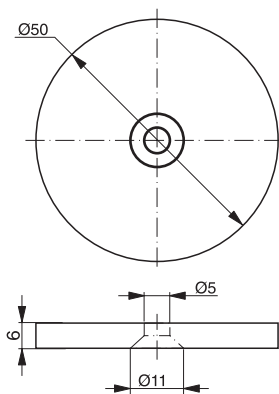
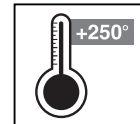


HOUSING	MEMORY SIZE	MOUNTING	<ul style="list-style-type: none"> <li>✓ Ultra high temperature HF transponder</li> <li>✓ Housing with hole for fixing screw</li> </ul>	<ul style="list-style-type: none"> <li>✓ Insensitive to dirt</li> <li>✓ User memory</li> <li>✓ Silicone free solution</li> <li>✓ EEPROM technology</li> </ul>
Ø50 mm	256 Bytes	<b>Non-embeddable</b>		



### GENERAL DATA

Type of integrated circuit	NXP ICODE SLI-S
Carrier frequency	13.56 MHz
Compatible standard	ISO 15693
Maximum transmission speed	53 kbit/s if fast custom commands is used, 26.5 kbit/s otherwise
Memory type	EEPROM
Memory size	256 Bytes
Read-write distance max.	50 mm with RLS-1303-020 & 10mm spacer

### MEMORY INFORMATION

Organization	64 blocks x 4 Bytes
User memory (R/W)	40 blocks, 160 Bytes
Configuration memory	24 blocks, 96 Bytes
Unique identifier	8 Bytes
Data retention period (< 55 °C)	> 10 years
Number of "write" cycles	10 <sup>5</sup>
Number of "read" cycles	unlimited

### MECHANICAL DATA

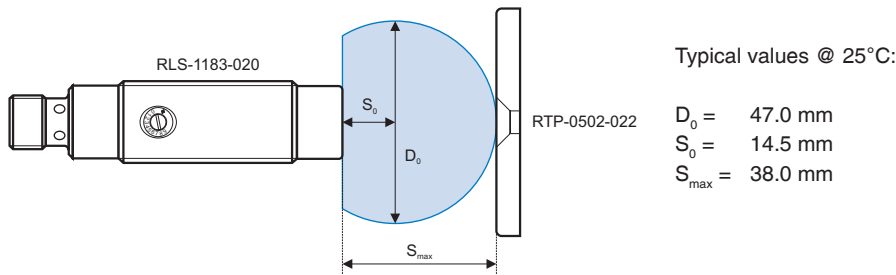
Protection degree	IP68 & IP69K
Ambient temperature range TA*	-25...+150 °C
Storage temperature range TS**	-40...+250 °C
Thermal cycling reliability @ 250 °C	1000 cycles / 1000 hours
Housing material	LCP (Liquid Crystal Polymer)
Weight	16.9 g
Tightening torque	max. 1 Nm

\* Read/write operations possible

\*\* Data retention and mechanical stability limit

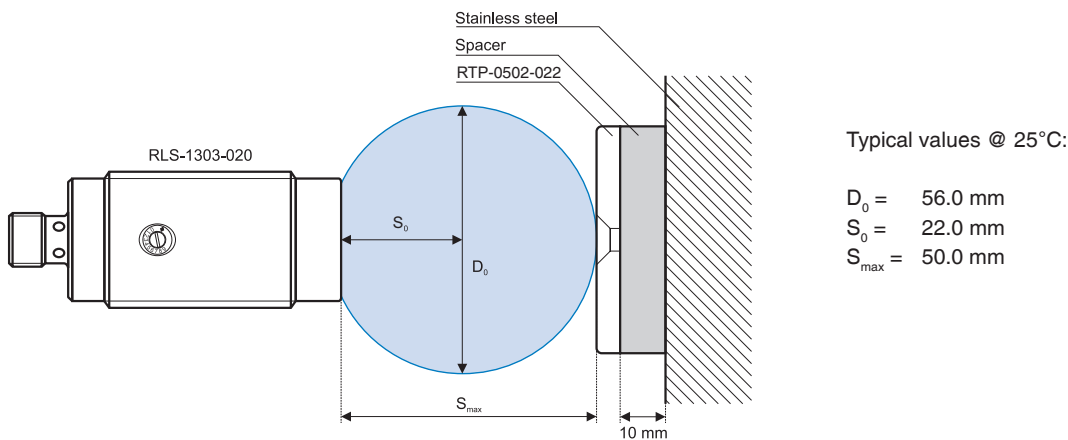
## OPERATING ZONE

The operating area is highly dependent on the environment.



