

[ONLINE HELP](#)

RFH620
Radio Frequency Interrogator
(13.56 MHz)



Software/tool	Function	Version
Device description RFH620	Device-specific software module for SOPAS-ET configuration software	V 1.0
SOPAS-ET	Configuration software	V 2.20

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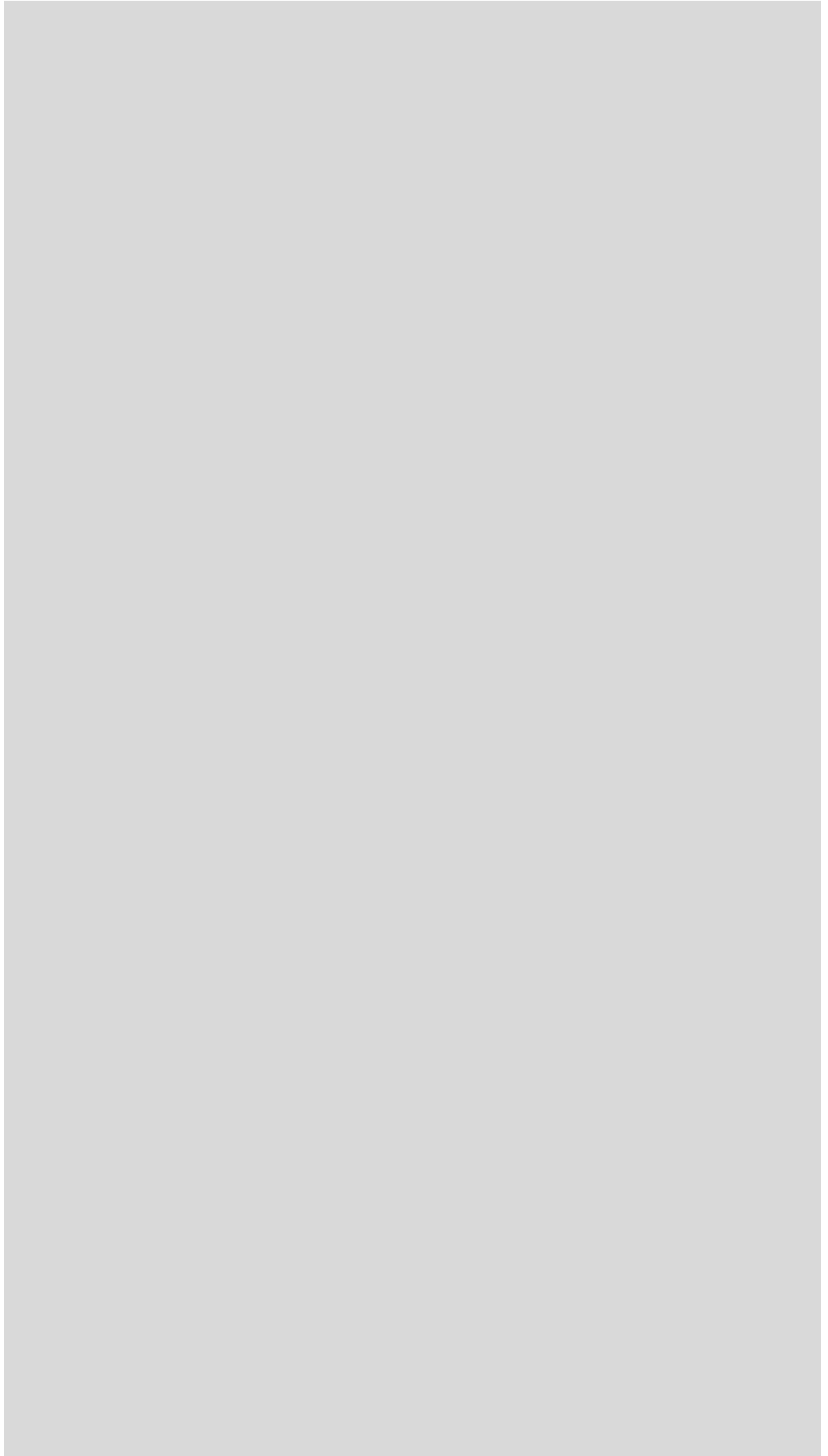
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1 Notes on this document

