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1. PRODUCT DESCRIPTION

The RLH-xxxPA-NIS cylindrical read/write modules have a threaded metal housing of either M18 or M30 dimension. The RLH-xxx-PA-NIS rectangular read/write modules have a plastic housing. All devices have a M12 male connector.

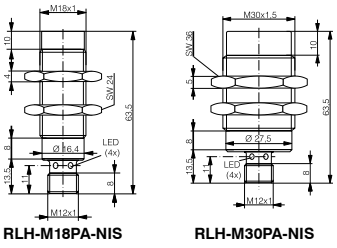
The devices can be set and operated via an IO-Link interface.

HF RFID SYSTEM

READ/WRITE MODULES (RWM)
RLH-XXXPA-NIS

HOUSING	READ/WRITE DISTANCE
M18	34 mm
M30	50 mm
C44	78 mm

- ✓ Metal threaded housing (M18, M30)
- ✓ 40×40 mm plastic housing (C44)
- ✓ Sensing face of PBTP
- ✓ Insensitive to dirt
- ✓ IO-Link V1.1.2
- ✓ 2× PNP output in SIO mode configurable



RLH-M18PA-NIS | RLH-M30PA-NIS | RLH-C44PA-NIS

2. PRODUCT IDENTIFICATION

2.1. REFERENCE KEY

RLH-C44PA-NIS

RFID PRODUCTS	**R**
RFID SYSTEM TYPE	**L**
Adapter	A
Data coupler	C
Interface	I
Reader	L
Portable reader	P
Transponder	T
RFID TECHNOLOGY	**S**
Conldent HF (13.56 MHz)	H
HOUSING TYPE	
Threaded cylindrical	M
Squared	C
HOUSING SIZE	
Cylindrical devices	
M18	18
M30	30
Cubic devices	
Cubic 4# mm × 4# mm	44
SENSING FACE MATERIAL	
PBTP	P
CONNECTION / ROGRAMMING	
Plug connection	S
COMMUNICATION COMPATIBILITY	
IO-Link Output	I
EMBEDDABILITY	
Embeddable	E
SERIAL PERFORMANCE	
Standard version (+80°C)	A

2.2. IO-LINK CHARACTERISTICS

IO-LINK CHARACTERISTICS	VALUE
Vendor ID	0x342
Device ID	0xAB0500
IO-Link Protocol	1.1.2
SIO-Mode	Supported
Process data	32 bytes input / 32 bytes output
Baudrate	COM3 (230.4 kBaud)
Minimum cycle time	10 ms
Supported Access Locks	Parameter: no, Data Storage: yes, Local Parameterization: no, Local User Interface: no
Sub Index Access	No sub index addressing possible except otherwise specified

2.3. QR CODE FOR IODD FILES OR PRODUCT LANDING PAGE

IODD files may be downloaded from

https://www.contrinex.com/collections/rfid

Select the product name to display the product page with corresponding downloads.
Alternatively, just click/scan the QR code on the left.

- Remark: for technical specification please refer to the datasheet on our webpage

3. FUNCTIONAL PRINCIPLE OF RFID

The read/write modules are used for contactless data exchange with tags.

The controller sends commands and data to the read/write module and receives the corresponding response data from the read/write module. Reading the UID of the RFID tag in the area or writing an RFID tag with a specific production date are examples of typical commands. To communicate with the tag, the data is encoded by the read/ write module and transmitted via an electromagnetic field, which also powers the tags.

A read/write module contains a transmitter and receiver, and a coupling element (coil antenna) for communication with the tag.

Inductive coupling is used for transmission between the read/write module and the tag on devices in the HF range.

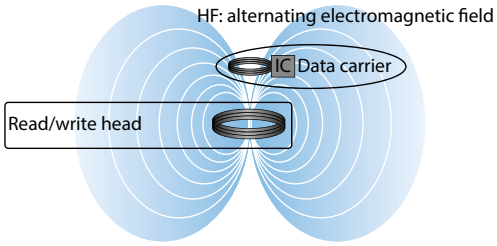


Fig. 1: Operating principle of HF-RFID

The coupling element of the read/write module generates an electromagnetic AC field. This creates a transmission window, known as an air interface, in which the data exchange with the tag takes place. The size of the transmission window depends on the combination of read/write module and tags.

Each Contrinex read/write module can communicate with one Contrinex tags. This requires the read/write module and the tag to operate in the same frequency range. Depending on the power and frequency used, the device ranges vary from a few millimeters up to about 64mm. The specified maximum read/write distances only represent typical values under laboratory conditions without allowing for the effect of materials. The achievable distances may vary due to component tolerances, the mounting situation in the application, ambient conditions and the effect of materials (particularly metal and liquids).

4. INTENDED USE

Read/write modules work on a frequency of 13.56 MHz and are used as a means of contactless data exchange with tags within the HF RFID system. For the IO-Link communication mode, the devices can only be connected and operated via IO-Link masters that comply with the V1.1.2 specification. The devices may only be used as described in these instructions. Any other use is not in accordance with the intended use.

Contrinex accepts no liability for any resulting damage.

5. MODES

The devices allow passive HF tags to be read or written in single mode. For this the devices form a transmission zone that varies in size and range according to the tags used and the operating conditions of the application. Refer to the data sheets for the applicable maximum read/write distances.

The read/write modules are only suitable for use in static operation or in slow moving applications.

The devices can be operated in IO-Link mode or in standard I/O mode (SIO mode). IO-Link mode provides bidirectional IO-Link communication between an IO-Link master and the read/write modules. For this the devices are integrated in the controller level via an IO-Link master. The data to be read or written is made available with the process data via the IO-Link interface. Besides the read data, diagnostics and identification messages can also be queried via IO-Link.

Different device functions can be configured via the IO-Link interface.

The presence of tags can be queried in SIO mode. The data on the tags can also be compared with a data record stored in the read/write module.

