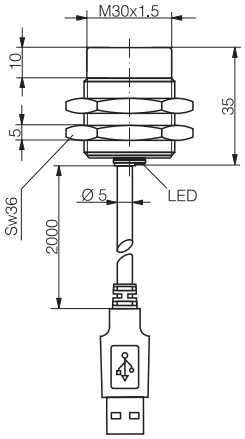
CONTRINEX

HF RFID SYSTEM
READ/WRITE MODULES (RWM)
RLS-1301-220-120

HOUSING	READ/WRITE DISTANCE
M30	60 mm*

- ✓ M30 Metal threaded housing
- ✓ Sensing face of PBTP
- ✓ Insensitive to dirt
- ✓ ISO15693 compatible
- ✓ USB RWM using Contri-NET protocol
- ✓ Cost optimized solution



* Please refer to table page 4

GENERAL DATA	
Carrier frequency	13.56 MHz
Compatible standard	ISO 15693
Maximum transmission speed	26.5 kbit/s
Read-write distance max.	60 mm with RTP-0501-020

INTERFACE	
USB/VCP configuration	
Data transfer rate	115 200 baud
Number of bits 7 / stop bits / parity	8 / 1 / None
RWM configuration	
LED yellow on	RWM live
LED yellow blinking	Transponder detected
ContriNET protocol	✓

ELECTRICAL DATA	
Supply voltage range (Ub)	5 VDC (USB powered)
No-load supply current (field off)	100 mA
Max. current consumption (no load)	200 mA
Polling current	120 mA
Short-circuit protection	✓
Voltage reversal protection	✓
Max. output current	

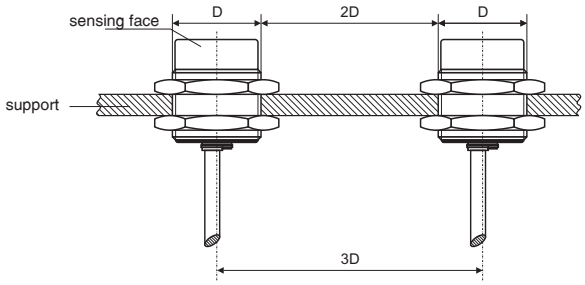
MECHANICAL DATA	
Protection degree	IP67
Ambient temperature range TA**	-25...+70 °C
Storage temperature range TS***	-25...+70 °C
Sensing face material	PBTP
Housing material	Stainless steel
Connector type / Cable length	USB A male / 2 m
Weight (incl. nuts)	144 g

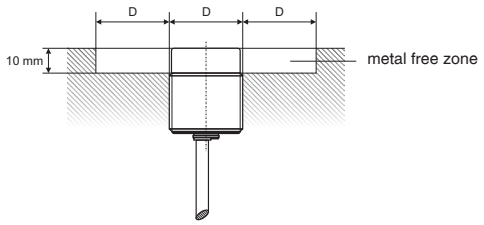
** Read/write operations possible
*** Data retention and mechanical stability limit

MOUNTING RECOMMENDATIONS

CLEARANCE

Read/write modules must not mutually influence each other. For this reason, a minimum distance of 2 x D between the devices must be observed.



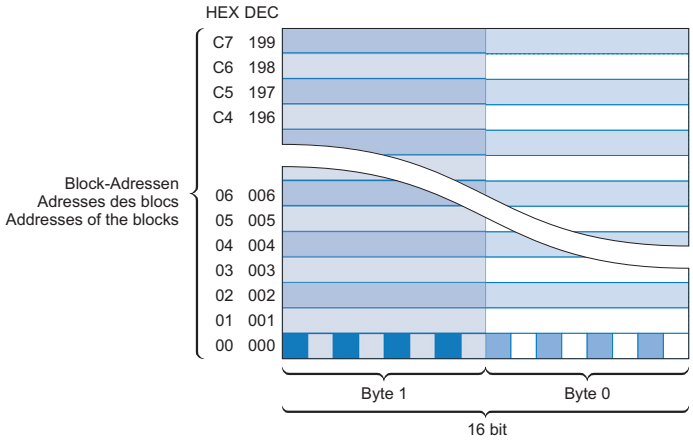


COMMUNICATION SETTINGS

USB/VCP characteristics	Value for RLS-1301-220-120
Data transfer rate (default in bold)	115 200
Number of bits	8
Number of stop bits	1
Parity	No

MEMORY STRUCTURE OF THE READ/WRITE MODULE

The Read/Write Module has a user memory of 3200 bits organized in 200 blocks of 16 bits. Each block is addressable separately by means of the commands Write RWM and Read RWM.

