

The background image shows a man in a light blue shirt from the side, looking at a tablet. He is in a factory or industrial setting with various machines and equipment visible in the background. Overlaid on the image are several digital graphics: a '24/7' icon with a circular arrow, a 'NEWS' icon with a person silhouette, a 'Home' icon, and a 'Industry Online Support' text. There are also binary code (0s and 1s) and network-like icons scattered throughout the overlay.

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Sending and Receiving SMS Messages via a SCALANCE M Router

SCALANCE M874/ M876, S7-300/ S7-400/ IM151-8
PN CPU/ STEP 7 V5.6/ V1.0

<https://support.industry.siemens.com/cs/ww/en/view/54361177>

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1 Library Overview

This document describes the "LSmsSR" block library for sending and receiving an SMS message to/ from SIMATIC S7-300/ S7-400 und IM151-8 PN CPUs using the SCALANCE M874/M876 router.

The block library provides you with tested code with clearly defined interfaces. They can be used as a basis for the task you want to implement.

The main focus of this document is to describe

- the use of the SMS blocks and
- the functionality implemented.

Furthermore, this documentation shows possible fields of application and helps you integrate the library into your STEP 7 project using step-by-step instructions

Validity of the library

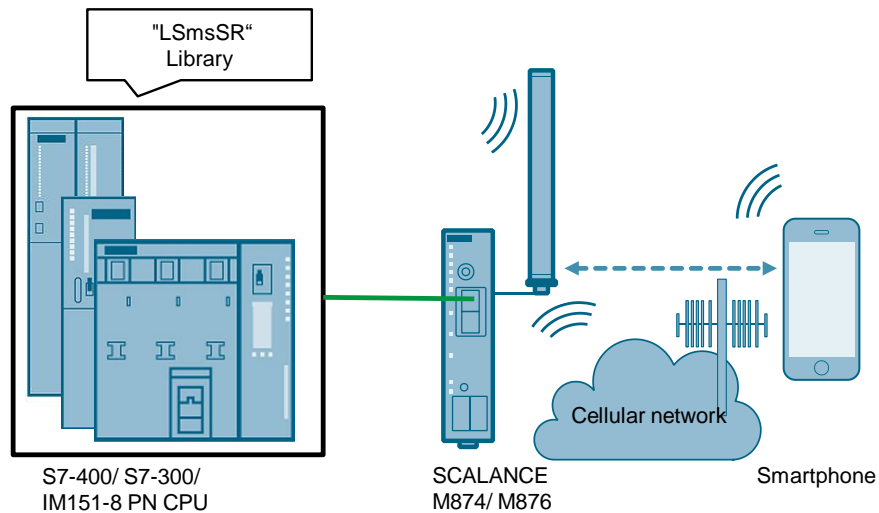
- SIMATIC S7-300 CPUs
 - CPU 31x-2 PN CPUs V3.1 or higher
 - CPU 31x-3 PN CPUs V3.2 or higher
- SIMATIC S7-400 CPUs with integrated Ethernet port on CPU
- IM151-8 PN CPUs V3.2 or higher
- SCALANCE M874/ M876 Firmware V4.1.1 or higher
- SIMATIC STEP 7 V5.6 SP1

1.1 General information

The "LSmsSR" library allows you to execute the following functions:

- send customized messages (e.g., messages regarding your plant status) to a GSM-capable mobile device (SMS Relay Outgoing) via SMS using the SCALANCE M874/M876 router
- receive an SMS message from a GSM-capable mobile device (SMS Relay Incoming) using the SCALANCE M874/M876 router

Figure 1-1



1.2 Functions

Overview

The "LSmsSR_SndSms" and "LSmsSR_RcvSms" function blocks of the "LSmsSR" library are required for data exchange between S7-CPU and the SCALANCE M874/M876 router.

Core functions of the function blocks

- Send SMS message ("LSmsSR_SndSms")
Send SMS message to GSM-capable mobile device via SCALANCE M874/M876.
- Receive SMS message ("LSmsSR_RcvSms")
Receive SMS message from GSM-capable mobile device via SCALANCE M874/M876.