5.1. IO-LINK MODE

The devices must be connected to an IO-Link master for operation in IO-Link mode. If the port is configured in IOL mode, bidirectional IO-Link communication is provided between the IO-Link master and the device. For this the device is integrated in the controller level via an IO-Link master. The communication parameters are exchanged first of all; the cyclic data exchange of the process data (process data objects) then starts.

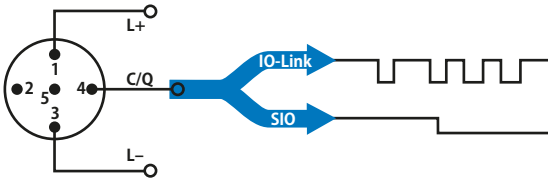
5.2. SIO MODE (STANDARD I/O MODE)

In standard I/O mode no IO-Link communication takes place between the device and the master. The device only transfers the switching state of its binary outputs and can also be run via a fieldbus device or controller with digital PNP inputs. An IO-Link master is not required for operation. The device parameters can be set via IO-Link and then operated at the digital inputs with the appropriate settings in SIO mode. Not all functions and properties of the device can be used in SIO mode.

6. INSTALLATION AND IO-LINK CONNECTION

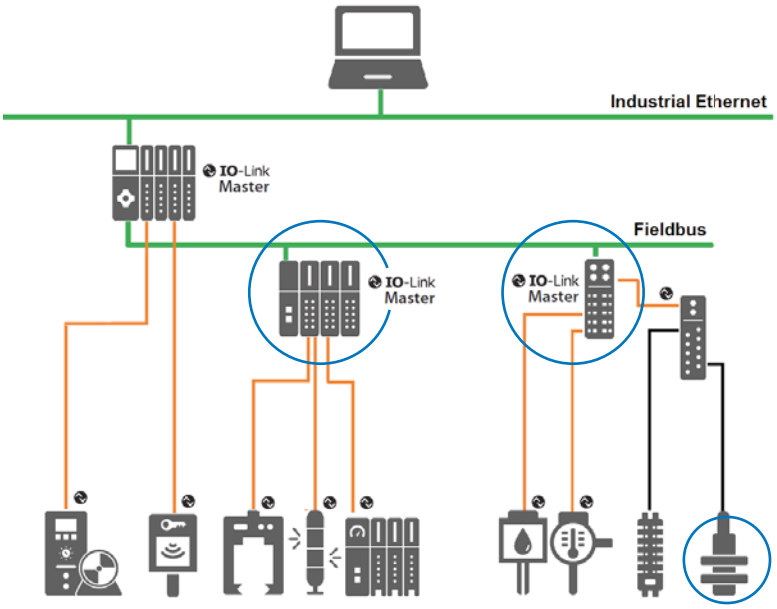
- Worldwide standardised IO technology (IEC 61131-9)
- Enables communication with sensors & actuators
- Devices are recognised, parameterised and diagnosed
- Data acquisition of process data

Sensor-/actuator interface
example: M12, 4 pin



Pin	signal	remark
1	L+	24 V
2	out	depend on sensor
3	L-	ground
4	C/Q	communication/ switching signal

implementation: the switching pin is also used as communication wire



6.1. IO-LINK MASTER

IO-Link is not a fieldbus!

It‘s a point-to-point connection between a Master and a device. The IO-Link Master establishes the gateway to a fieldbus like ProfiNet, ProfiBus, EtherNet etc.

INFO

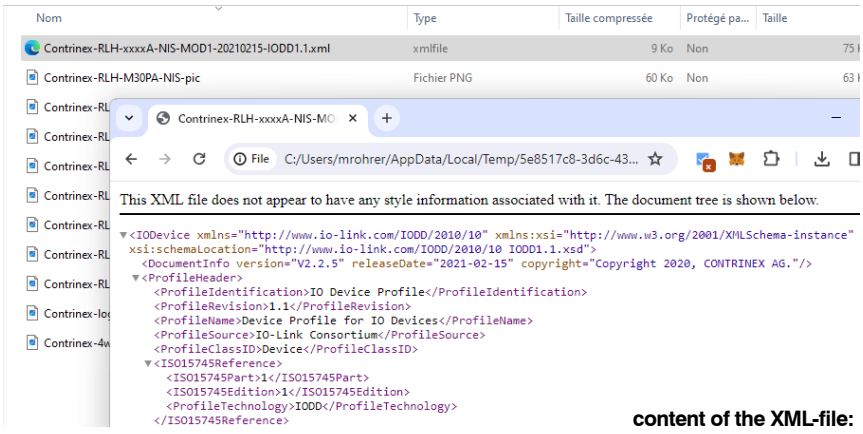
An IO-Link device requires an IODD file. (IO-Link-Device-Description)

IO-Link brings the communication down to the sensor-/actuator level

6.2. IODD

the IODD is availabe IO-Link brings the communication down to the sensor-/actuator levelle as ZIP file on the product‘s website and provides the driver code and additional data so that the device and all its features is recognized correctly.

- description of functions and registers
- certificate
- XML-file containing the electronic datasheet
- Images/logos to be displayed on the HMI



content of the XML-file:

7. FUNCTIONS AND FEATURES

The following functions and properties can be set via the IO-Link interface:

- Operating mode for SIO mode:
  - Querying the presence of tags (Tag presence)
  - Comparing tags (Data update)
  - Alarm output
- Output configuration Q1 and Q2: NC contact or NO contact
- RSSI limit value for alarm outputs and setting the optimum detection range
- Type of the alarm outputs: time-triggered or RSSI-triggered
- Password

7.1. RSSI VALUE OUTPUT

The RSSI value indicates the signal strength of the response from the tag to the read/write module.

The RSSI value is represented as a value on a scale from 0 to 7. The RSSI value does not have a linear characteristic in relation to the read/write distance.

An RSSI value can be set via IO-Link as a threshold value (e.g. for alarm functions).

