MODULAR

MULTIFUNCTION

Alto

TRANSCEIVER

The Alto radio transceiver by JAY Electronique provides solutions to the wide range of functional needs involved in secure industrial applications. This highly flexible product integrates today's cutting edge technology for optimum performance.

MAIN FEATURES

→ Modular unit with a large choice of functions

→ 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 or industrial connector (not supplied) on transceiver for easy installation.

→ Spring-type, plug-in terminal strips facilitate wiring and maintenance.

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 CERT GmbH Type Tested
No 44 250 11 382580 006

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

TRANSCEIVER

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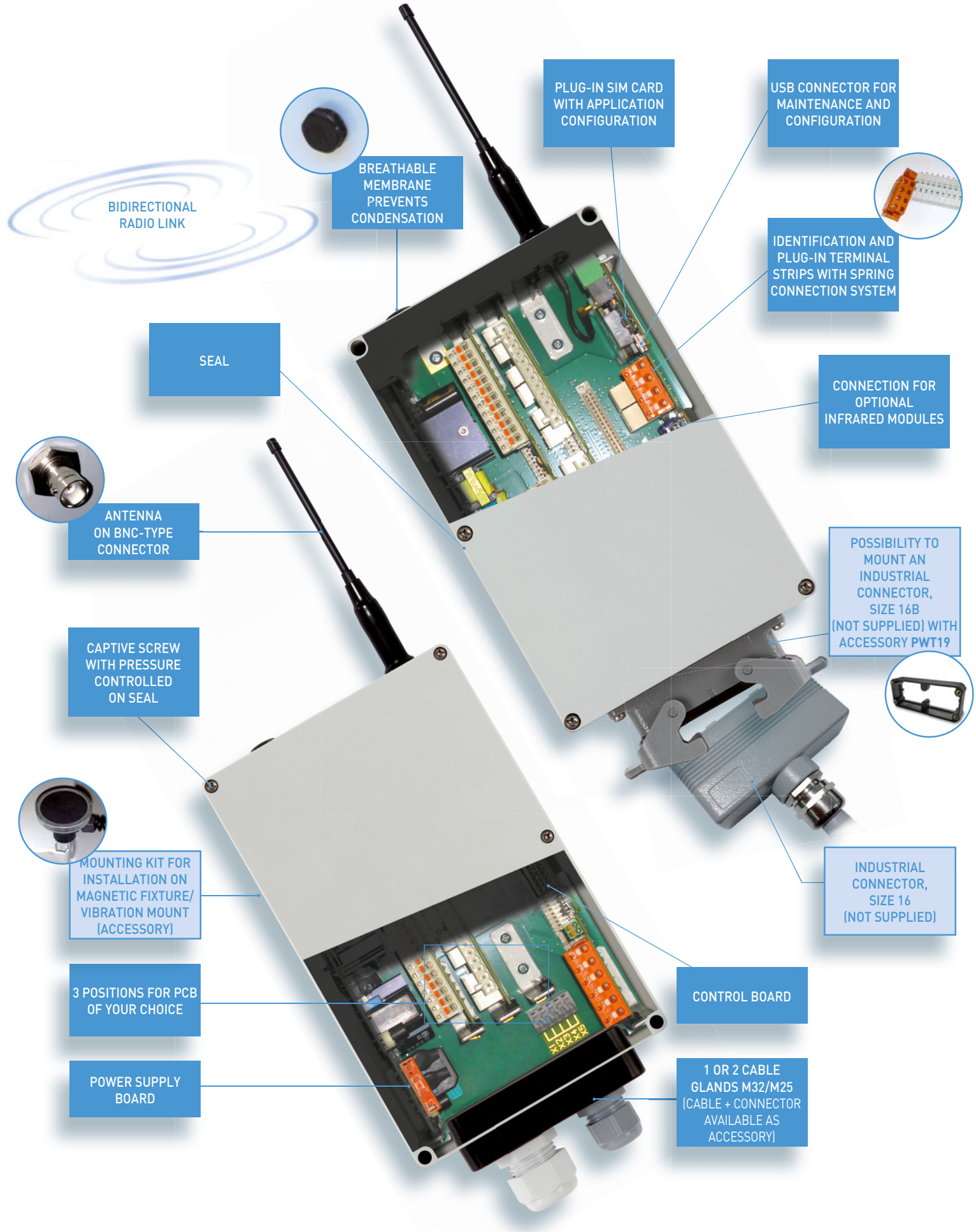

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DESCRIPTION

The modular transceiver is formed by PCBs which connect into the unit's motherboard.

The unit is systematically equipped with :

→ 1 power supply board

→ 1 control board containing safety relays RS1 & RS2 / On-Horn relay / 3 inputs for infrared module. It is possible to increase this number to 9 with UDWR40 wiring interfaces (accessory) / 1 logic input / 1 analog input / 1 RS485 Modbus serial link

3 positions are provided to receive, in accordance with your application :

→ 1 board with 12 On/Off relays

→ 1 board with 12 logic inputs + 2 analog inputs

→ 1 board with 6 analog outputs + 1 bypass output

→ 1 BUS board

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	ABS,
Tightness	IP 65
Weight	2Kg (approx.)
Dimensions	160 x 250 x 120 mm max (not including antenna)
Operating temperature range	- 20°C to + 60°C
Storage temperature range	- 30°C to 70°C
Cable lead-out	- by 2 cable glands (size M32/M25) - by industrial connector (not supplied, requires mounting accessory PWT19)
Wiring connection	Spring-type plug-in connectors

