OPTIMISED

OPEN-ENDED

Elio

RECEIVER

Elio radio receiver 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

> 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 or industrial connector (not supplied) on receiver for easy installation.

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

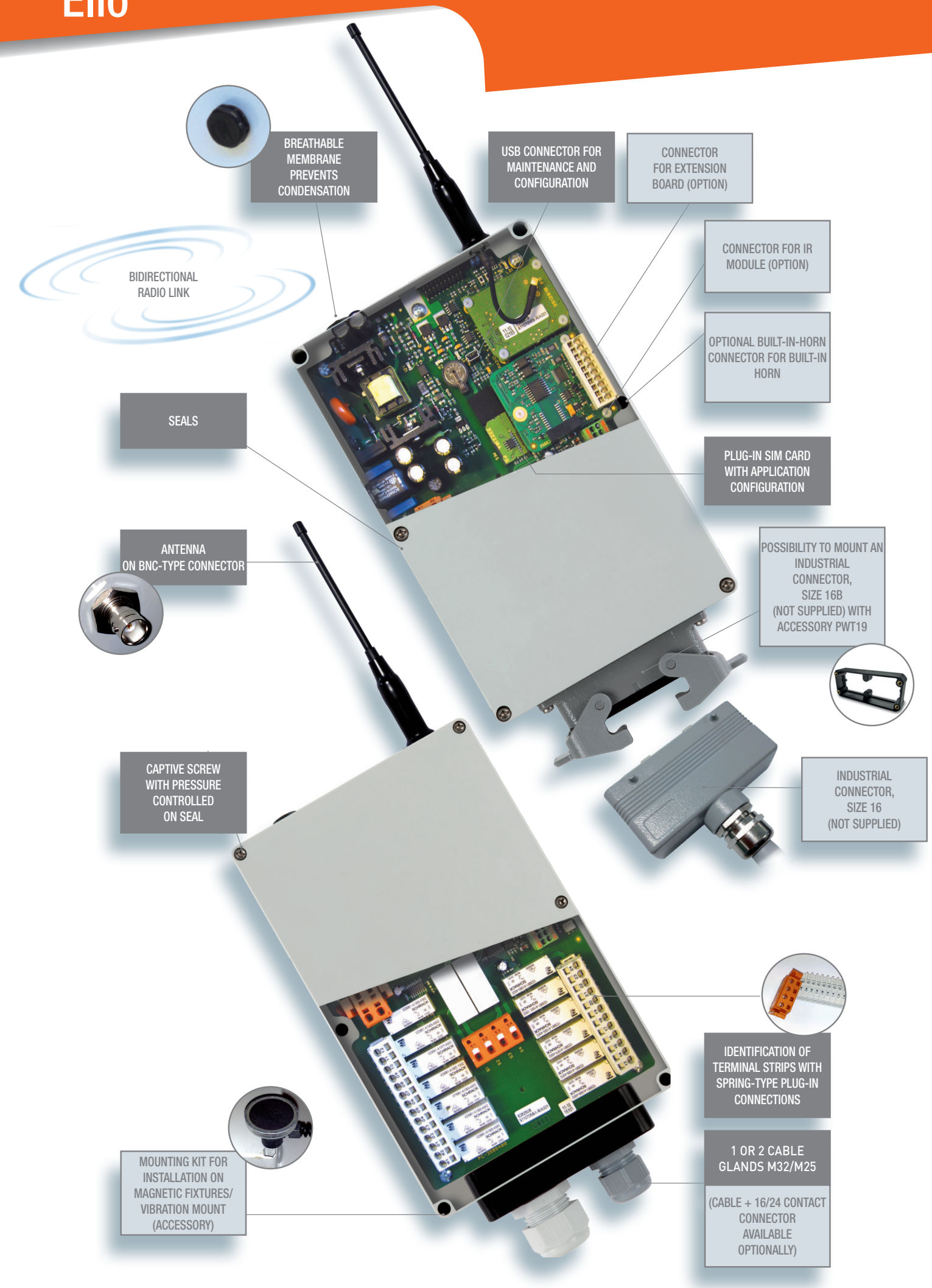
FULLY COMPLIANT WITH SAFETY AND SECURITY STANDARDS:

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

Radio and telecommunication terminal equipment
(low voltage, electromagnetic compatibility, radio spectrum)
FCC part 15
ARCEP certificate
Radio Equipment Directive (RED)

RECEIVER

Elio



RECEIVER

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DESCRIPTION

The Elio receiver is formed by a motherboard comprising:

> 1 «On» relay (RM) (active when the «On/Validation» button on the transmitter is pressed; not self-holding)

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

> 12 function relays (R1 to R12)

> 1 connector for connection up to 3 IR cells (optional). It is possible to increase this number to 9 with UDWR40 wiring interfaces (accessory).