- Purpose** This document guides the technical personnel in configuring the interrogator of series RFH620 using the SOPAS-ET software.
- The document contains information regarding all parameters necessary for the operation of the interrogator.
- Target group** The target group of this document is qualified personnel like, e.g., technicians or engineers for commissioning and configuring an interrogator of series RFH620.
- Depth of information** This document contains all information for the configuration of RFH620 on site.
- The **factory default setting** (basic configuration) of the interrogator is prepared for use as a **stand-alone device**.
- Information on mounting, installation, maintenance and troubleshooting is given in the interrogator's operating instructions (document no. 8013105).
- Important** Further information about the design of the interrogator as well as the RFID technology is available at SICK AG, Auto Ident division.
- On the Internet at **www.sick.com**.
- Important** For default values as well as minimum and maximum values, see PARAMETER INFO of SOPAS-ET interface (context menu of the parameter).
- Used symbols** To gain easier access, some information in this documentation is emphasised as follows:
- Reference* Italic script denotes a reference to further information.
- Important** This important note informs you about specific features.
- Recommendation** A recommendation helps you to carry out tasks correctly.
- TIP** A tip explains setting options in the SOPAS-ET configuration software.
- PROJECT** This type of script denotes a term in the user interface of the SOPAS-ET configuration software.
-  A symbol indicates a button in the user interface of the SOPAS-ET configuration software.
-  There is a procedure which needs to be carried out. This symbol indicates operational instructions which only contain one operational step or operational steps in warning notices which do not have to be followed in any particular order. Operational instructions comprising several steps are denoted using consecutive numbers.
-  This symbol indicates supplementary settings in the SOPAS-ET configuration software.
-  This symbol indicates supplementary technical documentation.

2 RFH620

2.1 Quickstart

Quickstart With the group [Quickstart](#), all compatible transponders in the transmission range of the interrogator are listed. The properties of detected transponders are displayed. The search process can be manually started or stopped.

Parameter	Function
Device type	The interrogator type is displayed.
Device ID	Enter the device ID of the interrogator in the CAN network.
No.	The detected transponders are consecutively numbered.
UID	The unique ID of every detected transponder is displayed.
Manufacturer	The manufacturer identification code of the transponder is displayed.
IC	The transponder type (integrated circuit) is displayed.
RSSI	The current RSSI value (Received Signal Strength Indication), with which the transponder can be read, is displayed.
Access	The page Tag access is called up in order to read and write the user data of a selected transponder respectively. Important When accessing, the transponder must be located in the transmission range of the interrogator. In order to have access to a transponder, this must be selected on the list. In addition, the continuous search process must be stopped by clicking STOP.
Clear list	Delete list of detected transponders.
Start	Start search process. All detected transponders are listed. The search process is continuously repeated depending on the trigger configuration (see chapter 2.3.2 Object trigger control, page 12).
Stop	Stop search process.
Don't show this dialog on adding device	The group Quickstart automatically appears as start dialog. This function can be switched on/off here.

2.2 Tag access

Tag access The user data of a transponder can be read and displayed using parameters of group [Tag access](#). The displayed user data can be changed and written back to the transponder.

Important When accessing, the transponder must be located in the transmission range of the interrogator.

Parameter	Function
UID	The unique ID of the transponder is displayed.
Manufacturer	The manufacturer identification code of the transponder is displayed.
Block count	The number of available blocks of the transponder is displayed.
Block size	The maximum number of characters (byte) per block is displayed.
Scan	The transponder in the transmission range of the interrogators is detected. The user data are read and displayed. If several transponders are detected in the transmission range of the interrogator, a list is displayed for the desired transponder to be selected.
Read blocks	All user data of the transponder are read and displayed (again).
Write blocks	The displayed data are written on the transponder.
AFI	Enter and change the values for AFI (Application Family Identifier) respectively.
DSFID	Enter and change the values for DSFI (Data Storage Format Identifier) respectively.
Hex	Enter and change the value of available blocks in a hexadecimal format respectively. The values are also automatically displayed in ASCII format. Important Changed values are transferred to the transponder by clicking BLOCK WRITING.
ASCII	Enter and change the value of available blocks in ASCII format respectively. The values are also automatically displayed in Hexadecimal format. Important Changed values are transferred to the transponder by clicking BLOCK WRITING.

Important In entering the user data, pay attention to the maximum number of characters per block. Data entered wrongly are not accepted.

2.3 Parameter

General The password-protection is switched on/off using parameters of group *General*.

Parameter	Function
Parameterization is guarded by password	Switching on/off password-protection. If password-protection is switched on, the password must be entered when logging on to the device (password: "client"). This password cannot be changed.

2.3.1 Tag processing

Tag processing The type of access to the transponder user data is selected using parameters of group *Tag processing*.

Parameter	Function
Addressed mode	Activate access to the user data in consideration of the unique ID of the transponder.
Active tag processing	Activate reading as well as reading and writing function.

Tag processing "read" Access when reading the transponder user data is set using parameters of group *Tag processing "read"*.

Parameter	Function
Select blocks to read	Select blocks that should be read. Tip In order to read more blocks, the function <i>Tag processing "read + write"</i> must be selected.
Activate "stay quiet"	After the first processing by the interrogator the transponders are set idle. When the transponders are in the reading area, they are not processed by the interrogator.
Read transponder information	In addition to the user data, the properties of the transponder (e.g the unique ID, manufacturer, IC) are also read out.