The RSSI value depends on the following factors:

- Distance between read/write module and tag: the shorter the distance between read/write module and tag, the greater the RSSI value.
- Dimensions of the tag: the larger the tag, the greater the RSSI value.
- Effect of metal: metal has an effect on the electromagnetic field of the read/write module and thus the RSSI value.
- Tolerances: a tolerance of up to 30 % must be calculated for the achievable range of the tags. The 30% tolerance also applies to the RSSI value.

Note: RSSI register Index 42h sub index 03 h to define optimum range. Default: 1

CONFIGURATION PARAMETER (IO-LINK / SIO MODE)						
Index	**Sub Hex**	**Name**	**Access**	**Data Type**	**Value**	**Default**
RF CONFIGURATION						
42_h	03h	RSSI Threshold	R/W	uint8	0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7	01_h

7.2. PASSWORD FUNCTION

The password function enables the memory areas of the tags with the following reference to be protected from write or read access:

– RTH-xxxx-NF0

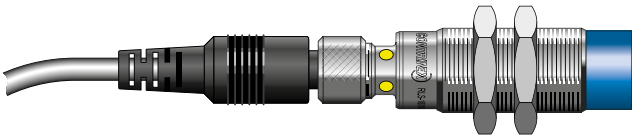
A password for the tags cannot be defined with the IO-Link read/write module.
A password can be set with any RFID reader and system that offers this operation. For example, some RFID tools for mobile phones offer a "Write Password" function. For example, "NFC Tools" (available in the App Store and Google Play).

– Select the chip type of the tag used via the Mode parameter (index 0x58, subindex 0x01).
– Set the defined tag password via the Password parameter (index 0x58, subindex 0x02) in the read/write head: Enter the password in the reverse order to the set password.

Example: The password 01020304 has been written to the tag. The entry in the Password parameter is 04030201.

8. LED INDICATION IO-LINK MODE / SIO MODE

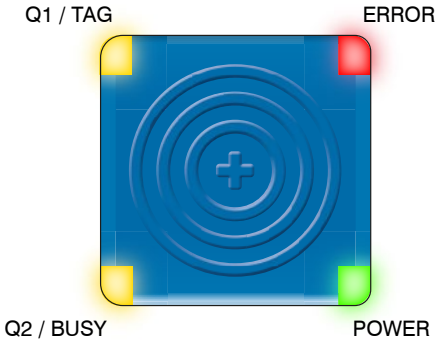
RLH-M18PA-NIS / RLH-M30PA-NIS



This LED is yellow OR green
Yellow condition dominates green

Green LED blinking 1 Hz: RWM is ON and IO-Link Mode used
Green LED ON: RWM is ON and SIO Mode used

RLH-M30PA-NIS



POWER LED blinking 1 Hz: RWM is ON and IO-Link Mode used

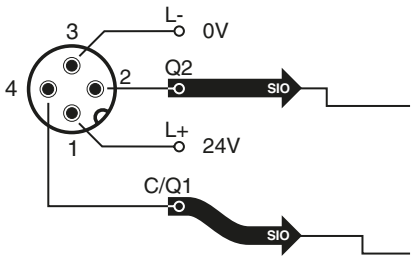
POWER LED ON: RWM is ON and SIO Mode used

9. SETTING AND PARAMETERIZATION OF FUNCTIONS AND FEATURES

9.1. SIO OPERATING MODE

This mode must be configured by means of an IO-Link communication.

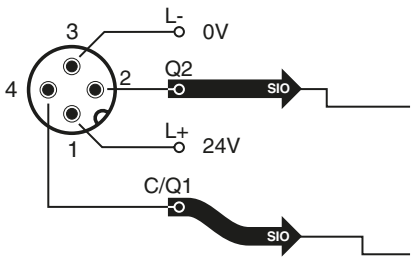
– Tag presence" binary state can be transmitted on Q1 or Q2
– Comparing tag data" binary state can be transmitted on Q1 or Q2



	READER PARAMETER SIO						DEFAULT
Q1	41_h	01_h	C/Q1 PIN SIO Operating Mode	R/W	Uint8	00_h: Transponder Presence 01_h: Compare Data 02_h: Alarm 1 03_h: Alarm 2 04_h: No SIO	00_h
		02_h	SIO Start Address C/Q1	R/W	Uint8	Transponder memory block address where to make the "Compare Data" operation	00_h
		03_h	C/Q1 SIO Data to compare	R/W	Uint32	Reference data value stored in RWM memory to be compared to transponder data	00_h 00_h 00_h 00_h
		04_h	C/Q1 PIN SIO Polarity	R/W	Uint8	00_h: Output "close" if condition = true 01_h: Output "open" if condition = true	00_h

	READER PARAMETER SIO						DEFAULT
Q2		06_h	Q2 PIN SIO Operating Mode	R/W	Uint8	00_h: Transponder Presence 01_h: Compare Data 02_h: Alarm 1 03_h: Alarm 2 04_h: No SIO	00_h
		07_h	SIO Start Address Q2	R/W	Uint8	Transponder memory block address where to make the "Compare Data" operation	00_h
		08_h	Q2 SIO Data to compare	R/W	Uint32	Reference data value stored in RWM memory to be compared to transponder data	00_h 00_h 00_h 00_h
		09_h	Q2 PIN SIO Polarity	R/W	Uint8	00_h: Output "close" if condition = true 01_h: Output "open" if condition = true	00_h