A temporary TCP/IP connection to the partner is established for each function:

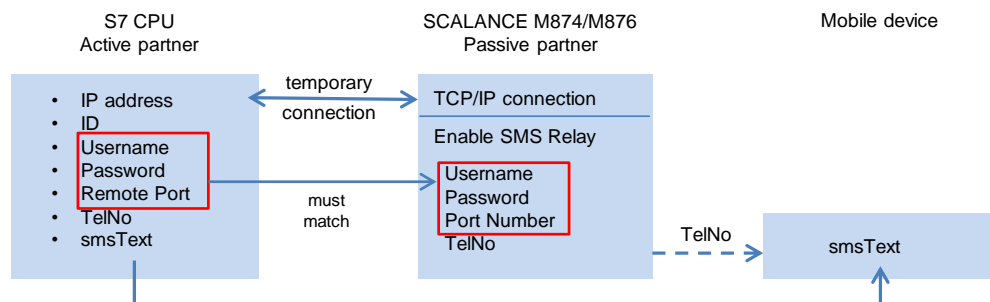
- "Send SMS message": Active connection establishment and termination by S7 CPU
- "Receive SMS message": Active connection establishment and termination by router.

"Send SMS message" sequences

For the "Send SMS message" function, the S7 CPU is the active partner. To send the SMS message, it establishes a connection to the router. The S7 CPU sends the SMS message to the router via this connection.

When the SMS message has been sent, the connection to the router is terminated.

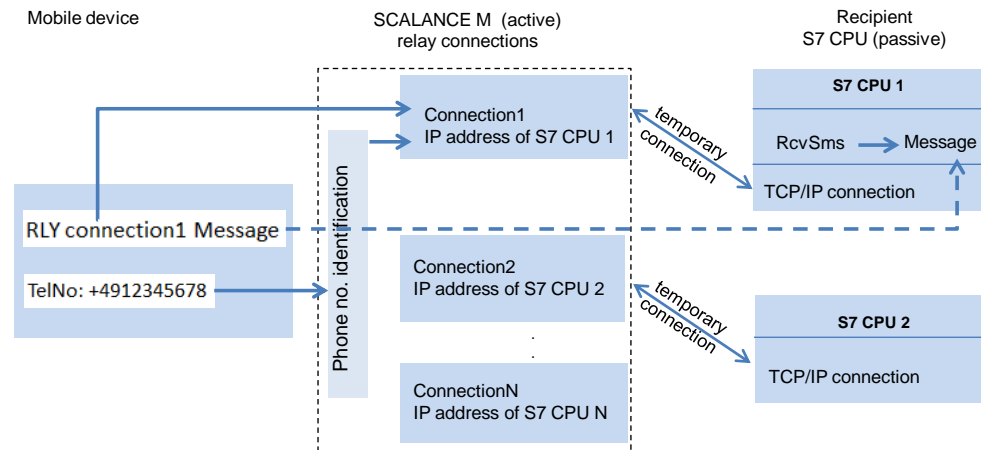
Figure 1-2



"Receive SMS message" sequences

For the "Receive SMS message" function, the S7 CPU is the passive partner. It passively waits for connection establishment by the router. When the router receives a command SMS message, it establishes a connection to the S7 CPU and sends the message to the CPU. When the SMS message has been received, the connection to the S7 CPU is terminated.

Figure 1-3

**NOTE**

If a connection between the SCALANCE M router and the S7-CPU cannot be established, all SMS messages received by the router will be deleted.

1.3 Hardware and software requirements

Requirements for this library

To be able to use the functionality of the library described here, the following hardware and software requirements must be met:

Hardware

Table 1-1

Component	Article number	Number	Note
SCALANCE M874-3	6GK5874-3AA00-2AA2	1	Alternatively, you can use any variants of the SCALANCE M874 and M876 series.
SIMATIC S7-300 CPU 315-2 PN/DP	6ES7315-2EH14-0AB0	1	Any S7-300 PN-CPU can be used.
SIMATIC S7-400 CPU 414-3 PN/DP	6ES7414-3EM06-0AB0		Any S7-400 PN-CPU can be used.
IM151-8 PN/DP CPU	6ES7151-8AB01-0AB0		(see Validity of the library)
ANTENNE ANT794-4MR	6NH9860-1AA00	1	GSM quad-band and UMTS and LTE (Europe)
SIMATIC Micro Memory Card	6ES7953-8LP20-0AA0	1	Memory Card for the S7-300 CPU
SIM card		1	