Tag processing "read + write" Access when reading and writing the transponder user data is set using parameters of group *Tag processing "read + write"*.

Parameter	Function
+	Adding operation.
×	Deleting operation.
Action	Select reading or writing access.
Block	Enter the block number, which should be read and, on which should be written respectively.
Content	Enter the value, which should be written on the specified block, in hexadecimal format.
Start block	Enter the number of the first block to be read.
Number of blocks	Enter the number of blocks to be read.
Activate "stay quiet"	???
Read transponder information	In addition to the user data, the properties of the transponder (e.g the unique ID, manufacturer, IC) are also read out.

Air interface The communication between the interrogator and the transponders is set using parameters of group *Air interface*.

Parameter	Function
Transmit power	Select complete and incomplete transmitter power respectively.
Retry	Enter the maximum number of attempts when accessing a transponder.
AFI filter	Switch on/off AFI filter (Application Family Identifier).
AFI value	Enter the value for the AFI filter. Only transponders with the specified AFI (Application Family Identifier) are evaluated.
Advanced...	Activate other settings.

Advanced settings Special transmit and receive functions for the air interface are set using parameters of group [Advanced settings](#).

Parameter	Function
Transponder IC	Select transponder type.
Anticollision	Select the type of anticollision. With the anticollision switched on, the user data of all transponders in the footprint of the antenna together with the corresponding transponder ID are detected. This way, it is guaranteed that the user data can be assigned to corresponding transponder. When the anticollision is switched off, it must be ensured that only one transponder is always in the footprint of the antenna. The function is also activated automatically as soon as there are many transponders in the footprint.
Transmit modulation	Select the modulation grade for the amplitude modulation ASK (Amplitude Shift Keying) for transfer to the transponder.
Transmit coding	Select the data rate for transfer to the transponder.
Receive modulation	Select the amplitude modulation ASK or frequency modulation FSK (Frequency Shift Keying) for transfer of transponder. Recommendation <ul style="list-style-type: none"> • Select amplitude modulation (ASK) for Fujitsu transponder. • Select frequency modulation (FSK) for NXP transponder.
Receive datarate	Select the data rate for transfer of transponder.
HF-field	Select if the HF-field should be switched on via a trigger signal or be switched on permanently.
Verify block writing	Switch on/off check after writing user data.
Retry On/Off	When the check box is selected, access to the transponder is repeated in case of a failure.

2.3.2 Object trigger control

Settings The trigger freewheel is set using parameters of group [Settings](#).

Parameter	Function
Enable freewheel	Switching on/off of continuous operation. In activated enable freewheel, the interrogator continuously sends inventory commands with set delay. The commands are repeated until a transponder is detected in the transmission range of the interrogator. As a result a reading gate is opened and the transponder processing starts. The reading gate is closed after one-time transponder processing and the data are displayed. When the data are displayed, the inventory commands are sent continuously again and the procedure restarts.
Freewheel delay	Set the delay of the inventory commands in milliseconds.
Freewheel RSSI threshold	Enter the minimum RSSI value. Access to a transponder in a minimum RSSI value is not evaluated.

Start/Stop of object trigger The trigger source is configured using parameters of group [Start/Stop of object trigger](#).

Parameter	Function
Control	Select the type of control (time-based or stroke-based via incremental encoder chapter 2.3.3 Increment configuration, page 13).
Start delay	Enter the delay between the start trigger and the opening of the reading gate in milliseconds. Select the source of the start trigger.
from	Enter the CAN address of the device, where the start trigger comes from. In this device, "CAN" must be set in TRIGGER DISTRIBUTION.
Stop delay	Enter the delay between the stop trigger and the closing of the reading gate in milliseconds. Select the source/condition of the stop trigger.
or	Possibly, select other source/condition of the stop trigger. This is linked with the first source via a logical OR.
or	Possibly, select other source/condition of the stop trigger. This is linked with the first two sources via a logical OR.
Trigger echo on	Switching on/off trigger echo.
Start command	Enter the user-defined start command.
Stop command	Enter the user-defined stop command.
Pulse	Enter the length of the pulse for the automatic cycle. Possibly, select the unit.
Pause	Enter the length of pause between two pulses of the automatic cycle. Possibly, select the unit.
Duration	Enter the time/stroke, after which the stop trigger should be triggered. Possibly, select the unit.