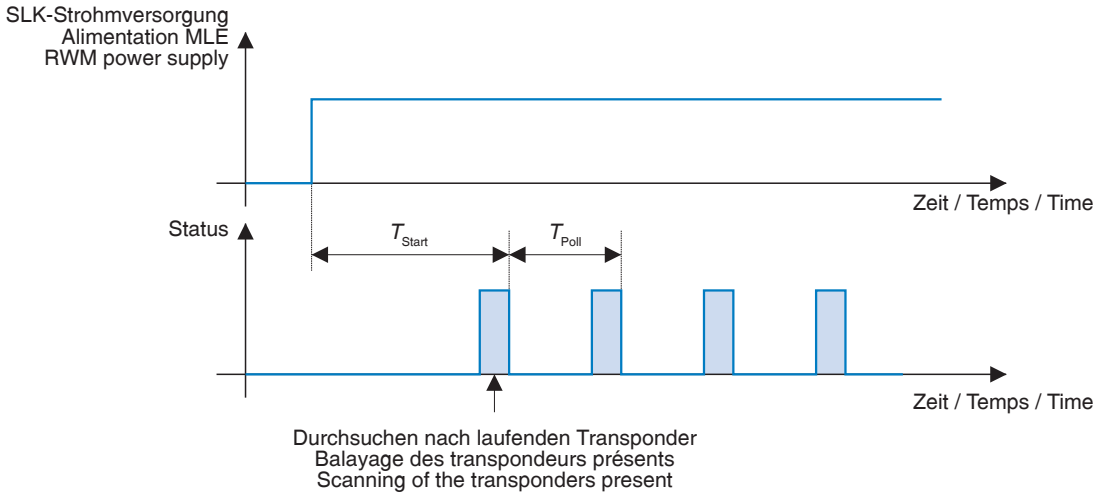


CONTRINEX AG Industrial Electronics
route du Pâqui 5 - P.O. Box - CH 1720 Corminboeuf - Switzerland - **Tel:** +41 26 460 46 46 -
Fax: +41 26 460 46 40 - **Internet:** www.contrinex.com - **E-mail:** info@contrinex.com

TYPICAL TIMES

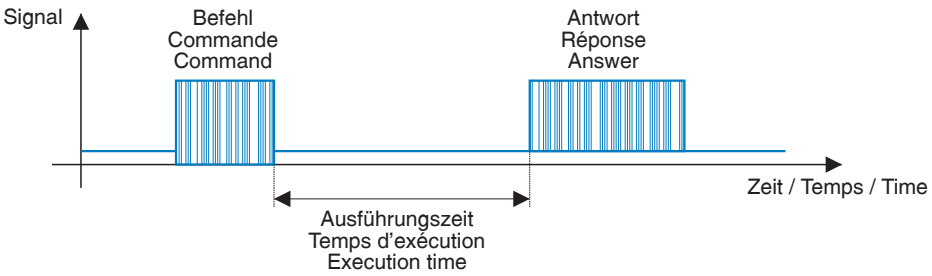
Time name	Description	Value
Starting times	Time between the powering of the RWM and the end of the first scanning of the transponders present	**300 ms**
Polling time	Time for actualization of the list of the transponders present. This time depends on the number of collisions.	**70* ms**
Execution time of the commands	The execution time is defined as the time between the end of the sending of the command and the beginning of the answer	**Command dependent**

