COMPACT DESIGN

COMMUNICATING SYSTEM

TRANSCEIVER

Nemo

The Nemo radio transceiver by JAY Electronique provides solutions to the broad range of functional needs of secure applications, through a wide variety of industrial network communication buses. 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, feed-back, alarms, mapping actuators/outputs, interlocks, network features, access by PIN codes).

→ Cable glands, circular connector(s) M12 on transceiver for easy installation.

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

→ Communication with the equipment on **RS485 Modbus RTU Network, CANopen, DeviceNet, PROFIBUS, or real-time deterministic Ethernet POWERLINK** industrial network, or most other industrial Ethernet networks.

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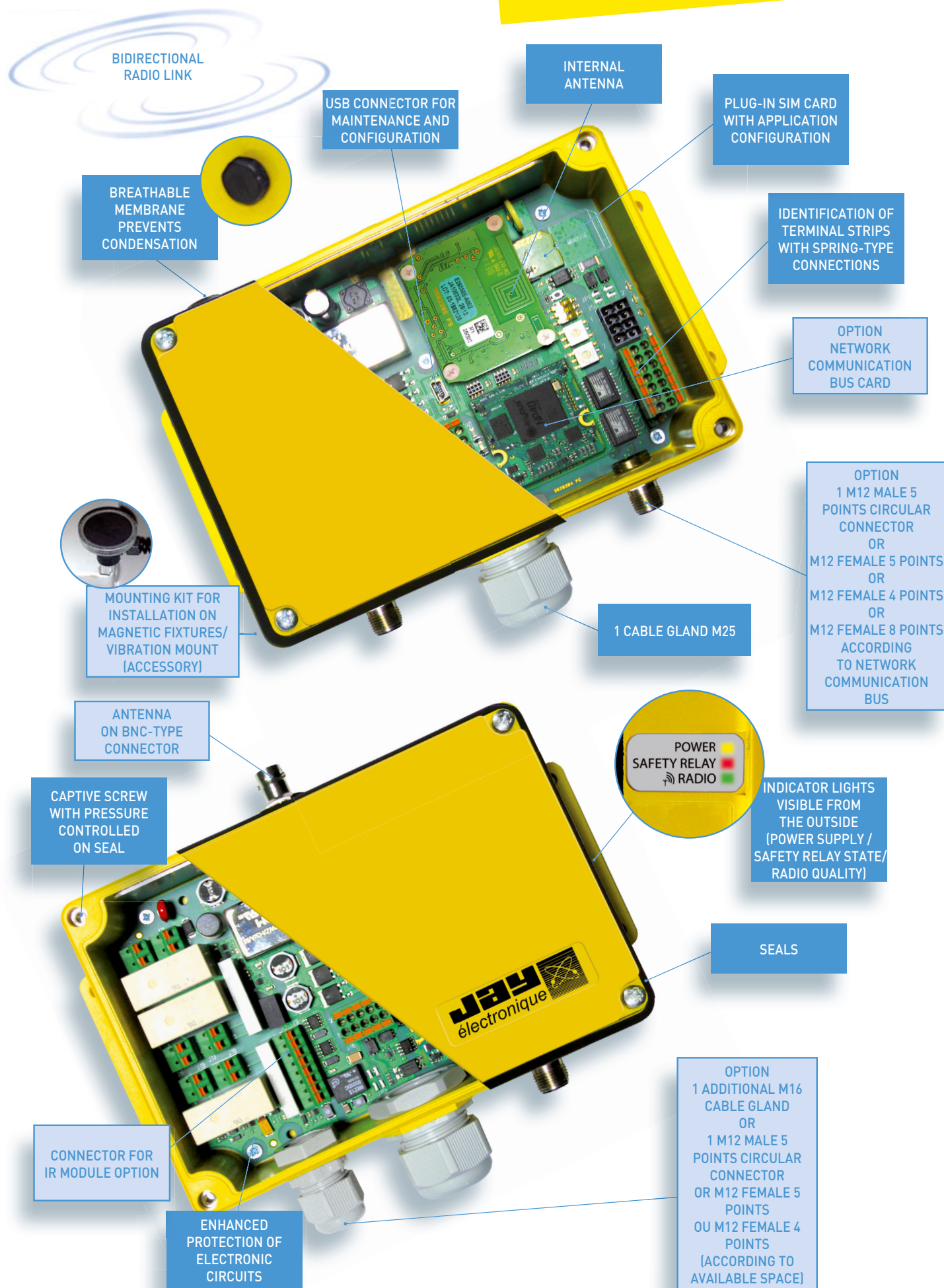
Machinery directive 2006/42/EC :
Emergency stop
→ SIL 3 per EN 61508
→ Performance level PL e per EN ISO 13849-1 and -2
EC type certificate issued by TÜV NORD