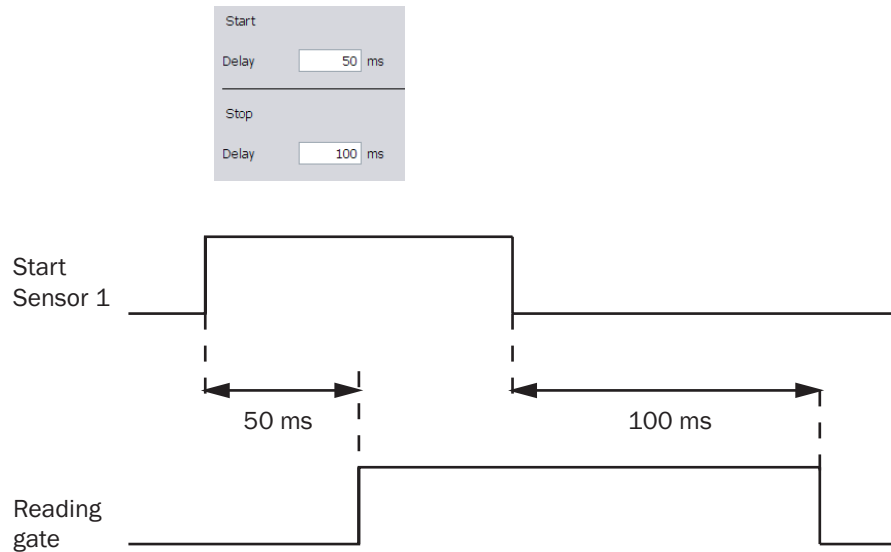


Fig. 2-1: The influence of parameters start delay and stop delay on the reading gate.

Trigger distribution The person to receive the trigger is set using parameters of group [Trigger distribution](#).

Parameter	Function
Distribute on	Switch on/off trigger distribution via CAN.

2.3.3 Increment configuration

An external **incremental encoder** can be connected in order to determine the actual conveyor speed. The number of pulses multiplied with the resolution of the external incremental encoder per time adds up to the conveyor speed.

Alternatively, a constant speed can be selected.

Increment The increment source and the resolution/speed is configured using parameters of group [Increment](#).

Parameter	Function
Increment source	Select the source of the increment.
Fixed speed	Enter the speed of the conveyor system. Possibly, select the unit.
System increment resolution	Enter the resolution of the external incremental encoder. Possibly, select the unit.

2.3.4 Data processing

Collection of data The time delay for transferring the reading data is configured using parameters of group [Collection of data](#).

This can be effective if a transponder is analysed shortly before the reading gate stops.

Parameter	Function
Timeout	Enter the maximum time, after which a read transponder is still displayed after the reading gate stops.

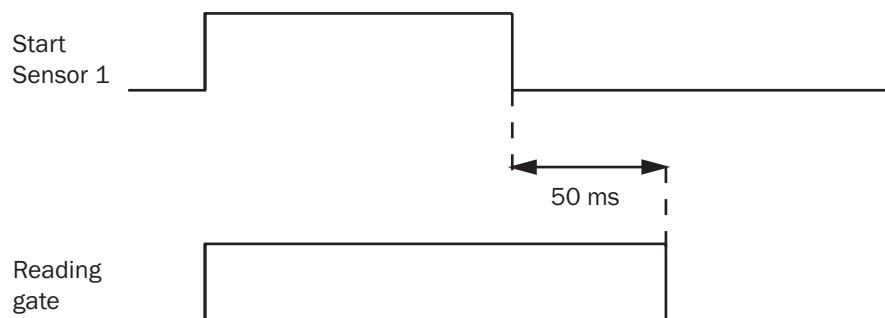
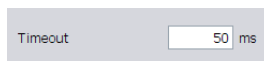


Fig. 2-2: The influence of the parameter timeout on the reading gate

2.3.4.1 Output control

Output control The output of read transponder data is configured using parameters of group [Output control](#).

Parameter	Function
Control	Select the type of control.
Data transmission point	Select when the read transponder data should be displayed.
Delay	Enter the delay time between the reading gate stop and the transponder data output . Possibly, select the unit.
Output condition	Select the condition that must be fulfilled in order that transponder data are displayed. This condition can be configured (see chapter 2.3.4.2 Evaluation conditions, page 16).
Timeout	Enter the delay for transferring the reading data. Possibly, select the unit.