Software

Component	Article number	Number
STEP 7 Professional V5.6 SP1	1	6ES7810-4CC11-0YA5

2 SCALANCE M874/M876 Configuration

In order for the router to send/receive SMS messages, make the following settings on the device's Web Based Management page:

- Enter the SMS service center
- Configure the access details for the cellular network
- Configure SMS Relay (Outgoing)
- Configure SMS Relay (Incoming)

NOTE

For a more detailed description of how to configure the SCALANCE M874/M876 router using Web Based Management, please refer to the device manual (see [3](#)).

2.1 Entering the SMS service center

To enable the router to send an SMS message, enter the short message service center (SMSC) of your mobile service provider or service provider.

With the router's WBM page ("System > SMS > General"), you can replace the default SMS service center call number by another one. This depends on your contract.

Figure 2-1

SMS General Settings

General | Event SMS | SMS Command | SMS Relay (Outgoing) | SMS Relay (Incoming)

Current SMS service center call number: +491722270000

Override SMS service center call number:

Note

The SMSC number is only required for sending SMS messages. If you only want to receive SMS messages, this number is irrelevant.

2.2 Configuring the access details for the cellular network

Access to the cellular network and the mobile telecommunications services requires the following access parameters:

- SIM card PIN
- APN access data

To configure the access detail for the cellular network, proceed as follows

1. Open the router's WBM page.

Note:

In the address bar of the web browser, enter the IP address or the URL of the device.

2. Enter the name "admin" and the associated password.

Figure 2-2

Note:

When you log in for the first time or after "Restore Factory Defaults and Restart", enter

- the default name "admin"
- the default password "admin".

The password needs to be changed after the first logon or after a "Restore Factory Defaults and Restart".

3. Click the "Login" button or confirm your entries with "Enter".
4. In the "SIM" tab of the WBM page of the SCALANCE M874/M876, enable the mobile network interface, "Interfaces > Mobile > SIM".

Figure 2-3

5. Enter the SIM card PIN.

Figure 2-4

Welcome admin
[Logout](#)

Wizards
Information
System
Interfaces
Ethernet
Mobile

Mobile Network Interface Settings

SIM | Operator | Connection Check

☒ Enable Mobile Network Interface

PIN: ●●●●

Radio Mode: Auto

Authentication Method: Auto

☒ Allow Data Roaming

Set Values Refresh

Note:

The PIN can be obtained from your mobile service provider.

6. Open the "Operator" tab: "Interfaces > Mobile > Operator". In "APN" enter the name of the mobile network operator. Check the "Manual APN" check box.

Figure 2-5

SIM | Operator | Connection Check

Country List: -
Provider List: -
PLMNID:
Operator Name:
APN:
User Name:
Password:
Password Confirmation:

Select	PL MNID	Operator Name	APN	User Name	Password	Password	Enabled
<input checked="" type="checkbox"/>	Manual						<input type="checkbox"/>
<input type="checkbox"/>	26203	Eplus	internet.eplus.de	guest	●●●●●●	●●●●●●	<input type="checkbox"/>
<input type="checkbox"/>	26202	Vodafone	web.vodafone.de	guest	●●●●●●	●●●●●●	<input checked="" type="checkbox"/>
<input type="checkbox"/>	26201	T-Mobile	internet.t-mobile	guest	●●●●●●	●●●●●●	<input type="checkbox"/>

5 entries.

Create Delete **Set Values** Refresh

Note:

When the "Manual APN" check box is unchecked, the device automatically selects the appropriate access parameters from the list of mobile network operators. By factory default, the access details of four mobile network operators are set and activated. The manually configured APN will be ignored.

NOTE

These access parameters can be obtained from your mobile network operator.

2.3 Configuring SMS Relay (Outgoing)

To enable the router to send an SMS message, make the following settings on the router's WBM page:

1. On the WBM page of the SCALANCE M874/M876, open the " System > SMS" menu.
2. Open the "SMS Relay (Outgoing)" tab.
3. Enable the sending of SMS messages from the local network.