> 1 auxiliary connector for an extension board (optional)

> 1 connector for connection of the internal horn

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	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 gland lead-outs - by industrial connector (not supplied, requires mounting accessory PWT19)
Cable connections	Spring-type plug-in connectors

RADIO CHARACTERISTICS

Frequency choice	11 frequencies for 418-419 MHz band 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	plug-in antenna ref: VUA001A (bands 418-419 MHz or 433-434 MHz) ref: VUA001B (bands 869 MHz or 911-918 MHz) ref: 2x VUC001C (bands 2.4 GHz) Other antennas available as accessories
Average range [1]	100 m in industrial environment [1] 300 m in open space [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]

ELECTRICAL CHARACTERISTICS

Power supply voltage	- 12 VDC - 12 % to 24 VDC +25 % - 12 VDC - 5 % to 24 VDC +25 % and 24/48 VAC ± 25 % - 115/230 VAC ± 15 %
Maximum consumption	8 W

SECURE RELAY OUTPUTS

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

SECURE RELAY OUTPUTS

Contacts and connections	2 relays with linked contacts Spring-type plug-in connectors
Command	1 «On» relay + 12 function relays
Outputs	Independent NO relays - Category DC13 0.5 A / 24 VDC, AC15 2 A / 230 VAC - Interrupting capacity 2000 VA max. - Max. current 8 A - Min. current 10 mA (12 V min.) - Max. voltage. 250V AC
Response time	- On startup: 0.5 s max - On command: 300 ms max
Active stop time	100 mst
Passive stop time	adjustable between 0.5 and 2 s
Indication	- 1 green indicator light: Radio status and quality - 1 yellow indicator light: Power on - 1 red indicator light: fault and diagnostic
Power supply protection	- Against polarity inversions - Against overcurrents by fuse

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

ADDITIONAL OPTIONS

EXTENSION BOARD TO COMMUNICATE WITH EQUIPMENT USING OTHER COMPLEMENTARY ELECTRICAL SIGNALS

Galvanic insulation	> 2.5 kV
2 logic inputs:	
Contacts and connections	4 connection points with spring-type plug-in connectors
Active input consumption	< 20 mA
High level on input	> 3 VDC
Low level on input	< 2 VDC
Voltage	0-30 VDC Max
1 analogue input:	
Contacts and connections	2 connection points with spring-type plug-in connectors
Type of signal	0-10 V or 4-20 mA
Active voltage input consumption	< 10 mA
1 analogue output:	
Contacts and connections	2 connection points with spring-type plug-in connectors
Type of signal	0-10 V or 4-20 mA
Voltage output max. current	< 10 mA
1 RS 485 serial link:	
Contacts and connections	2 connection points with spring-type plug-in connectors
Protocol	Modbus RTU slave
Data rate	1200, 2400, 4800, 9600, 19200 (default), 38400, 57600, 115200 bit/s
Parity	none / even (default) / odd
Slave addressing	1 to 247

STARTUP BY IR VALIDATION

ACTION AREA LIMITATION

BUILT-IN HORN

Power 100 dB

SYNCHRONIZATION OF EQUIPMENT

- Master / Master
- Tandem
- Pitch and Catch

TRANSMITTER / RECEIVER 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 = 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	
Through insulated remote antenna, 1/2 wave, with 2 m BNC cable	VUA102AH	VUA102BH	approximate length: A = 320 mm ; B = 190 mm Required drill hole Ø15 mm
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).

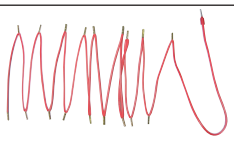
ACCESSORIES: antennas

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
PWT02	Wiring accessories for common points	
PWT19	Mounting accessory for industrial connector	
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	**10 m cable extension + connector** for PWT20 IR module	
UDWR40	**Wiring interface to connect 3 infrared IR modules PWT20 on a receiver IR input** (delivered with 10 m cable to be connected to the receiver IR input and mounting kit using 2 magnetic fastening pads)	
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

A company of

Not all products shown on this leaflet may be available in your area: please contact your Conductix-Wampfler office.

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