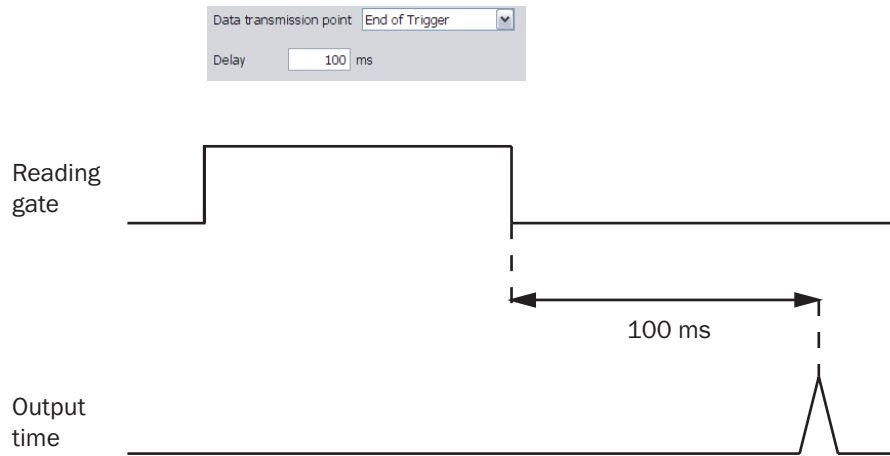


Fig. 2-3: The influence of the parameter value end of the reading pulse (output time) on the output time of the transponder data.

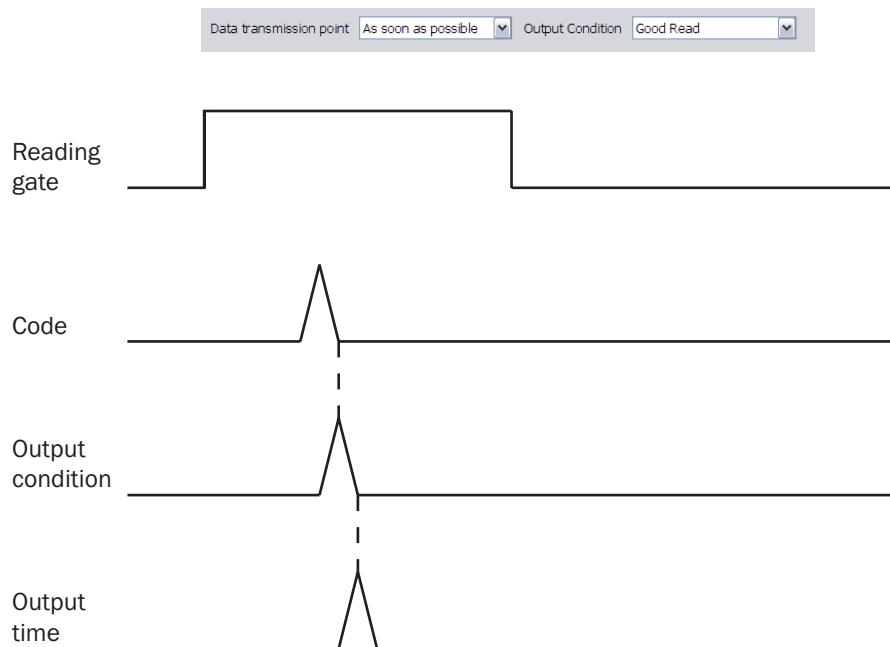


Fig. 2-4: The influence of the parameter value as soon as possible (output time) on the output time of the transponder data.

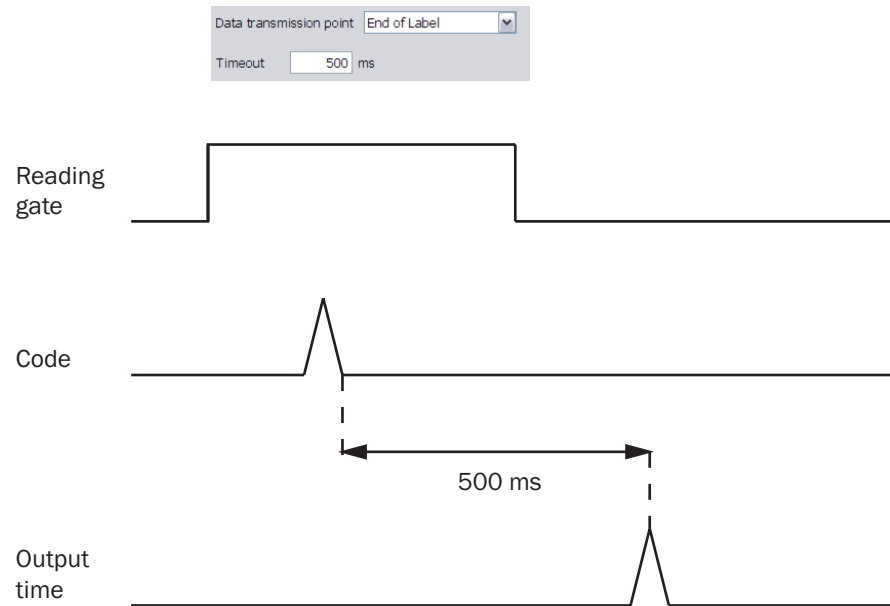


Fig. 2-5: The influence of the parameter value end of the label (output time) on the output time of the transponder data.