– Alarm 1 & 2

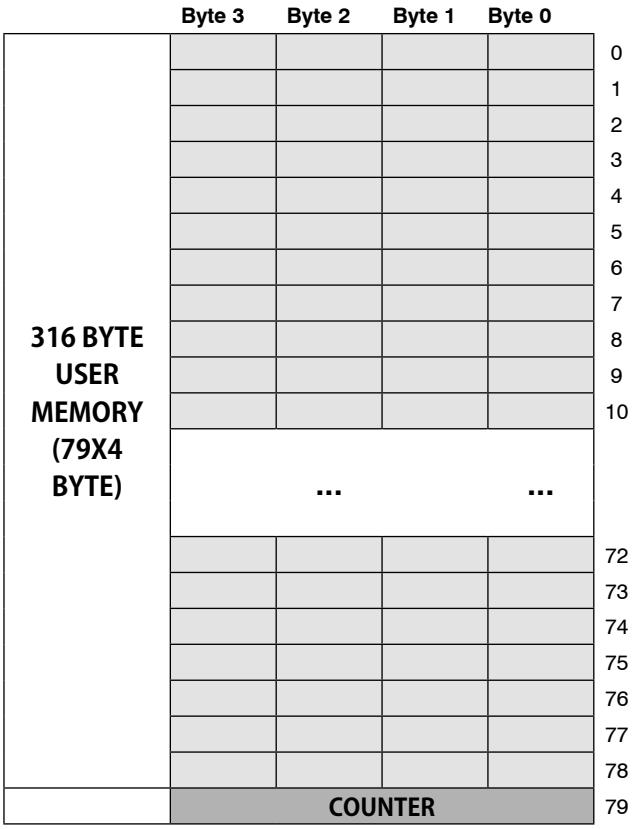


	READER PARAMETER SIO						DEFAULT
AL1	47_h	01_h	Measurement Alarm 1 Configuration	R/W	Uint8	0: Always OFF 1: Active	00_h
		02_h	Measurement Alarm 1 Threshold	R/W	Uint8	ALR1 goes TRUE if: RSSI <= Alarm 1 Threshold Tag IN RANGE Time <= Alarm 1 Threshold	00_h 00_h
		03_h	Measurement Alarm 1 Source	R/W	Uint32	2 = RSSI 3 = Tag IN RANGE Time [ms]	00_h 00_h 00_h

	READER PARAMETER SIO						DEFAULT
AL2	47_h	04_h	Measurement Alarm 2 Configuration	R/W	Uint8	0: Always OFF 1: Active	00_h
		05_h	Measurement Alarm 2 Threshold	R/W	Uint8	ALR2 goes TRUE if: RSSI <= Alarm 2 Threshold Tag IN RANGE Time <= Alarm 2 Threshold	00_h 00_h
		06_h	Measurement Alarm 2 Source	R/W	Uint32	2 = RSSI 3 = Tag IN RANGE Time [ms]	00_h 00_h 00_h

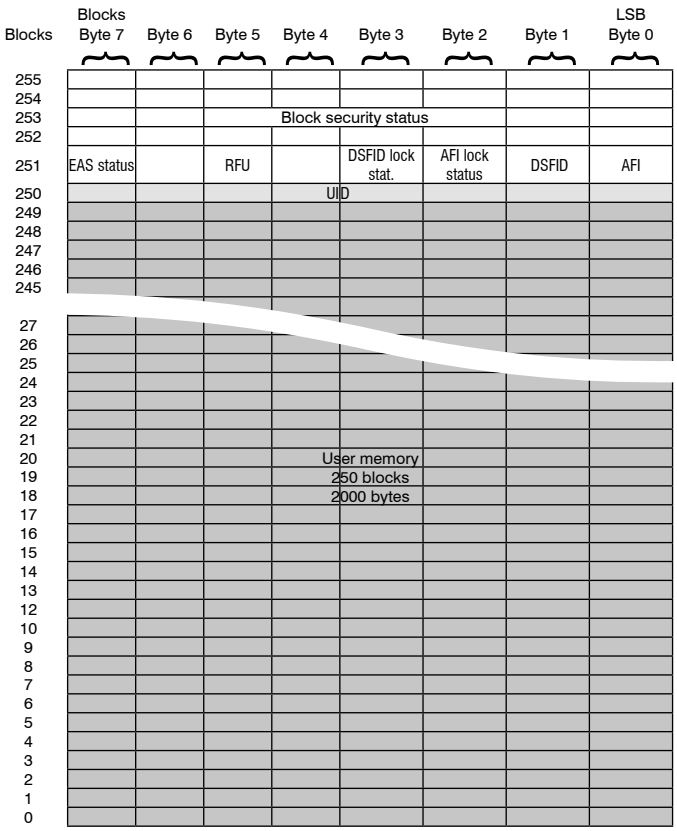
10. MEMORY MAPPING

10.1. 4 BYTE TAGS



- EEPROM memory: 160 bytes user area
- 4 bytes / block, 64 blocks
- 40 blocks user memory
- Read endurance: unlimited
- Write endurance: 10^5 cycles
- Data retention: >10 years

10.2. 8 BYTE TAGS



- FRAM memory: 2Kbyte 2000 bytes user area
- 8 bytes/block, 256 blocks
- 250 blocks user memory
- Read endurance: unlimited
- Write endurance: 10^{12} times
- Data retention: >10 years

11. IO-LINK MODE: RFID COMMANDS

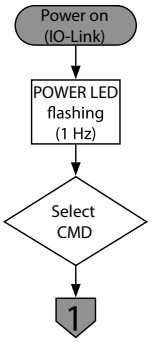
11.1. PROCESS OUTPUT DATA

Byte no.	Bit							
	7	6	5	4	3	2	1	0
0	START	Reserved		N_ANT	CMD			
1	Reserved					NB BLOCK		
2	Reserved							
3	ADD							
4…31	DATA 0…27							

Meaning of the command bits:

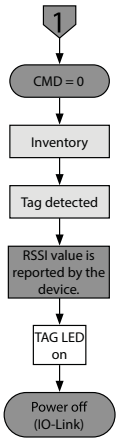
Designation	Meaning
START	1 → 0 or 0 → 1: Execute command. The START bit switches status automatically with the **auto read** and **auto write** commands. 0 or 1: Idle
Antenna state N_ANT	0: Switch on RF field 1: Switch off RF field
CMD	0: No command 1: Automatic read 2: Automatic write 3: Read 4: Write 5: Display UID and time stamp
NB BLOCK	Number of memory blocks to be read or written ▪ EEPROM: max. 7 memory blocks ▪ FRAM: max. 3 memory blocks
ADD	Address of the first memory block on the tag on which a command is to be executed
DATA 0…27	Write data (LSB…MSB) The write data is shown in bytes. Observe the block size of the tag used when specifying the write data: ▪ EEPROM: 4 bytes per block ▪ FRAM: 8 bytes per block The device does not output an error message if more than 28 bytes of write data are specified.

