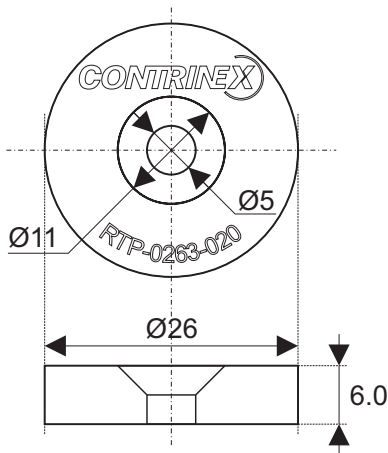
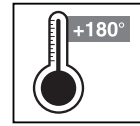


HOUSING	MEMORY SIZE	MOUNTING	✓ Very high temperature HF transponder	✓ Insensitive to dirt
Ø26 mm	256 Bytes	Embeddable	✓ Housing with hole for fixing screw	✓ User memory ✓ OTP protection blocks ✓ EEPROM technology



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.	31 mm with RLS-1303-020

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 ⁵
Number of "read" cycles	unlimited

MECHANICAL DATA

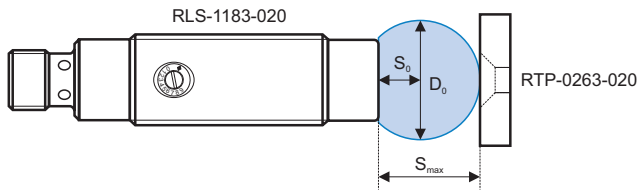
Protection degree	IP68 & IP69K
Ambient temperature range TA*	-25...+180 °C
Storage temperature range TS**	-40...+180 °C
Thermal cycling reliability @ 180 °C	1000 cycles / 1000 hours
Housing material	PPS (Polyphenylene Sulfide)
Weight	3.3 g
Tightening torque	max. 1 Nm

* Read/write operations possible

** Data retention and mechanical stability limit

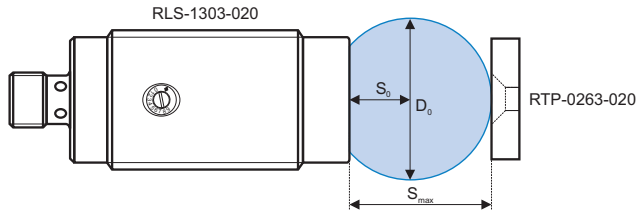
OPERATING ZONE

The operating area is highly dependent on the environment.



Typical values @ 25°C:

$$\begin{aligned} D_0 &= 23.6 \text{ mm} \\ S_0 &= 8.3 \text{ mm} \\ S_{max} &= 21.0 \text{ mm} \end{aligned}$$

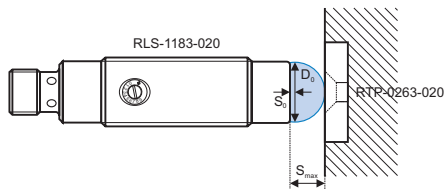


Typical values @ 25°C:

$$\begin{aligned} D_0 &= 34.8 \text{ mm} \\ S_0 &= 13.2 \text{ mm} \\ S_{max} &= 30.6 \text{ mm} \end{aligned}$$

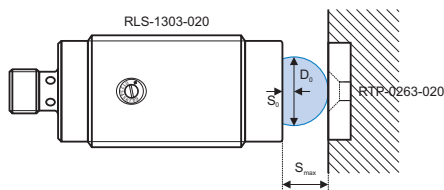
THE OPERATING AREA WHEN EMBEDDED IN METAL

The operating area is highly dependent on the environment.



Typical values @ 25°C:

$$\begin{aligned} D_0 &= 14.0 \text{ mm} \\ S_0 &= 1.3 \text{ mm} \\ S_{max} &= 8.3 \text{ mm} \end{aligned}$$



Typical values @ 25°C:

$$\begin{aligned} D_0 &= 20.3 \text{ mm} \\ S_0 &= 3.7 \text{ mm} \\ S_{max} &= 13.8 \text{ mm} \end{aligned}$$

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 _h to 09 _h	00 _h to 27 _h	User memory	✓	✓
System memory (96 bytes)	F0 _h to FE _h	E8 _h to FE _h	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.