2.3.4.2 Evaluation conditions





Condition for Good Read Using parameters of group *Condition for Good Read*, the nature of the condition GOOD READ is defined.

Parameter	Function
Criteria for Good Read	Select condition for Good Read. <ul style="list-style-type: none"> "TransponderDone": Verification of completeness of successfully processed actions in transponder processing "read" respectively transponder processing "read + write" "TransponderFailed": Verification of incompleteness of successfully processed actions in transponder processing "read" respectively transponder processing "read + write"
Check min. number of valid codes	Switch on/off checking minimum number of valid UIDs per reading gate.
Minimum	Enter the minimum number of valid UIDs that must be detected in order to be displayed.
Check max. number of valid codes	Switch on/off checking maximum number of valid UIDs per reading gate.
Maximum	Enter the maximum number of valid UIDs that must be detected in order to be displayed.

2.3.4.3 Output format

Output format #1 The reading results are displayed via definable data interfaces. For this purpose, two different output formats (telegrams) can be defined. The format can also be dependent on the conditions.





The first format of reading results is defined using parameters of group [Output format #1](#).

Parameter	Function
Output format #1	Enter the output format of the reading results.  Open the condition block.  Close the condition block.  Select condition or properties.  or right mouse button: Add the new condition, data field or special character. Double click on the lower line of a data field: Select the attribute properties.

Important The generated output format can be selected, copied and stored in a text editor. In order to reload, press the right mouse button in window [Output format #1](#) and select the command "INSERT FROM EXTERNAL...".

Output format #2 The reading results are displayed via definable data interfaces. For this purpose, two different output formats (telegrams) can be defined. The format can also be dependent on the conditions.

The second format of the reading results is defined using parameters of group [Output format #2](#).

Parameter	Function
Output format #2	Enter the output format of the reading results.  Open the condition block.  Close the condition block.  Select condition or properties.  or right mouse button: Add the new condition, data field or special character. Double click on the lower line of a data field: Select the attribute properties.

Important The generated output format can be selected, copied and stored in a text editor. In order to reload, press the right mouse button in window [Output format #2](#) and select the command "INSERT FROM EXTERNAL...".

Heartbeat format As long as no reading results are displayed, an interrogator's vital sign, a so-called Heartbeat, can be displayed at regular intervals.

The format of the Heartbeat is defined using parameters of group [Heartbeat format](#).

Parameter	Function
Heartbeat format	Enter the output format of the Heartbeat. Right mouse button: Add special character.

Important The generated output format can be selected, copied and stored in a text editor. In order to reload, press the right mouse button in window *Heartbeat format* and select the command "INSERT FROM EXTERNAL...".

2.3.5 Network / interface / IOs

Network options The interrogator is assigned its identification in the network using parameters of group *Network options*.

Parameter	Function
Network assistant	Call up the dialog, where the most important parameters of the following pages are summarised: <ul style="list-style-type: none"> • chapter 2.3.5.3 CAN, page 21 • chapter 2.3.5.2 Ethernet, page 20 • chapter 2.3.2 Object trigger control, page 12
Device ID	Enter the CAN-Bus address of the interrogator.
Device name	Enter the name of the device. This name appears in the project tree on the highest level.

Master / slave Using parameters of group *Master / slave*, it is defined if the interrogator is part of a master/slave connection of SICK CAN-Sensor network.

Master / slave it means that one group of devices read the transponder of the same object. The common reading result is transferred to the host. In comparison with the host, the master-slave group works like an individual interrogator.

Parameter	Function
Function	Select the function of the interrogator in a master/slave connection.
assign to	Select the connection between master and slave.
Output time	Select the output time of reading results.
Slave list	Enter the numbers of devices that should be handled as slave by this interrogator. In slave devices, the function "SLAVE" must be selected.

Monitoring The devices that should be monitored by this interrogator is set using parameters of group *Monitoring*.

Parameter	Function
assign to	Select the connection through which the monitoring should run.
Monitored devices	Enter the numbers of devices that should be monitored by this interrogator.
Max. run-up time of the monitored devices	Enter the time during which failure of a signal is ignored by a monitoring device.

2.3.5.1 Serial

Serial host interface The serial host interface is configured using parameters of group [Serial host interface](#). The serial host interface provides the reading result for further processing via the host computer.

Parameter	Function
Protocol / output format	Select the output format, in which the reading result via the serial host interface should be displayed.
Baudrate	Select the speed of the serial host interface
Stopbits	Select the number of stop bits.
Databits / parity	Select the number of data bits and parity.
Hardware	Select the type of serial host interface
Enable Heartbeat	Switch on the output of a regular vital sign.
Heartbeat interval	Enter the time that should be between two Heartbeats.
Restart interval on sending	Restart the interval after an output of a reading result.