11.2. SELECTING A RFID COMMAND



11.3. IDLE STATE

The read/write head automatically executes an Inventory as soon as a tag is located in the detection range. The RSSI value of the tag in the detection range is forwarded to the controller.



11.4. AUTO READ

With an automatic read, the device automatically executes a read command as soon as the status of the start bit changes (rising or falling edge). The start bit is automatically switched if a tag enters the detection range. 28 bytes of user data can be transferred in each IO-Link cycle. The maximum number of transferable memory blocks depends on the chip type used (EEPROM or FRAM).

The chip type of the tag used must be known in order to execute a write or read command. Because the chip type cannot be selected via the IO-Link parameters, 7 memory blocks can normally be selected. If a value > 3 is selected for FRAM tags, only three blocks are written or read. No error message is output.

Select values for NB Block and ADD according to the following table:

Chip type	Tag (example)	Block size in the tag	Max. value NB BLOCK	Value ADD
EEPROM	RTP-0502-082	4 bytes	7	0…37
	RTP-0502-022	4 bytes	7	0…39
	RTH-DxxQA-NF0	4 bytes	7	0…78
FRAM	RTH-DxxQA-ND0	8 bytes	3	0…249

11.5. AUTO WRITE

With an automatic write operation, the device automatically executes a write command as soon as the status of the start bit changes (rising or falling edge). The start bit is automatically switched if a tag enters the detection range. 28 bytes of user data can be transferred in each IO-Link cycle. The maximum number of transferable memory blocks depends on the chip type used (EEPROM or FRAM).

The chip type of the tag used must be known in order to execute a write or read command. Because the chip type cannot be selected via the IO-Link parameters, 7 memory blocks can normally be selected. If a value > 3 is selected for FRAM tags, only three blocks are written or read. No error message is output.

Select values for NB Block and ADD according to the following table:

Chip type	Tag (example)	Block size in the tag	Max. value NB BLOCK	Value ADD
EEPROM	RTP-0502-082	4 bytes	7	0…37
	RTP-0502-022	4 bytes	7	0…39
	RTH-DxxQA-NF0	4 bytes	7	0…78
FRAM	RTH-DxxQA-ND0	8 bytes	3	0…249

11.6. READ

With a read operation, the device automatically executes a read command as soon as the status of the start bit changes (rising or falling edge). The user must manually trigger the switching of the start bit.

28 bytes of user data can be transferred in each IO-Link cycle. The maximum number of transferable memory blocks depends on the chip type used (EEPROM or FRAM). The chip type of the tag used must be known in order to execute a write or read command. Because the chip type cannot be selected via the IO-Link parameters, 7 memory blocks can normally be selected. If a value > 3 is selected for FRAM tags, only three blocks are written or read. No error message is output.

➔ Select values for NB Block and ADD according to the following table:

Chip type	Tag (example)	Block size in the tag	Max. value NB BLOCK	Value ADD
EEPROM	RTP-0502-082	4 bytes	7	0…37
	RTP-0502-022	4 bytes	7	0…39
	RTH-DxxQA-NF0	4 bytes	7	0…78
FRAM	RTH-DxxQA-ND0	8 bytes	3	0…249

Proceed as follows to execute the command:

– Set rising edge at START bit.
– Evaluate the status of the RDY bit.

The RDY status bit behaves in the same way as the edge status of the START bit.

The RDY bit behaves as follows if during the command execution a tag is located in the detection range of the read/write head:

START	RDY	Meaning
0 → 1	0 → 1	Input data present
1 → 0	1 → 0	Input data present

The RDY bit behaves as follows if during the command execution no tag is located in the detection range of the read/write head:

START	RDY	Meaning
0 → 1	0	No tag within the detection range
	0 → 1	Tag was or is in the detection range, input data available
1 → 0	1	No tag within the detection range
	1 → 0	Tag was or is in the detection range, input data available

11.7. WRITE

With a write operation, the device automatically executes a write command as soon as the status of the start bit changes (rising or falling edge). The user must manually trigger the switching of the start bit.

28 bytes of user data can be transferred in each IO-Link cycle. The maximum number of transferable memory blocks depends on the chip type used (EEPROM or FRAM). The chip type of the tag used must be known in order to execute a write or read command. Because the chip type cannot be selected via the IO-Link parameters, 7 memory blocks can normally be selected. If a value > 3 is selected for FRAM tags, only three blocks are written or read. No error message is output.

➔ Select values for NB Block and ADD according to the following table:

Chip type	Tag (example)	Block size in the tag	Max. value NB BLOCK	Value ADD
EEPROM	RTP-0502-082	4 bytes	7	0…37
	RTP-0502-022	4 bytes	7	0…39
	RTH-DxxQA-NF0	4 bytes	7	0…78
FRAM	RTH-DxxQA-ND0	8 bytes	3	0…249

Proceed as follows to execute the command:

– Set rising edge at START bit.
– Evaluate the status of the RDY bit.

The RDY status bit behaves in the same way as the edge status of the START bit.