RADIO CHARACTERISTICS	
Frequency choice	- 11 programmable frequencies on 418-419 MHz band - 64 programmable frequencies on 433-434 MHz band - 12 programmable frequencies on 869 MHz band - 64 programmable frequencies on 911-918 MHz band
Transmit power	< 10 mW (license free)
Modulation	FM
Antenna	plug-in antenna on BNC connector ref: VUA001A (bands 418-419 MHz or 433-434 MHz) ref: VUA001B (bands 869 MHz or 911-918 MHz) Other antennas available as accessories
Average range [1]	100 m in industrial environment [1] 300 m in open space [1]

ELECTRICAL CHARACTERISTICS OF POWER SUPPLY BOARD	
Power supply voltage	12-24VDC ± 15 %/ 24-48VAC ± 25 % /115-230VAC ± 15 %
Maximum consumption	15 W
USB Interface	mini-B 5-contact USB connector
Indication	- yellow indicator lights : power on
Number of relays controllable according to power supply without or with 1 IR module connected	30

ELECTRICAL CHARACTERISTICS OF CONTROL BOARD	
Contact type	2 relays with linked contacts
Contacts and connection	3 connection points, 1 Contact Spring-type plug-in connectors
Indication	- 1 green indicator light : Radio status and quality - 1 yellow indicator light : Power on - 1 red indicator light : fault and diagnostic
Active stop time	100 ms
Passive stop time	adjustable 0,5 to 2 s

ON CONTROL BOARD	
1 Logic input	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
1 active input consumption	< 10mA
Voltage	0 to 30VDC
Lowlevel on input	< 2VDC
Highlevel on input	> 3VDC
1 Analog input	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
Max. input level	10V or 4-20mA
1 active input consumption	< 12mA
1 RS485 serial link	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
Protocol	Modbus RTU slave
Data rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bit/s
Parity	none / even / odd
Slave addressing	1 to 247

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

ADDITIONAL OPTIONS

ELECTRICAL CHARACTERISTICS OF BOARD WITH 12 CONTROL RELAY OUTPUTS	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
Outputs	Independent relays - Category DC13 0,5A / 24VDC , AC15 2A / 230VAC - Interrupting capacity, 2000VA max. - Max. current 8A (control relay), 6A (safety relay) - Min. current 10 mA (12 Vmin.) - Max. voltage 250VAC
Response time	- On startup : 0,5s max - On command : 200ms typical

ELECTRICAL CHARACTERISTICS OF BOARD WITH 12 LOGIC INPUTS + 2 ANALOG INPUTS	
Logic inputs	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
Consumption of an active input	< 10mA
Voltage	0 to 30VDC
Low level on input	< 2Vdc
High level on input	> 3Vdc
Analog inputs	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
Max. input level	10V or 4-20mA
Consumption of an active input	< 12mA

ELECTRICAL CHARACTERISTICS OF BOARD WITH 6 ANALOG OUTPUTS + 1 BYPASS OUTPUT	
Analog outputs	
Contacts and connection	2 connection points, 1 Contact Spring-type plug-in connectors
Output level	0 / 10V -10V / 0 / +10V 3V / 6V / 9V 6V / 12V / 18V
Voltage output max. current	10mA

ELECTRICAL CHARACTERISTICS OF BOARD WITH BUS	
CANopen slave CiA 401 compatible	
Contacts and connection	2 connection points on spring terminals
Data rate	20, 50, 100, 125, 250, 500, 800 kbits/s and1 Mbits/s
Slave addressing	1 to 127

EMERGENCY BY WIRE CONNECTION

SYNCHRONIZATION OF EQUIPMENT

- Master / Master
- Master / Slave
- Tandem
- Pitch and Catch

STARTUP BY IR VALIDATION

ACTION AREA LIMITATION BY INFRARED

OPERATOR MODULE / TRANSCEIVER SELECTION AND ASSOCIATION BY INFRARED

ACCESSORIES : antennas

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 = 190mm ; B = 90mm
Straight antenna, 1/2 wave, BNC	VUA002A	VUA002B	 approximate length : A = 335mm ; B = 250mm
Through insulated remote antenna, 1/2 wave, with 0,5m BNC cable	VUA100AH	VUA100BH	 approximate length : A = 320mm ; B = 190mm Required drill hole Ø15mm
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	 approximate length : A = 440mm ; B = 320mm
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 approximate length : A = 180mm ; B = 100mm Required drill hole Ø12mm or Ø19mm (according mounting type)
Through uninsulated remote antenna, 1/4 wave, with 5m BNC cable	VUA105AV	VUA105BV	

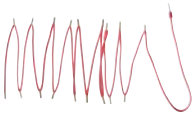
(1) : antenna supplied as standard with the transceiver

OTHER ACCESSORIES

Cable gland kit PE M25 with 2 wire grommets
Reference: PWT01

2m cable + 16-pin male connector
Reference : UDWR14

2m cable + 24-pin male connector
Reference : UDWR13



Wiring accessories for common points
Reference: PWT03

Mounting accessory for industrial connector
Reference : PWT19

Transceiver mounting kit using magnetic fixtures
Reference: UDWR38

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 + connector
for PWT20 IR module
Reference : UDWR10

Wiring interface to connect 3 infrared IR modules PWT20 on a Transceiver IR input
(delivered with 10 m cable to be connected to the Transceiver IR input and mounting kit using 2 magnetic fastening pads)
Reference : UDWR40

Cable for wire connection between operator module and transceiver
Reference : PWL010
Length : 10 meters

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