Serial auxiliary interface The AUX interface is configured using parameters of group [Serial auxiliary interface](#).

Parameter	Function
Protocol / output format	Select what should be displayed via the serial auxiliary interface.
RDT ID	Enter the device node ID in the RDT400 network.
Enable Heartbeat	Switch on the output of a regular vital sign.
Heartbeat interval	Enter the time that should be between two Heartbeats.
Restart interval on sending	Restart the interval after an output of a reading result.

2.3.5.2 Ethernet

The Ethernet interface ETHERNET provides the reading result for further processing via the host computer.

General The network settings of the interrogator is set using parameters of group [General](#). These settings must be configured by the administrator of the network.

Important The interrogator must be restarted after changing the parameter in this group.

Parameter	Function
IP address	Enter the IP address of the interrogator.
Subnet mask	Enter the subnet mask of the interrogator.
Default gateway	Enter the standard gateway of the interrogator.
Speed	Select the speed of the network.
MAC address	Enter the MAC address of the interrogator.

Ethernet host port The Ethernet host interface is configured using parameters of group [Ethernet host port](#). The Ethernet host interface provides the reading result for further processing via the host computer in parallel to the serial host interface.

Parameter	Function
Protocol / output format	Select the output format, in which the reading result via the Ethernet host interface should be displayed.
Server / client	Select if the interrogator acts as a server or client.
IP port	Enter the IP port, through which the network data should run.
Server address	Enter the server address which was assigned as client to this interrogator.
Enable Heartbeat	Switch on the output of a regular vital sign.
Heartbeat interval	Enter the time that should be between two Heartbeats.
Restart interval on sending	Switch on restart of the interval after an output of a reading result.

Ethernet Aux port The Ethernet Aux interface is configured using parameters of group [Ethernet Aux port](#). The Ethernet Aux interface provides the function of the serial Aux interface in parallel.

Parameter	Function
Server / client	Select if the interrogator acts as a server or client.
IP port	Enter the IP port, through which the network data should run.

Ethernet RDT400 port The RDT400 interface is configured using parameters of group [Ethernet RDT400 port](#).

Parameter	Function
Server / client	Switch on/off the function of the port. The device always acts as a client in an enabled function.
RDT ID	Enter the device node ID in the RDT400 network.
IP port	Enter the IP port, through which the network data should run.
Server address	Enter the address of the RDT400 server, to which the transponder sends the data.

2.3.5.3 CAN

CAN The CAN data interface is configured using parameters of group [CAN](#).

Parameter	Function
Mode	Select the type of CAN network.
Use device ID as node ID	Switch on/off the use of device ID of the interrogator as the node ID in the CAN network. For allocation of device ID, see chapter 2.1 Quickstart, page 7 .
Device ID	The device ID of the interrogator in the CAN network is displayed.
Baudrate	Select the speed of the network.
Output format	Select the output format, in which the reading result via the CAN network should be displayed.

2.3.5.4 Digital inputs

Sensor 1 The first digital input is configured using parameters of group [Sensor 1](#).

Parameter	Function
Control	Select the type of control.
Sensitivity	Select the sensitivity of the sensor.
Logic	Select the denotation of the connected input 1.
Debouncing	Enter the time in milliseconds that the signal must, at least, be pending in input 1 in order to be detected.

Sensor 2 The second digital input is configured using parameters of group [Sensor 2](#).

Important The connection is only available on the interrogator with a cable and connector (standard version) and for the Ethernet version via the CDB620 connection module in combination with the parameter memory module CMC600.

Parameter	Function
Control	Select the type of control.
Sensitivity	Select the sensitivity of the sensor.
Logic	Select the denotation of the connected input 2.
Debouncing	Enter the time in milliseconds that the signal must, at least, be pending in input 2 in order to be recognised.

External input 1 The first digital external input is configured to connection module CDB620 in connection with parameter memory module CMC600 and to connection module CDF600 respectively, using parameters of group [External input 1](#).

Parameter	Function
Control	Select the type of control.
Sensitivity	Select the sensitivity of the sensor.
Logic	Select the denotation of the connected external input 1.
Debouncing	Enter the time that the signal must, at least, be pending in external input 1 in order to be detected. Possibly, select the unit.

External input 2 The second digital external input is configured to connection module CDB620 in connection with parameter memory module CMC600 and to connection module CDF600 respectively, using parameters of group [External input 2](#).

Parameter	Function
Control	Select the type of control.
Sensitivity	Select the sensitivity of the sensor.
Logic	Select the denotation of the connected external input 2.
Debouncing	Enter the time that the signal must, at least, be pending in external input 2 in order to be detected. Possibly, select the unit.