The RDY bit behaves as follows if during the command execution a tag is located in the detection range of the read/write head:

START	RDY	Meaning
0 → 1	0 → 1	Input data present
1 → 0	1 → 0	Input data present

The RDY bit behaves as follows if during the command execution no tag is located in the detection range of the read/write head:

START	RDY	Meaning
0 → 1	0	No tag within the detection range
	0 → 1	Tag was or is in the detection range, input data available
1 → 0	1	No tag within the detection range
	1 → 0	Tag was or is in the detection range, input data available

11.8. QUERYING AN UID AND TIME STAMP

The device queries the UID and the following time stamps:

- Time at which tag was detected
- Time in which the tag is located in the detection range

1 Send the process data output with CMD = 5

2 If the tag is present and has been correctly detected:

- UID data is in PDI Byte 4…12.
- Time stamp when tag was detected in PDI Bytes 13…21.
- IN range time MSB first in PDI Byte 22…30. Value is rising

11.9. PROCESS DATA OUTPUT 32 BYTE

Byte	7	6	5	4	3	2	1	0
0	START	RFU		N_ANT	RFU	CMD		
1	RFU						NB BLOCK	
2	RFU							
3	ADDRESS							
4-31	DATA 0 – DATA 27							

Name	Value	Description
START	0 → 1 1 → 0	Start the selected RFID operation when bit toggles. If Auto-Read, Auto-Write or UID command is selected, the bit is not used. The RFID command are sent automatically as long as a transponder is inside the RWM range
	0 1	IDLE
N_ANT	0	Switch ON RF Field
	1	Switch OFF RF Field
CMD	0	No command
	1	Auto-Read
	2	Auto-Write[1]
	3	Read
	4	Write
	1 5	UID and tag timings
NB BLOCK	Number of transponder memory block to R/W	
ADDRESS	First transponder memory block address where the R/W command will be executed	
Data 0	Data to be written LSB	
Data 27	Data to be written MSB	

11.10. PROCESS DATA INPUT 32 BYTE

Byte	7	6	5	4	3	2	1	0
0	RDY	ERR	TAG	ANT	RFU	CMDCOPY		
1	ERROR CODE						ALR2	ALR1
2	RSSI							
3	ADDRESS							
4-31	2 DATA 0 … 27 / UID7 … 0, STTI7 … 0, TIRT7 … 0							

Name	Value	Description
RDY	0 → 1 1 → 0	Command executed and new data available. If Auto-Read, Auto-Write or UID command is selected, bit toggling runs automically as long as a transponder is inside the RWM range
	0 1	No new data available yet
ERR	0	Command executed and no error
	1	Command executed but error
TAG	0	No tag present in front of the RWM
	1	Tag present in front of the RWM
ANT	0	RF field OFF
	1	RF field ON
RSSI	RSSI signal level coming from the transponder	
ERROR CODE	See ERROR CODE list on the left	
ALR2	0	Alarm 2 OFF
	1	Alarm 2 ON
ALR1	0	Alarm 1 OFF
	1	Alarm 1 ON
ADDRESS	First transponder memory block address where the R/W command was executed	
2 DATA 0 … 27	Read data LSB	
UID7 … 0	Transponder unique ID number	
STTI7 … 0	System time transponder IN. Data record when a transponder enters in the RWM range	
TIRT7 … 0	Transponder IN RANGE time	

Note: For the read/write commands, byte 4...31 are completely used only to transfer 28 bytes of user memory to or from the Tag starting from the ADDRESS specified in byte 3.

12. POCKETCODR INTRODUCTION

WORKS WITH IO-Link SENSORS

NO-CODE SENSOR CONFIGURATION

KEY ADVANTAGES

- ✓ PocketCodr app uses live data graphs to present sensor parameters on-screen and in real time
- ✓ PocketCodr's unique Action Widgets for Smart Sensors eliminate need for coding skills

HIGHLIGHTS

LIVE INTERACTIVE DATA GRAPHS

- ✓ View either routine process data or real-time event-driven changes of state
- ✓ Interactive data graphs shows exactly how a sensor is behaving in real time

ACTION WIDGETS

- ✓ Simple configuration of compatible sensors without the need for programming skills
- ✓ Easy-to-understand in-app process features a series of intuitive, graphics-based screens
- ✓ Familiar controls include sliders, toggle buttons, and checkboxes, while helpful prompts guide users through the configuration

TEAM COLLABORATION

- ✓ PocketCodr enables remote sharing of sensor configurations among team members
- ✓ Sensor configurations are backed-up securely and available on demand at any location

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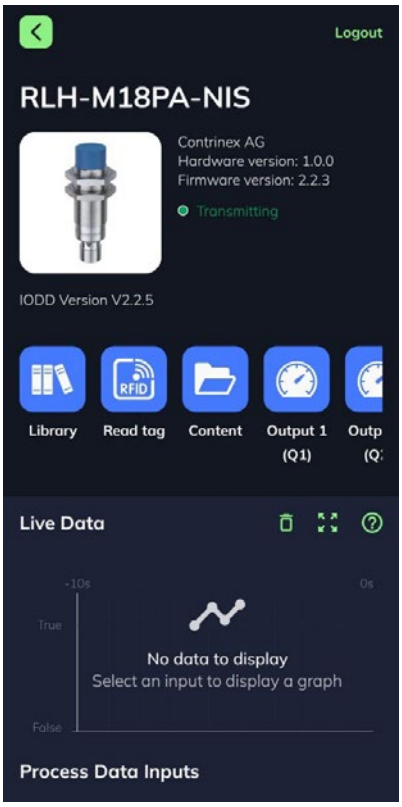
Live Interactive Data Graphs