## ENLARGEMENT OF THE OPERATING AREA

The operating area is highly dependent on the environment.



## MEMORY OF TRANSPONDERS

The EEPROM has a memory capacity of 2048 bits and is divided in two areas. One user area of 40 blocks and one system area of 24 blocks, that means a total of 64 blocks of 4 bytes each. The block is the smallest unit used to read and write the EEPROM memory.

EEPROM memory configuration

Area	Page No.	Block No.	Details	Read Access	Write Access
User memory (160 bytes)	00 <sub>h</sub> to 09 <sub>h</sub>	00 <sub>h</sub> to 27 <sub>h</sub>	User memory	✓	✓
System memory (96 bytes)	F0 <sub>h</sub> to FE <sub>h</sub>	E8 <sub>h</sub> to FE <sub>h</sub>	UID (64 bits), EPC Data, Access Control Info. Passwords AFI, DSFID, EAS Block security status	Inv. Cmd Get System Info Cmd EAS Cmd Get Multiple Block Security Status Cmd	Write AFI Cmd Write DSFID Cmd Write EAS Cmd Lock Block Cmd Lock DSFID Cmd Lock AFI Cmd (OTP)

**User memory** Direct read access to blocks of this memory is always possible. Direct write access to blocks of this memory is possible depending on the value of its corresponding block security status bit.

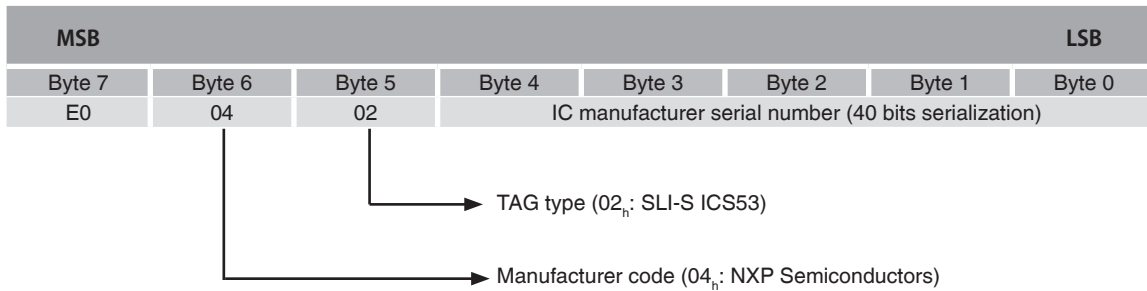
**System memory** Direct read or write access to blocks of this memory area is not possible

Structure of a single user memory block



## UNIQUE IDENTIFICATION NUMBER (UID)

The 64-bits unique identification number (UID) is programmed during the production process according to ISO/IEC 15693-3 and cannot be changed afterwards. The type of TAG and manufacturer code are part of the UID: bytes 5 and 6 respectively.



## SPECIAL FEATURES

Name	Description
EAS*	Electronic Article Surveillance
AFI	Application Family Identifier
DSFID	Data Storage Format Identifier
EPC*	Electronic Product Code
Destroy SLI-S	The datas of the transponder are completely destroyed if the B9 command is preceded by the destroy password. The transponder will not answer any commands any more
Privacy Mode	In private mode, the transponder does not answer any more except to the command Get Random Number and Set Password

\* features not available with Contrinex RWMs (RLS-1xxx-xxx)

## SECURITY AND PROTECTIONS

Description
Unique identifier (UID) for each transponder
Lock mechanism for each user memory block (read and / or write protection)
Lock mechanism for DSFID, AFI and EAS*
Password (32-bits) protected memory management for Read access
Password (32-bits) protected memory management for Write access
Password (32-bits) protected transponder Destroy command
Password (32-bits) protected Privacy Mode
Password (32-bits) protected EAS functionality*
Initial state of the passwords 00000000 <sub>h</sub>

\* features not available with Contrinex RWMs (RLS-1xxx-x2x)