2.3.5.5 Digital outputs

In specific system status (e.g. in unsuccessful decoding "No Read"), independent switch signals can be displayed on both digital outputs, which can be used to display the system status.

Output 1 Digital output 1 is configured using parameters of group [Output 1](#).

Important The connection is only available on the interrogator with a cable and connector (standard version) and for the Ethernet version via the CDB620 connection module in combination with the parameter memory module CMC600.

Parameter	Function
Output 1	Select the result which should trigger a signal in output 1.
Logic	Select the logic level of the connected output 1.
Control	Select the type of control.
Duration	Enter the duration of the signal. Possibly, select the unit.

Output 2 Digital output 2 is configured using parameters of group [Output 2](#).

Important The connection is only available on the interrogator with a cable and connector (standard version) and for the Ethernet version via the CDB620 connection module in combination with the parameter memory module CMC600.

Parameter	Function
Output 2	Select the result which should trigger a signal in output 2.
Logic	Select the logic level of the connected output 2.
Control	Select the type of control.
Duration	Enter the duration of the signal. Possibly, select the unit.

External output 1 The digital external output 1 is configured to connection module CDB620 in connection with parameter module CMC600 and to connection module CDF600 respectively, using parameters of group [External output 1](#).

Parameter	Function
Output 1	Select the result which should trigger a signal in external output 1.
Logic	Select the logic level of the connected external output 1.
Control	Select the type of control.
Duration	Enter the duration of the signal. Possibly, select the unit.

External output 2 The digital external output 2 is configured to connection module CDB620 in connection with parameter module CMC600 and to connection module CDF600 respectively, using parameters of group [External output 2](#).

Parameter	Function
Output 2	Select the result which should trigger a signal in external output 2.
Logic	Select the logic level of the connected external output 2.
Control	Select the type of control.
Duration	Enter the duration of the signal. Possibly, select the unit.

Beeper The beeper is configured using parameters of group [Beeper](#).

Parameter	Function
Beeper	Select the result which should trigger the beeper.
Volume	Select the sound level of the beeper.

2.3.5.6 Field bus CDF600

CDF600 Profibus The field bus interface is configured using parameters of group [CDF600 Profibus](#).
The field bus interface provides the reading result for further processing.

Parameter	Function
Slave address	The address of the device is displayed.
Communication protocol	Select the operating mode for the field bus interface.
Protocol / output format	Select the output format, in which the reading result via the serial field bus interface should be displayed.
Usage output Bit0	Select the function of output Bits 0.
Usage output Bit1	Select the function of output Bits 1.
Usage input Bit0	Select the function of input Bits 0.
Usage input Bit1	Select the function of input Bits 1.

2.4 Service

2.4.1 Operating data

Device information The parameters of group *Device information* show the identification data of the interrogator. These data are important during service.

Parameter	Function
Manufacturer	The manufacturer of the interrogator is displayed.
Reference number	The reference number of the interrogator is displayed.
Serial number	The serial number of the interrogator is displayed.
Software version	The version of the installed firmware is displayed.
Device type	The device type of the interrogator is displayed.

Operating data The parameters of group *Operating data* show information on previous operation of the interrogator.

Parameter	Function
Start-up counter	Shows how often the interrogator was switched on.
Operating hours	Shows, altogether, how long the interrogator was operated.
Daily operating hours	Shows how long the interrogator was operated since the last time it was switched on.

Service information The parameters of group *Service information* show information on service and maintenance of the interrogator.

Parameter	Function
Last user	The last registered user is displayed.
Last parameterisation	The date of the last parameterisation is displayed.
at	The time of last parameterisation is displayed.
Last maintenance	Enter the date of last maintenance.
Next maintenance	Enter the date of next maintenance.

2.4.2 System status
















System information The parameters of group *System information* show system messages.

Parameter	Function
Type	The type of message is displayed.
The first occurrence	The time of the first occurrence is displayed.
The last occurrence	The time of the last occurrence is displayed.
Description	The text of the message is displayed.
Info	Further information on the message is displayed.
Status	The status of the message is displayed.
Counter	The number of times the message occurred is displayed.
Number	The number of the message is displayed.

2.5 Analysis

2.5.1 Event monitor

Event monitor Signals, inputs and outputs can be monitored using diagrams of group *Event monitor*.

Symbol	Function
	Select the signal which should be monitored.
	Open a monitoring diagram which was recorded earlier.
	Save the current monitoring diagram.
	Measure the distances within the diagram.
	Start monitoring.
	Interrupt monitoring.
	Stop monitoring.
	Record monitoring.
	Enlarge diagram.
	Set the zoom of the diagram at 100 %.
	Decrease diagram.
	Display time axis in the diagram.
	Display increment axis in the diagram.
	Switch on/off raster in the diagram.
	Display values in the diagram.

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