User-friendly action widgets

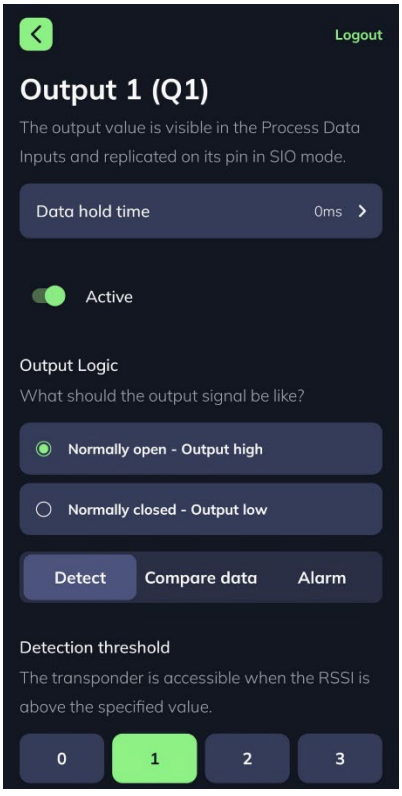
Team collaboration

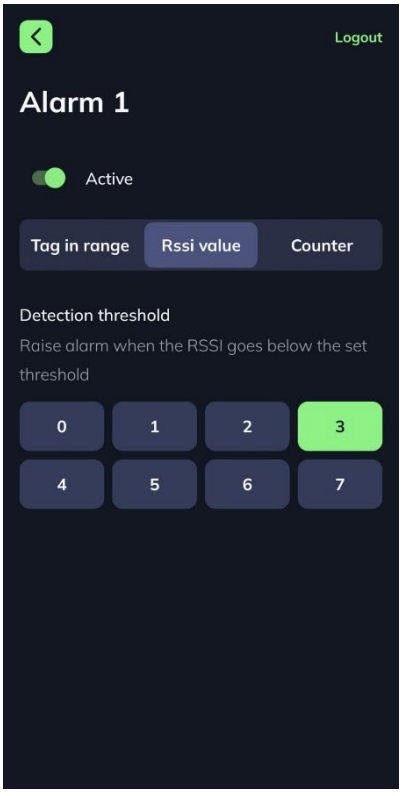
13. ADD-ON: POCKETCODR AND POCKETCODR APP

13.1. OVERVIEW OF THE MAIN WIDGETS

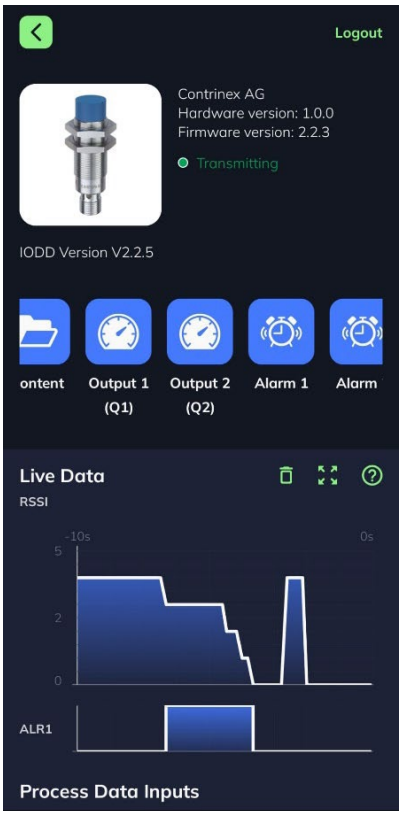


13.1.1. DEFINING THE BEHAVIOR OF OUTPUT 1 / ALARM 1



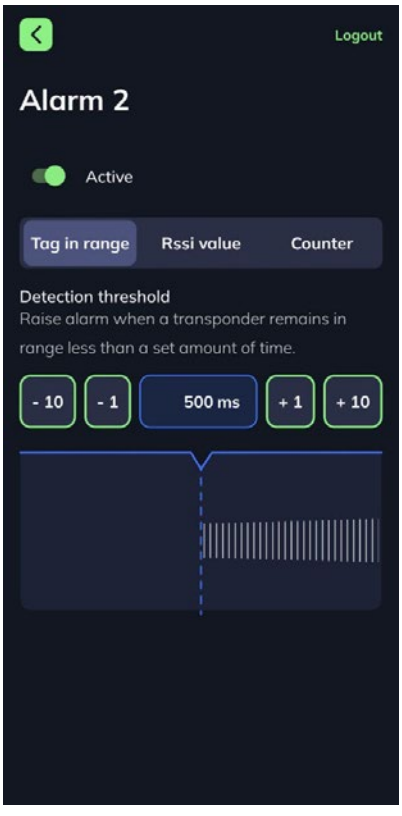


13.1.2. RSSI AND ALARM 1 MONITORING:



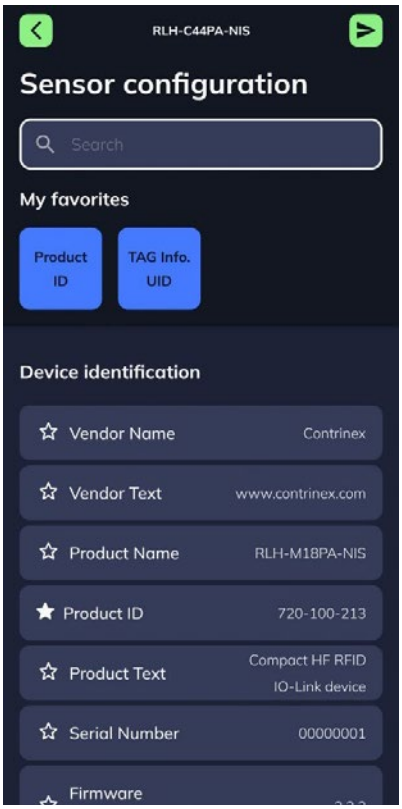
The Alarm is set as soon as the RSSI signal <= 3

