

COMPACT DESIGN**BUS COMMUNICATION****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, feedback, 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, PROFINET, EtherCAT, Modbus TCP/IP, EtherNet/IP, or realtime deterministic Ethernet POWERLINK industrial network.**

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



44 205 13199113

Radio equipment

(low voltage, electromagnetic compatibility, radio spectrum)
2014/53/EU



BIDIRECTIONAL
RADIO LINK

USB CONNECTOR FOR
MAINTENANCE AND
CONFIGURATION

INTERNAL
ANTENNA

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

OPTION
ANTENNA
ON BNC-TYPE
CONNECTOR

POWER
SAFETY RELAY
RADIO

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

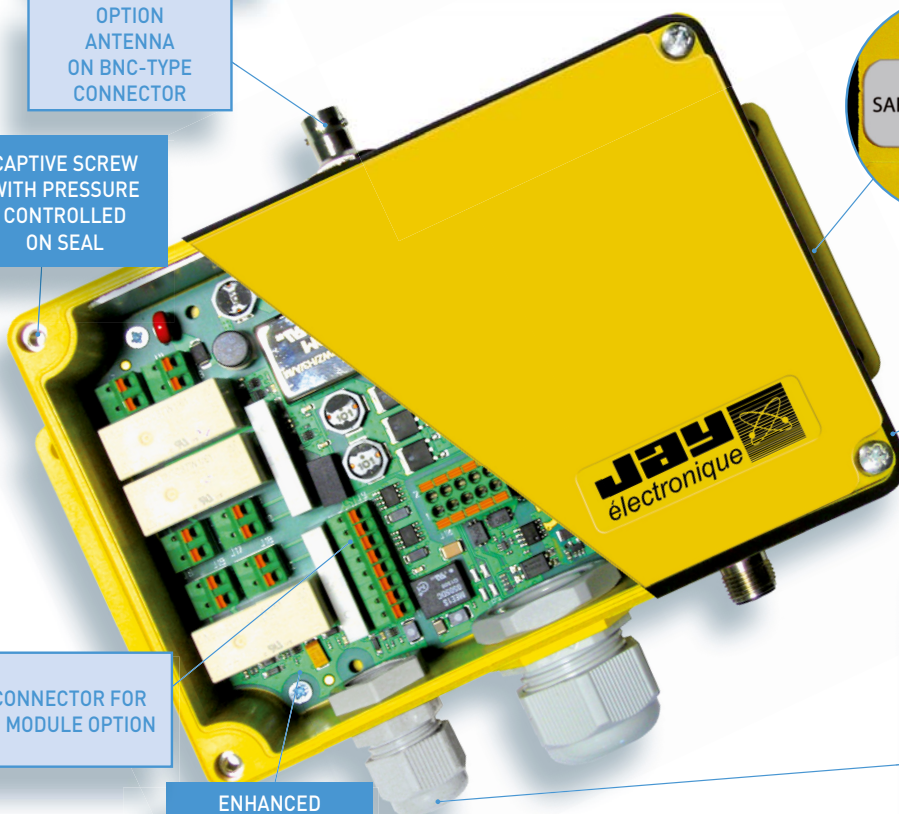
CAPTIVE SCREW
WITH PRESSURE
CONTROLLED
ON SEAL

SEALS

CONNECTOR FOR
IR MODULE OPTION

ENHANCED
PROTECTION OF
ELECTRONIC
CIRCUITS

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



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 secured by wiring and safety relay RSF3 PL d according to EN13849-1 and -2, SIL 3 according to EN61508
- 1 logic input
- 1 RS485 Modbus RTU 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	600 g
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 - 64 programmable frequencies on 911-918 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 : 0,5 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 : 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 ...).

ADDITIONAL OPTIONS

STARTUP BY IR VALIDATION

ACTION AREA LIMITATION BY IR

OPERATOR MODULE / TRANSCIVER ASSOCIATION BY IR

SYNCHRONISATION OF EQUIPMENT

- Master / Master
- Tandem
- Pitch and Catch

EMERGENCY BY WIRE CONNECTION (UNDER DEVELOPMENT)

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

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

Relay 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, 6 A / output - Max. admissible current for all outputs 12 A - Max. voltage 230 VAC

Logic input

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

Modbus RTU Slave

Contacts and connections	1 RS 485 serial link 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

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

COMMUNICATION BUS OPTIONS

RS485 PROFIBUS/PROFINET



RS485 DEVICENET



ETHERNET POWERLINK



ETHERNET/IP



ETHERCAT



MODBUS TCP/IP



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	
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 (option antenna on BNC-type connector)

OTHER ACCESSORIES



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 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 + connection for PWT20 IR module
Reference : UDWR10



Cable for wire connection between operator module and transceiver (under development)
Reference : PWL010
Length : 10 meters
Equipped with a C16 female connector on one side and a C16 male connector on the other side

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

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