURE CONTROLLED ON SEAL

INDICATOR LIGHTS VISIBLE FROM THE OUTSIDE (POWER SUPPLY / RADIO QUALITY / SAFETY RELAY STATE)



1 CABLE GLAND M25

1 OR 2 ADDITIONAL M16 CABLE GLANDS AND / OR 1 CIRCULAR CONNECTOR MALE M12 5 POINTS OR MALE C16 7 POINTS (ACCORDING TO AVAILABLE SPACE)

1 M12 5 POINTS CIRCULAR CONNECTOR + 1 FEMALE M12 5-PIN CIRCULAR CONNECTOR

1 OR 2 M16 CABLE-GLANDS

CONNECTOR FOR IR MODULE OPTION

SEALS

ENHANCED PROTECTION OF ELECTRONIC CIRCUITS

TRANSCEIVER

Timo

DESCRIPTION

The Timo transceiver is formed by a motherboard comprising :

- → 2 safety relays (RS1& RS2) (active when the «On / Validation » button on the operator module 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 module operator display screen

Compatibility:

These transceivers operate with **Beta**, **Gama**, **Pika, Moka** operators modules, to be defined according the application.

TECHNICAL CHARACTERISTICS

MECHANICAL CHARACTERISTICS AND ENVIRONMENTAL WITHSTAND CAPACITY

Housing material	Fiberglass polyamide
Tightness	IP 65
Weight	585g
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 programmable frequencies on 433-434 MHz band - 12 programmable frequencies on 869 MHz band - 64 programmable frequencies on 433-434 MHz band
Transmit power	< 10 mW (license free)
Modulation	FM
Antenna	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] Internal antenna : 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 : 0,5s max On command : 300 ms max
Active stop time	100 ms
Passive stop time adjustable	between 0,5 to 2s
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 operator module 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 6A

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 4A/output - Max. admissible current for all outputs 12A - Max. voltage 30VDC - Max. power 1/4 W - PWM (frequency of 1 to 1000Hz, 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	0-30Vdc Max
Active input consumption	< 20mA

Analog outputs

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

Analog input

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

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

ACTION AREA LIMITATION BY IR

OPERATOR MODULE / TRANSCEIVER ASSOCIATION BY IR

SYNCHRONISATION OF EQUIPMENT

- Master / Master
- Tandem
- Pitch and Catch

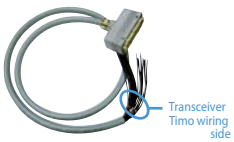
ACCESSORIES : antennas and antenna extensions

Description	Reference for use in 433 MHz frequency band	Reference for use in 869 MHz frequency band	Reference for use in 915 MHz frequency band	Picture
Straight antenna, 1/4 wave, BNC	VUA001A	VUA001B	/	
Through insulated remote antenna, 1/2 wave, with 0,5m BNC cable	VUA100AH	VUA100BH	/	
Through insulated remote antenna, 1/2 wave, with 2m BNC cable	VUA102AH	VUA102BH	/	
Through insulated remote antenna, 1/2 wave, with 5m BNC cable	VUA105AH	VUA105BH	/	
Through insulated remote antenna, 1/2 wave, with 10m BNC cable	VUA110AH	VUA110BH	/	
Insulated and magnetic remote antenna, 1/2 wave, with 3m BNC cable	VUA103AM	VUA103BM	/	
Insulated and magnetic remote antenna, 1/2 wave, with 5m BNC cable	VUA105AM	VUA105BM	/	
Through uninsulated remote antenna, 1/4 wave, with 3m BNC cable	VUA103AV	VUA103BV	/	 (antenna to be mounted on a not grounded metal surface)
Through uninsulated remote antenna, 1/4 wave, with 5m BNC cable	VUA105AV	VUA105BV	/	
Straight antenna, 1/2 wave, BNC	/	/	VUB984	
0.5 m extension for BNC antenna	/	/	VUB170	
2 m extension for BNC antenna + bracket	/	/	VUB105	
5 m extension for BNC antenna + bracket	/	/	VUB125	
10 m extension for BNC antenna + bracket	/	/	VUB131	

OTHER ACCESSORIES

2m cable
+ 16-pin male connector

Reference : UDWR14



2m cable
+ 24-pin male connector

Reference : UDWR13

Female industrial
connector kit

10 points, reference : PWT15
16 points, reference : PWT16

C16 screw-type female
circular connector with 7
contacts

Reference : PWM203

Cable gland kit PE M25
with 2 wire grommets

Reference : PWT01

1 IR module
(10m cable and
plastic M16 cable
gland included) for
options : startup by IR
validation or limitation
of action area by IR
system

Reference : PWT20

10m cable extension
+ connecto for PWT20
IR module

Reference : UDWR10

M12 female circular
connector with 5
contacts + 2m cable

Reference : PWT17

Transceiver
mounting kit
using magnetic fixtures

Reference : UDWR38

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