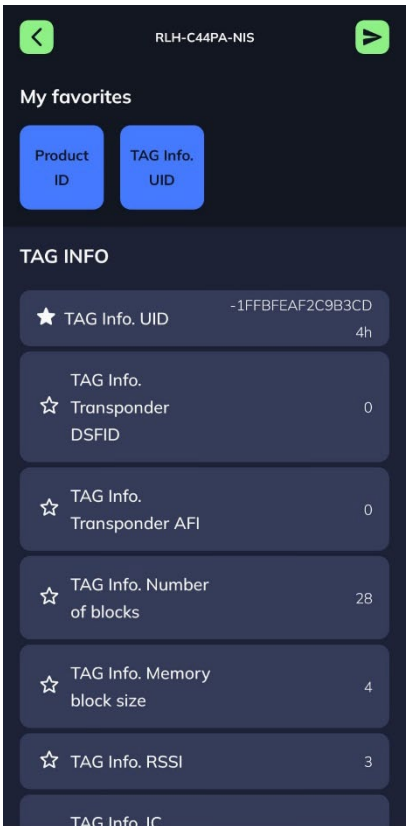
13.1.3. DEFINING THE BEHAVIOR OF ALARM 2: RAISE THE ALARM WHEN A TAG REMAINS IN RANGE LESS THAN 500 MS



The alarm is correctly set when the tag remains in range for a short period (smaller than 500 ms here).

13.2. ALL IO-LINK PARAMETERS BEHIND THE "ALL VALUES" WIDGET



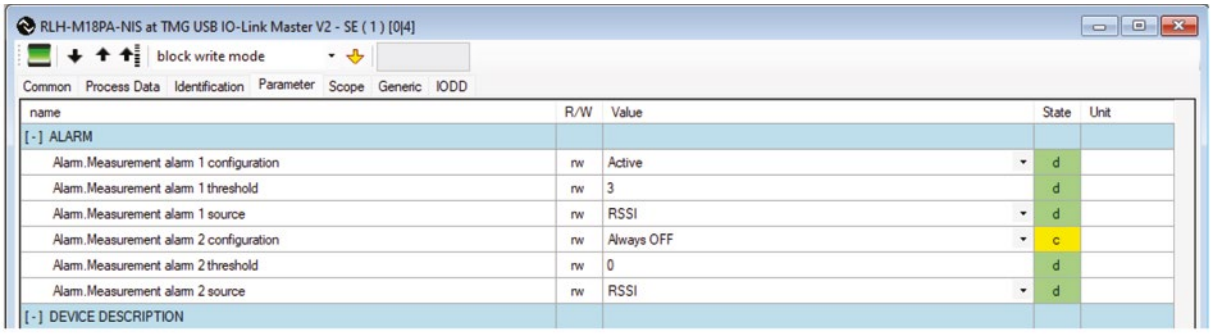


14. ANNEX

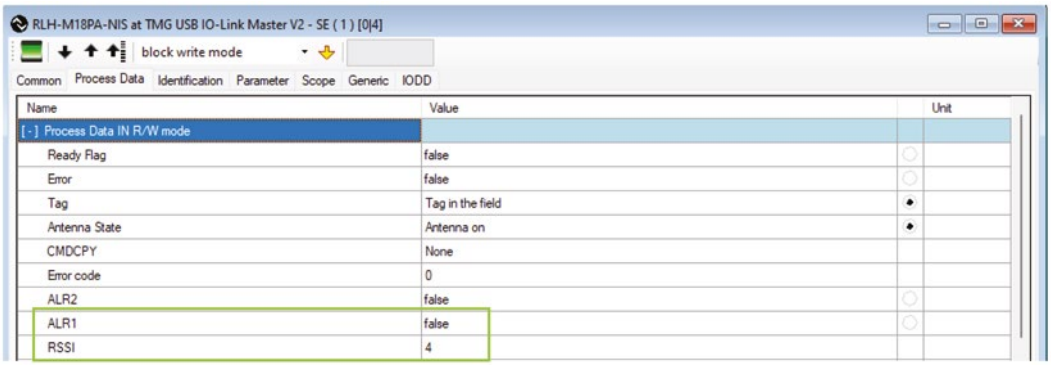
Setting up an RSSI alarm when RSSI ≤ 3 and link the alarm event to Output Q2:

a)

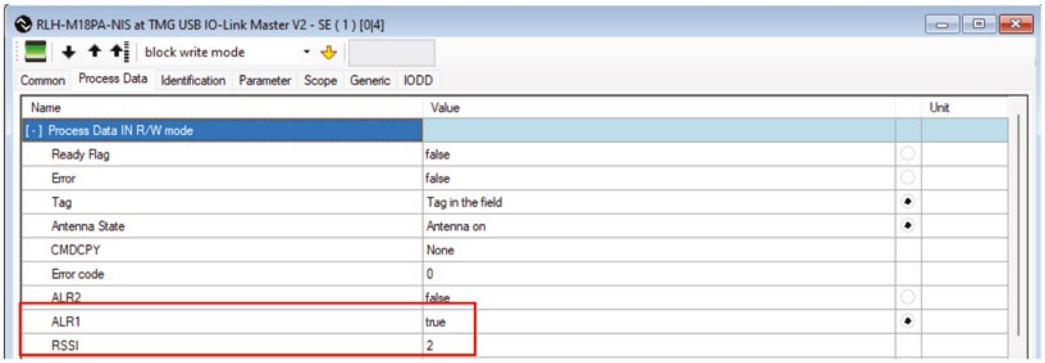
- set e.g. Alarm1 to active
- set Alarm1 source to RSSI
- set Alarm1 threshold to 3 Alarm1 is now configured and activated if RSSI ≤ 3:



Alarm1 is now configured and activated if RSSI ≤ 3:



RSSI = 4: Alarm1 not active



RSSI = 2: Alarm1 active

b)

- set Q2 to Alarm1
- set Q2 PIN SIO Polarity to the desired polarity(open/close)

The Alarm1 event is now linked to the physical output Q2.
Test: in SIO mode (no IO-Link connection) place a tag close to the reader's frontface.
Move the tag slowly away and watch the output Q2 toggle at a certain distance (RSSI ≤ 4).