Figure 2-6

The screenshot shows the 'SMS Relay Settings' page with the 'SMS Relay (Outgoing)' tab selected. The 'Enable SMS Relay' checkbox is checked.

4. Enter the user name and password that must be included before the text is sent by SMS.

The screenshot shows the 'SMS Relay Settings' page with the 'SMS Relay (Outgoing)' tab selected. The 'Enable SMS Relay' checkbox is checked. The 'User' field is set to 'admin' and the 'Password' field is masked with dots.

Note:

The user and password must match the values entered in the "username" and "password" "LSmsSR_typeSmsSnd"- parameters.

5. Enter the port on which the SCALANCE M receives the SMS message.

Figure 2-7

The screenshot shows the 'SMS Relay Settings' page with the 'SMS Relay (Outgoing)' tab selected. The 'Enable SMS Relay' checkbox is checked. The 'User' field is set to 'admin' and the 'Password' field is masked with dots. The 'Server Port Number' field is set to 26864. The 'Set Values' and 'Refresh' buttons are visible.

Note:

This port number must match the port address entered in the "remotePort" "LSmsSR_typeSmsSnd"- parameter (here: 26864).

NOTE

At a given time, only one S7 CPU can establish a connection to the SCALANCE M router and send the SMS message.

If multiple CPUs attempt to establish a connection to the SCALANCE M router at a given time, the escalation block is terminated with error:

16#000180A1: The specified connection or the port is already being used ([Chapter 3.3](#)).

2.4 Configuring SMS Relay (Incoming)

To enable the router to receive an SMS message and send it to the application, make the following settings on the router's WBM page:

1. On the WBM page of the SCALANCE M, open the "System > SMS" menu.
2. Open the "SMS Command" tab.
3. Enable the function "Enable Command SMS".
4. Enter all phone numbers from which the router should receive a command SMS message.

Figure 2-8

The screenshot shows the 'SMS Command' configuration page. The 'SMS Command' tab is active. The 'Enable Command SMS' checkbox is checked. The 'Phone Number / Sender Identifier' field is populated with '+4917123456789'.

For these phone numbers, check "Relay".

5. Open the "SMS Relay (Incoming)" tab "System > SMS > SMS Relay (Incoming)". Create a relay connection with
 - a unique name for the relay connection (Connection Name),
 - the recipient's IP address (IP address of the S7-CPU),
 - the port Number.

Figure 2-9

The screenshot shows the 'SMS Relay (Incoming)' configuration page. The 'SMS Relay (Incoming)' tab is active. The 'Connection Name' field is 'Service', the 'IP Address' field is '192.168.1.2', and the 'Port Number' field is '26864'.

Note:

- The connection name is entered in the command SMS message on the cellular device: **RLY Connection Name smsText**. In this way, you define to which recipient (CPU) the message will be relayed.
- The port number must match the port address entered in the "localPort" "LSmsSR_typeRcvSnd"- parameter (here: 26864).

6. Enter the username to check the reception of the message. The username is entered in the frame.

Figure 2-10

SMS Relay (Incoming)

General | Event SMS | SMS Command | SMS Relay (Outgoing) | SMS Relay (Incoming)

Connection Name: Service

IP Address: 192.168.1.2

Port Number: 26864

Username: admin

Password:

7. Enter the password associated with the username.

Figure 2-11

SMS Relay (Incoming)

General | Event SMS | SMS Command | SMS Relay (Outgoing) | SMS Relay (Incoming)

Connection Name: Service

IP Address: 192.168.1.2

Port Number: 26864

Username: admin

Password:

8. Repeat the password to confirm it.

Figure 2-12

SMS Relay (Incoming)

General | Event SMS | SMS Command | SMS Relay (Outgoing) | SMS Relay (Incoming)

Connection Name: Service

IP Address: 192.168.1.2

Port Number: 26864

Username: admin

Password:

Password (Confirmation):

9. Use "Create" to create the new relay connection.

Figure 2-13

SMS Relay (Incoming)

General | Event SMS | SMS Command | SMS Relay (Outgoing) | SMS Relay (Incoming)

Connection Name: Service

IP Address: 192.168.1.2

Port Number: 26864

Username: admin

Password:

Password (Confirmation):

Select	Connection Name	IP Address	Port Number	Username
0 entries.				

