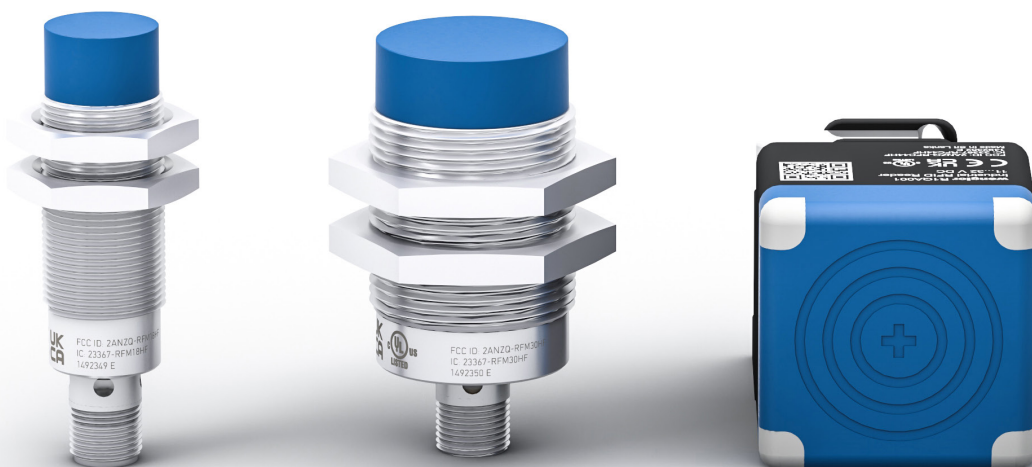


EN

R18A001/R30A001 R1QA001

Industrial RFID



Interface Description

Subject to change without notice
Available as PDF version only
Version: 1.2.0
Status: 14.05.2024
www.wenglor.com

IO-Link R18A001/R30A001/R1QA001

Vendor ID

Product	hex	dec	hex (Bytes)	dec (Bytes)
wenglor sensoric GmbH	0x0057	87	00 57	0 87

Device ID

Product	hex	dec	hex (Bytes)	dec (Bytes)
R18A001/R30A001/R1QA001	0x400301	4195073	40 03 01	64 3 1

IO-Link Version:	V1.1
Parameter Server / Data Storage:	Yes
MinCycletime:	10 ms
SIO-Mode:	Yes
COM-Mode:	COM3
Process data In (Device to Master)	32 Byte
Process data Out (Master to Device)	32 Byte

Process Input Data (Device -> Master)

Byte	7	6	5	4	3	2	1	0
0	Ready	Error	Tag	Antenna State	RFU	CMDCOPY		
1	Error Code						Alarm 2	Alarm 1
2	RSSI							
3	ADDRESS							
4-31	User Memory / UID7...0, STTI7...0, TIRT7...0							

Error Code	Error Name	Error Description
1	Command Not Supported	These error types are defined by the ISO 15693. More information can be found in the operating instructions.
2	Format Error	
3	Option Not Supported	
5	Command Problem	
6	Comm Tag Error	
15	Tag Error	
16	No Memory Block	
18	Block Protected	
27	App Log Error	Password of the RFID Reader does not match with the transponder password.
30	Tag Comm Error	Indicates a transponder communication error (e.g. more than 1 transponder are detected)
255	App General Error	General Error

Name	Value	Description
Ready	0 --> 1 1--> 0	Command executed and new data available.
Error	0	Command executed and no error
	1	Command executed but error
Tag	0	No tag present in front of the RFID Reader
	1	Tag present in front of the RFID Reader
Antenna State	0	RFID field off
	1	RFID field on
RSSI	RSSI signal level coming from the transponder	
Error code	Type of error	
Alarm 2	0	Alarm 2 off
	1	Alarm 2 on
Alarm 1	0	Alarm 1 off
	1	Alarm 1 on
Address	First transponder memory block address where the R/W command was executed.	
Data 0...27	Read data	
UID7...0	Transponder unique ID number	
STTI7...0	System time when transponder is within the RFID field.	
STTI7...1	Transponder in range time	