*Polling time for 16 transponders without collision



TYPICAL EXECUTION TIMES BY COMMAND TYPE

Command type	Description		Value
Commands related to RWM	Typical execution time		**1.5 ms**
Commands related to Transponder depending on number of blocks	Typical read duration: $T_R = T_0 + N \cdot T_{R0}$ Typical write duration: $T_W = T_0 + N \cdot T_{W0}$	Duration for decoding the command - T_0	**12.0 ms**
		Read duration for one block (32 bits) - T_{R0}	**8.0 ms**
		Write duration for one block (32 bits) - T_{W0}	**12.0 ms**
		Number of blocks concerned - N	
Commands related to Transponder not related to a number of blocks	Typical execution time (e.g. Get System Info, Write AFI, Lock AFI, Write DSFID, Lock DSFID, and so on)		**30 ms**

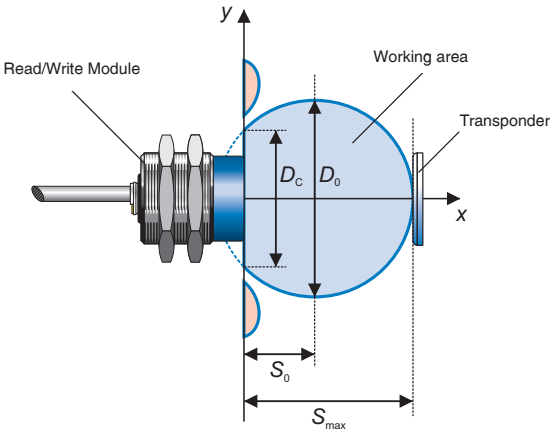


POSSIBLE COMBINATION AND TYPICAL DISTANCE - RLS-1301-220-120

Transponder type	S_{max} [mm]	S_0 [mm]	D_0 [mm]	V_{Rmax} [cm/s]*	V_{Wmax} [cm/s]*
Ø 9 RTP-0090-020	14	3	22	110	91.7
Ø 16 RTP-0160-020	31	14	34	170	141.5
Ø 20 RTP-0201-020	25	10	30	150	125
Ø 26 RTP-0263-020	31	13	36	180	150
Ø 30 RTP-0301-020	45	21	48	240	200
Ø 50 RTP-0501-020	60	27	66	330	275
Ø 50 RTP-0502-022	50	22	56	280	233
Ø 50 RTP-0502-062	44.5	17.5	54	270	225
Ø 50 RTP-0502-082	42.5	17	51	255	212.5

*speed values for a distance between RWM and transponder set to S0 and a 32 bits Read or Write operation

$$v_{Rmax} = \begin{cases} \frac{D_0}{T_R} = \frac{2\cdot(S_{max} - S_0)}{T_0 + N\cdot T_{R0}} & \text{ob / si / if } S_0 > 0 \\ \frac{D_C}{T_R} = \frac{2\cdot S_{max}\cdot\sqrt{1 - 2\cdot S_0/S_{max}}}{T_0 + N\cdot T_{R0}} & \text{ob / si / if } S_0 \le 0 \end{cases}$$



$$v_{Wmax} = \begin{cases} \frac{D_0}{T_W} = \frac{2\cdot(S_{max} - S_0)}{T_0 + N\cdot T_{W0}} & \text{ob / si / if } S_0 > 0 \\ \frac{D_C}{T_w} = \frac{2\cdot S_{max}\cdot\sqrt{1 - 2\cdot S_0/S_{max}}}{T_0 + N\cdot T_{W0}} & \text{ob / si / if } S_0 \le 0 \end{cases}$$

AVAILABLE TYPES

Part number	Part reference	Ø	Mounting	Connection / Cable length
720 100 107	RLS-1301-220-120	M30	Non-embeddable	USB A male / 2 m

DISCLAIMERS

FCC information

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

IC information

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d`Industrie Canada applicables aux appareils radio exempts de licence. L`exploitation est autorisée aux deux conditions suivantes :

(1) L`appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l`appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d`en compromettre le fonctionnement.

Contrinex information

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