Create | delete | Refresh

NOTE

For a more detailed description of how to configure the SCALANCE M874/M876 router using Web Based Management, please refer to the device manual (see [3](#)).

3 Function Blocks of the "LSmsSR" Library

3.1 The "LSmsSR_SndSms" library block

Introduction

The "LSmsSR_SndSms" FB is used for sending an SMS message via the SCALANCE M routers.

3.1.1 Call and parameter interface

The following figure shows the call interface of the "LSmsSR_SndSms" library block.

Figure 3-1

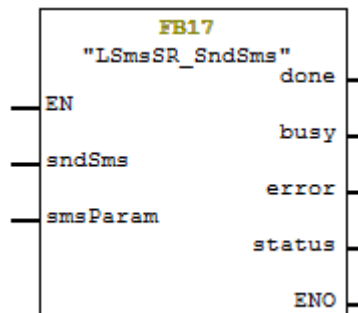


Table 3-1

Name		Data type	Description
Input	sndSms	Bool	Starts the send process. Reacts only to a positive edge.
InOut	smsParam	"LSmsSR_typeSmsSnd" UDT1	Parameters required for sending an SMS message (see Chapter 3.1.4).

Output	done	Bool	Set when sending has successfully completed. Only valid for one cycle. Default value: FALSE.
	busy	Bool	If the "LSmsSR_SndSms" block is busy sending, busy=TRUE. busy is set to FALSE as soon as the above sending has completed successfully or with an error.
	error	Bool	Provides feedback if an error occurs while executing a routine. Only valid for one cycle. Default value: FALSE
	status	Dword	When error = TRUE: Returns the status to narrow down the cause of the error (see Chapter 3.3). Only valid for one cycle.

3.1.2 Format of an SMS message to the SCALANCE M router

The router receives an SMS message from an S7 CPU that is transmitted in a frame via the TCP/IP connection. The frame matches the following format:

Username#Password#CommandCode#Seq-Num;Phone number;smsText:

1. Username

User name to check the send permission of an SMS message.

Maximum of 10 characters.

Note:

This user name must match the user name entered in WBM.

Figure 3-2

SMS Relay Settings

General | Event SMS | SMS Command | **SMS Relay (Outgoing)** | SMS Relay (Incoming)

☒ Enable SMS Relay

User: admin

Password: •••••

2. Password

Password associated with the user name.

Maximum of 10 characters.

Note:

This password must match the password entered in WBM.

Figure 3-3

SMS Relay Settings

General | Event SMS | SMS Command | SMS Relay (Outgoing) | SMS Relay (Incoming)

☒ Enable SMS Relay

User: admin

Password: [masked]

Server Port Number: 26864

3. CommandCode

Command for sending SMS messages from the local network. The default value "105" must not be changed.

4. Seq-Num

The sequence number is used to assign multiple requests at the same time. The function is currently not supported.

5. Phone number

SMS message recipient's phone number with a maximum of 40 characters.

6. smsText

SMS message text with a maximum of 160 characters.

NOTE

For a more detailed description of how to configure the SCALANCE M874/M876 router using Web Based Management, please refer to the device manual (see [3](#)).