Process Output Data (Master -> Device)

Byte	7	6	5	4	3	2	1	0
0	Start	RFU		Antenna State	RFU	CMD		
1	RFU					NB Block		
2	RFU							
3	ADDRESS							
4-31	User Memory							

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.
Antenna State	0	RFID field on
	1	RFID field off
CMD	0	No command
	1	Auto-Read
	2	Auto-Write
	3	Read
	4	Write
	5	UID and tag timings
NB Block	0	Number of transponder memory blocks which should be read/ written.
Address	First transponder memory block address where the R/W command will be executed.	
Data 0...27	User Memory	

Parameter

Name	Index (hex)	Index (dec)	Sub-index	R/W	Data type	Default value	Range
Device Settings							
System Command	0x0002	2	0	W	UInt8	-	5 = ParamDownloadStore 128 = Device Reset 130 = Restore Factory Settings 160 = Locate Device
Parameter Access Lock	0x000C	12	1	R/W	Bool	0 = unlocked	0 = unlocked 1 = Data Storage Locked
Data Storage Lock	0x000C	12	2	R/W	Bool	0 = unlocked	0 = unlocked 1 = Data Storage Locked
Local Parameterization Lock	0x000C	12	3	R/W	Bool	0 = unlocked	0 = unlocked 1 = Data Storage Locked
Local User Interface Lock	0x000C	12	4	R/W	Bool	0 = unlocked	0 = unlocked 1 = Data Storage Locked
Reader Parameter SIO							
C/A1 Pin SIO Operating Mode	0x0041	65	1	R/W	UInt8	0	0 = Transponder Presence 1 = Compare Data 2 = Alarm 1 3 = Alarm 2
SIO Start Address C/A1	0x0041	65	2	R/W	UInt8	0	Transponder memory block address where to make the "Compare Data" operation
C/A1 SIO Data to compare	0x0041	65	3	R/W	UInt32	0	Reference data value to be compared to transponder data
C/A1 Pin SIO Polarity	0x0041	65	4	R/W	UInt8	0	0 = Normally Open 1 = Normally Closed
Data Hold Time Output (C/A1 & A2)	0x0041	65	5	R/W	UInt8	0	0 = No Hold time 1 = Hold Time 100 ms 2 = Hold time 200 ms 3 = Hold Time 500 ms 4 = Hold Time 1000 ms 5 = Hold time 2000 ms
A2 PIN SIO Operating Mode	0x0041	65	6	R/W	UInt8	0	0 = Transponder Presence 1 = Compare Data 2 = Alarm 1 3 = Alarm 2
SIO Start Address A2	0x0041	65	7	R/W	UInt8	0	Transponder memory block address where to make the "Compare Data" operation
A2 SIO Data to compare	0x0041	65	8	R/W	UInt32	0	Reference data value to be compared to transponder data
A2 PIN SIO Polarity	0x0041	65	9	R/W	UInt8	0	0 = Normally Open 1 = Normally Closed
RF Configuration							
RSSI Threshold	0x0042	66	3	R/W	UInt8	1	0 = 0 1 = 1 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = 7
Alarm							
Measurement Alarm 1 Configuration	0x0047	71	1	R/W	UInt8	0	0 = Always off 1 = Active
Measurement Alarm 1 Threshold	0x0047	71	1	R/W	UInt32	0	Alarm 1 goes true if: RSSI ≤ Threshold Tag in range time ≤ Threshold SIO A1/ A2 ≥ Alarm Threshold
Measurement Alarm 1 Source	0x0047	71	1	R/W	UInt8	0	0 = RSSI 1 = Tag in Range Time [ms] 2 = SIO A1 3 = SIO A2
Measurement Alarm 2 Configuration	0x0047	71	1	R/W	UInt8	0	0 = Always off 1 = Active