## LIST OF COMMANDS

	Command Name	Command Code	Description	RLS-1xxx-	
				x20	320
<b>Mandatory</b> ISO 15693	Inventory	01 <sub>h</sub>	Execute the anti-collision sequence and return UID	✓	✓
	Stay Quiet	02 <sub>h</sub>	Enter the Quiet state	✓	✗
<b>Optional</b> ISO 15693	Read Single Block	20 <sub>h</sub>	Read the requested 1 block data in the user/system memory	✓	✓
	Write Single Block	21 <sub>h</sub>	Write the requested 1 block data in the user memory	✓	✓
	Lock Block	22 <sub>h</sub>	Lock permanently the requested 1 block in the user memory	✓	✗
	Select	25 <sub>h</sub>	Enter the Select state	✓	✗
	Reset to ready	26 <sub>h</sub>	Enter the Ready state	✓	✗
	Write AFI	27 <sub>h</sub>	Write AFI (Application Family Identifier) value into EEPROM	✓	✗
	Lock AFI	28 <sub>h</sub>	Lock permanently AFI value	✓	✗
	Write DSFID	29 <sub>h</sub>	Write DSFID (Data Storage Format Identifier) value into EEPROM	✓	✗
	Lock DSFID	2A <sub>h</sub>	Lock permanently DSFID value	✓	✗
	Get System Information	2B <sub>h</sub>	Read the system information value (UID, DSFID, AFI, number of bytes per block, etc)	✓	✗
<b>Custom</b> ISO 15693	Set EAS	A2 <sub>h</sub>	Set EAS bit to "1"	✗	✗
	Reset EAS	A3 <sub>h</sub>	Set EAS bit to "0"	✗	✗
	Lock EAS	A4 <sub>h</sub>	Lock permanently the EAS bit to its current value	✗	✗
	EAS Alarm	A5 <sub>h</sub>	When EAS bit is "1", reply 13 bytes of data (Flags, EAS, IC Mfg. code, UID and CRC16)	✗	✗
	Password Protect EAS	A6 <sub>h</sub>	EAS Password has to be transmitted before with a Set Password command	✗	✗
	Write EAS ID	A7 <sub>h</sub>	Write a new EAS identifier	✗	✗
	Read EPC	A8 <sub>h</sub>	Read the EPC data stored into the system memory	✗	✗
	Inventory Page Read	B0 <sub>h</sub>	Execute the anti-collision sequence and return the requested n page data in the user memory	✗	✗
	Fast Inventory Page Read	B1 <sub>h</sub>	Fast response Inventory Page Read command	✗	✗
	Get Random Number	B2 <sub>h</sub>	Get a random number calculated in the transponder	✓	✗
	Set Password	B3 <sub>h</sub>	Get access to the different protected functionalities in function of the password identifier used	✓	✗
	Write Password	B4 <sub>h</sub>	Write a new password into the transponder system memory in function of the password identifier used	✓	✗
	Lock Password	B5 <sub>h</sub>	Lock permanently one password in function of the password identifier used	✓	✗
	Protect Page	B6 <sub>h</sub>	Set the read and write access condition pagewise	✓	✗
	Lock Page Protection	B7 <sub>h</sub>	Lock permanently the read and write access condition pagewise	✓	✗
	Get Multiple Block Protection Status	B8 <sub>h</sub>	Read the block security status stored of the requested n blocks	✓	✗
	Destroy SLI-S	B9 <sub>h</sub>	Destroy permanently the transponder ISO15693 air interface	✓	✗
	Enable Privacy	BA <sub>h</sub>	Enable the SLI-S privacy mode	✗	✗
	64 Bit Password Protection	BB <sub>h</sub>	If 64-Bit Password Protection is enabled both read + write passwords are required to access read and write protected blocks (pages)	✓	✗
	<b>Custom</b> ISO EPC HF*	Begin Round	30 <sub>h</sub>	Execute the anti-collision sequence and return EPC	✗
Write Block		01 <sub>h</sub>	Write new EPC data into the transponder memory	✗	✗
Destroy		02 <sub>h</sub>	Destroy permanently the transponder EPC HF air interface	✗	✗

\*refer to "13.56MHz ISM Band Class 1 Radio Frequency (RF) Identification Tag Interface Specification" for more details

## AVAILABLE TYPES

Part number	Part reference	Ø	Mounting
720-000-200	RTP-0502-022	50 mm	Non-embeddable