TÜV NORD
TÜV NORD CERT GmbH
Type Tested
(In progress)

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

BIDIRECTIONAL
RADIO LINK

INTERNAL
ANTENNA

USB CONNECTOR FOR
MAINTENANCE AND
CONFIGURATION

PLUG-IN SIM CARD
WITH APPLICATION
CONFIGURATION

BREATHABLE
MEMBRANE
PREVENTS
CONDENSATION

IDENTIFICATION OF
TERMINAL STRIPS
WITH SPRING-TYPE
CONNECTIONS

OPTION
NETWORK
COMMUNICATION
BUS CARD

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

OPTION
1 M12 MALE 5
POINTS CIRCULAR
CONNECTOR
OR
M12 FEMALE 5 POINTS
OR
M12 FEMALE 4 POINTS
OR
M12 FEMALE 8 POINTS
ACCORDING
TO NETWORK
COMMUNICATION
BUS

1 CABLE GLAND M25

ANTENNA
ON BNC-TYPE
CONNECTOR

POWER
SAFETY RELAY
RADIO

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

CAPTIVE SCREW
WITH PRESSURE
CONTROLLED
ON SEAL

SEALS

Jay
électronique

CONNECTOR FOR
IR MODULE OPTION

OPTION
1 ADDITIONAL M16
CABLE GLAND
OR
1 M12 MALE 5
POINTS CIRCULAR
CONNECTOR
OR M12 FEMALE 5
POINTS
OU M12 FEMALE 4
POINTS
(ACCORDING TO
AVAILABLE SPACE)

ENHANCED
PROTECTION OF
ELECTRONIC
CIRCUITS

Jay électronique

DESCRIPTION

The Nemo 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)

→ **2 function relays PL c per EN13849-1 and -2**

→ 1 logic 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 or communication bus (option) 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	600g
Dimensions	190 x 120 x 60 mm max (not including antenna)
Operating temperature range	- 20°C to + 60°C
Storage temperature range	- 30°C to + 70°C
Cable lead-out	- via 1 or 2 cable glands
	- via 1 or 2 M12 circular connectors
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
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 :
	50 m in clear environment [1]

ELECTRICAL CHARACTERISTICS

Power supply voltage	9 to 30 VDC
Maximum consumption	18 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 : function relay status (visible with housing open)
	- 2 green indicator lights + 2 red indicator lights : communication bus status (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

Type of contacts	1 relay with linked contacts
	2 relays with NO contacts
Contacts and connections	2 connection points, potential free, by contact Spring-type terminal strips
Outputs	- Max. Interrupting capacity. 6A / output
	- Max. admissible current for all outputs 12A
	- Max. voltage 230VAC

Logic input

Connection	2 connection points Spring-type terminal strips
High level on input	> 3 VDC
Low level on input	< 2 VDC
Voltage	0-30Vdc Max
Active input consumption	< 20mA

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

EMERGENCY BY WIRE CONNECTION
Compatible with Pika and Moka operator modules (in this case, the Modbus RTU communication is unavailable)

COMMUNICATION BUS OPTIONS

RS485 PROFIBUS — PROFIBUS

RS485 DEVICENET — DeviceNet

ETHERNET POWERLINK — ETHERNET POWERLINK

ETHERNET/IP — EtherNet/IP

Straight antenna, 1/4 wave, BNC

Reference : VUA001A in 433MHz
Reference : VUA001B in 869MHz

Through insulated remote antenna with 0,5m BNC cable

Reference : VUA100AH in 433MHz
Reference : VUA100BH in 869MHz

Through insulated remote antenna with 2m BNC cable

Reference : VUA102AH in 433MHz
Reference : VUA102BH in 869MHz

Through insulated remote antenna with 5m BNC cable

Reference : VUA105AH in 433MHz
Reference : VUA105BH in 869MHz

Through insulated remote antenna with 10m BNC cable

Reference : VUA110AH in 433MHz
Reference : VUA110BH in 869MHz

Insulated and magnetic remote antenna with 3m BNC cable

Reference : VUA103AM in 433MHz
Reference : VUA103BM in 869MHz

Insulated and magnetic remote antenna with 5m BNC cable

Reference : VUA105AM in 433MHz
Reference : VUA105BM in 869MHz

Transceiver mounting kit using magnetic fixtures

Reference : UDWR38

2m cable + 16-pin male connector

Reference : UDWR14

2m cable + 24-pin male connector

Reference : UDWR13

Cable for wire connection between operator module and transceiver

Reference : PWL010
Length : 10 meters

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

JAY électronique

ZAC La Bâtie
Rue Champrond
F 38334 SAINT-ISMIER France

Tel. +33 (0)4 76 41 44 00
Fax +33 (0)4 76 41 44 44

www.jay-electronique.com