Name	Index (hex)	Index (dec)	Sub-index	R/W	Data type	Default value	Range
Measurement Alarm 2 Threshold	0x0047	71	1	R/W	UInt32	0	Alarm 1 goes true if: RSSI ≤ Threshold Tag in range time ≤ Threshold SIO A1/ A2 ≥ Alarm Threshold
Measurement Alarm 2 Source	0x0047	71	1	R/W	UInt8	0	0 = RSSI 1 = Tag in Range Time [ms] 2 = SIO A1 3 = SIO A2
TAG Info							
UID	0x0043	67	1	R	UInt8	-	Data available only if transponder is in the detection range
Transponder DSFID	0x0043	67	2	R	UInt8	-	Data available only if transponder is in the detection range
Transponder AFI	0x0043	67	3	R	UInt8	-	Data available only if transponder is in the detection range
Number of Memory Blocks	0x0043	67	4	R	UInt8	-	Data available only if transponder is in the detection range
Memory Block Size	0x0043	67	5	R	UInt8	-	Data available only if transponder is in the detection range
RSSI	0x0043	67	6	R	UInt8	-	Data available only if transponder is in the detection range
IC Manufacturer Code	0x0043	67	7	R	UInt8	-	Data available only if transponder is in the detection range
IC Reference	0x0043	67	8	R	UInt8	-	Data available only if transponder is in the detection range
UID List							
Tag History 1	0x0044	68	1	R	UInt64	-	Last transponder UID seen by RFID Reader
Time Stamp Tag History 1	0x0044	68	2	R	UInt64	-	System time record when tag 1 entered the detection range
Tag History 2	0x0044	68	3	R	UInt64	-	-
Time Stamp Tag History 2	0x0044	68	4	R	UInt64	-	System time record when tag 2 entered the detection range
Tag History 3	0x0044	68	5	R	UInt64	-	-
Time Stamp Tag History 3	0x0044	68	6	R	UInt64	-	System time record when tag 3 entered the detection range
Tag History 4	0x0044	68	7	R	UInt64	-	-
Time Stamp Tag History 4	0x0044	68	8	R	UInt64	-	System time record when tag 4 entered the detection range
Tag History 5	0x0044	68	9	R	UInt64	-	First transponder UID seen by RFID Reader
Time Stamp Tag History 5	0x0044	68	0A	R	UInt64	-	System time record when tag 5 entered the detection range
Device Description							
Function Tag	0x0048	72	1	R/W	char [32]	-	
Location Tag	0x0048	72	2	R/W	char [32]	-	
Transponder Time Monitoring							
System Time - Transponder IN	0x004A	74	1	R	UInt64	-	Record system time when transponder enters the detection range [ms]
System Time - Transponder Out	0x004A	74	2	R	UInt64	-	Record system time when transponder leaves the detection range [ms]
Transponder in range time	0x004A	74	3	R	UInt64	-	In Range = Transponder out - Transponder in
Security							
Security Mode	0x0058	88	1	R/W	UInt8	0	0 = Security Mode Inactive 1 = SLI-S or SLIX-2 Security mode active (each read and write operation requires the password) 2 = EM4233SLIC mode active (each read and write operation requires the password)
Password	0x0058	88	2	W	UInt32	0	00000000

Diagnostic

Name	Index (hex)	Index (dec)	Sub-index	R/W	Data type	Default value	Range
Status							
System Time	0x0059	89	1	R	Uint64	-	The system time [ms] is reset at each power down of the RFID reader or in case the standard command 128 (Device Reset) is done.
Successful Login Counter	0x0059	89	2	R	Uint32	-	Counts the number of successful transponder registrations since the last startup / reset of the RFID reader
Error Login Counter	0x0059	89	3	R	Uint32	-	Counts the number of unsuccessful transponder registrations since the last startup / reset of the RFID reader
Error Counter	0x0059	89	4	R	Uint32	-	Counts the number of errors of the RFID Reader since the last startup / reset of the RFID Reader
Power-on Cycles	0x0059	89	5	R	Uint32	-	Counts the number of Power on cycles. The counter cannot be reset. Device must be powered > 550 ms