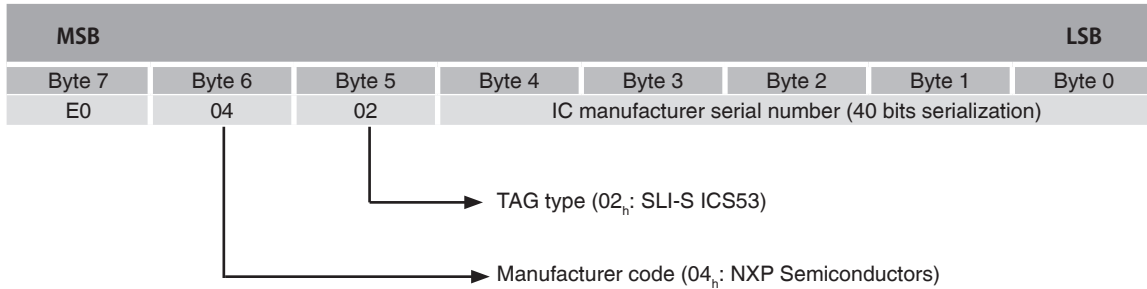
System memory Direct read or write access to blocks of this memory area is not possible

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 _h

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

LIST OF COMMANDS

	Command Name	Command Code	Description	RLS-1xxx-	
				x20	320
Mandatory ISO 15693	Inventory	01 _h	Execute the anti-collision sequence and return UID	✓	✓
	Stay Quiet	02 _h	Enter the Quiet state	✓	✗
Optional ISO 15693	Read Single Block	20 _h	Read the requested 1 block data in the user/system memory	✓	✓
	Write Single Block	21 _h	Write the requested 1 block data in the user memory	✓	✓
	Lock Block	22 _h	Lock permanently the requested 1 block in the user memory	✓	✗
	Select	25 _h	Enter the Select state	✓	✗
	Reset to ready	26 _h	Enter the Ready state	✓	✗
	Write AFI	27 _h	Write AFI (Application Family Identifier) value into EEPROM	✓	✗
	Lock AFI	28 _h	Lock permanently AFI value	✓	✗
	Write DSFID	29 _h	Write DSFID (Data Storage Format Identifier) value into EEPROM	✓	✗
	Lock DSFID	2A _h	Lock permanently DSFID value	✓	✗
	Get System Information	2B _h	Read the system information value (UID, DSFID, AFI, number of bytes per block, etc)	✓	✗
Custom ISO 15693	Set EAS	A2 _h	Set EAS bit to "1"	✗	✗
	Reset EAS	A3 _h	Set EAS bit to "0"	✗	✗
	Lock EAS	A4 _h	Lock permanently the EAS bit to its current value	✗	✗
	EAS Alarm	A5 _h	When EAS bit is "1", reply 13 bytes of data (Flags, EAS, IC Mfg. code, UID and CRC16)	✗	✗
	Password Protect EAS	A6 _h	EAS Password has to be transmitted before with a Set Password command	✗	✗
	Write EAS ID	A7 _h	Write a new EAS identifier	✗	✗
	Read EPC	A8 _h	Read the EPC data stored into the system memory	✗	✗
	Inventory Page Read	B0 _h	Execute the anti-collision sequence and return the requested n page data in the user memory	✗	✗
	Fast Inventory Page Read	B1 _h	Fast response Inventory Page Read command	✗	✗
	Get Random Number	B2 _h	Get a random number calculated in the transponder	✓	✗
	Set Password	B3 _h	Get access to the different protected functionalities in function of the password identifier used	✓	✗
	Write Password	B4 _h	Write a new password into the transponder system memory in function of the password identifier used	✓	✗
	Lock Password	B5 _h	Lock permanently one password in function of the password identifier used	✓	✗
	Protect Page	B6 _h	Set the read and write access condition pagewise	✓	✗
	Lock Page Protection	B7 _h	Lock permanently the read and write access condition pagewise	✓	✗
	Get Multiple Block Protection Status	B8 _h	Read the block security status stored of the requested n blocks	✓	✗
	Destroy SLI-S	B9 _h	Destroy permanently the transponder ISO15693 air interface	✓	✗
	Enable Privacy	BA _h	Enable the SLI-S privacy mode	✗	✗
	64 Bit Password Protection	BB _h	If 64-Bit Password Protection is enabled both read + write passwords are required to access read and write protected blocks (pages)	✓	✗
	Custom ISO EPC HF*	Begin Round	30 _h	Execute the anti-collision sequence and return EPC	✗
Write Block		01 _h	Write new EPC data into the transponder memory	✗	✗
Destroy		02 _h	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
720-000-137	RTP-0263-020	26 mm	Embeddable