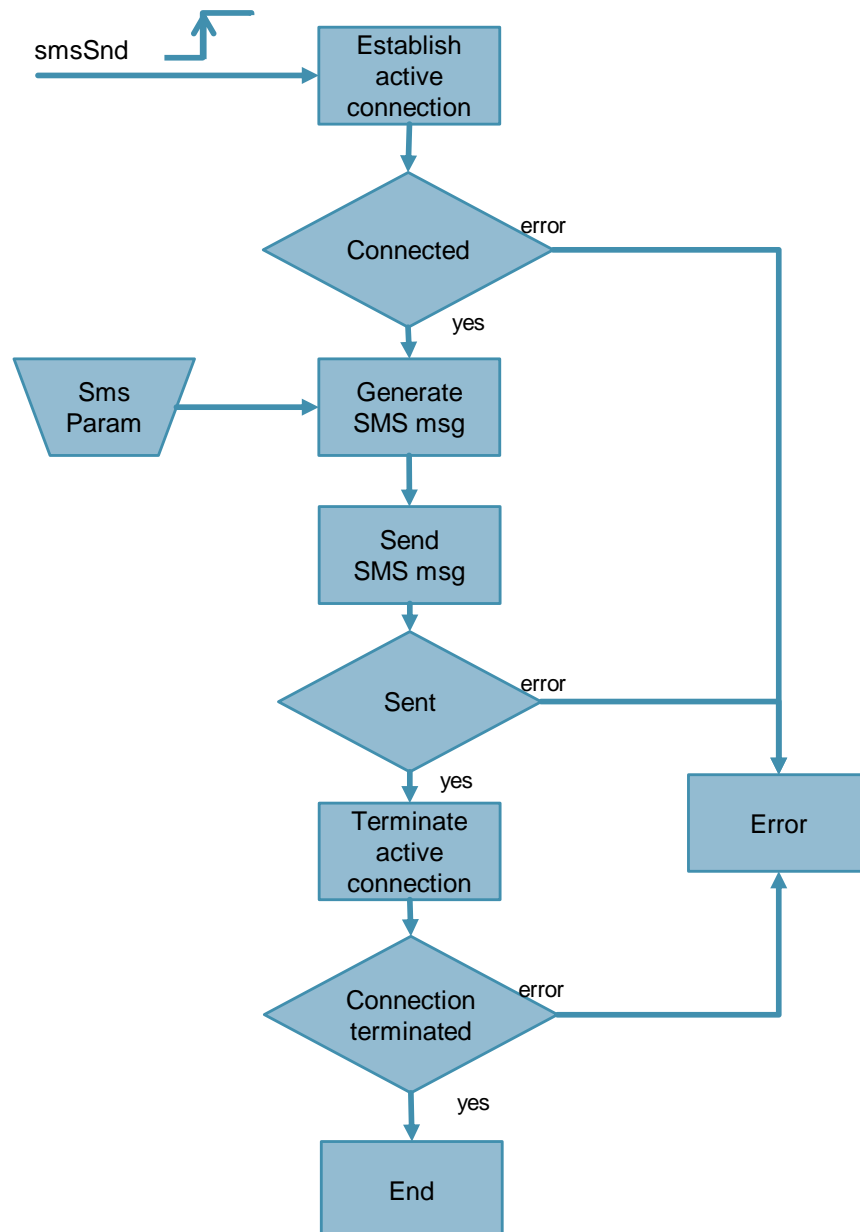
3.1.3 Description of the "Send SMS message" function

To send an SMS message, the application has to establish a TCP/IP connection to the router via the Ethernet interface.

Via this TCP/IP connection, the application sends the target parameters and the message text to the router, which then sends the information as an SMS message (see [Chapter 3.1.2](#)).

For TCP/IP communication, the "LSmsSR_SndSms" library block internally uses the "TCON", "TSEND" and "TDISCON" function blocks.

Figure 3-4



3.1.4 UDT1 "LSmsSR_typeSmsSnd"

The "LSmsSR_typeSmsSnd" user-defined datatype contains the parameters for 'Send SMS message'.

To start up the application, this data type is used in a global data block (DB1 "SmsParam"), that is linked to the "smsParam" InOut parameter of the function block.

Figure 3-5

Address	Name	Type	Initial value	Comment
0.0		STRUCT		
+0.0	ipAddress	DWORD	DW#16#0	IP-Address of partner (SCALANCE M)
+4.0	deviceId	BYTE	B#16#0	device id
+6.0	remotePort	INT	0	Remote Port
+8.0	username	STRING[10]	''	username
+20.0	password	STRING[10]	''	password
+32.0	telNo	STRING[40]	''	phone number
+74.0	smsText	STRING[160]	''	sms message
=236.0		END_STRUCT		

1. ipAddress
IP address of the partner (SCALANCE M).
 2. deviceId
Local_device_id (see [4](#)) of the S7-CPU.
 3. remotePort
Port number of the remote connection partner (here: of the SCALANCE M874/M876 router).
- Note:
This number must match the address entered in WBM (SMS Relay Outgoing).

Figure 3-6

SMS Relay Settings

General | Event SMS | SMS Command | **SMS Relay (Outgoing)** | SMS Relay (Incoming)

☒ Enable SMS Relay

User: admin

Password: *****

Server Port Number: 26864

Set Values Refresh

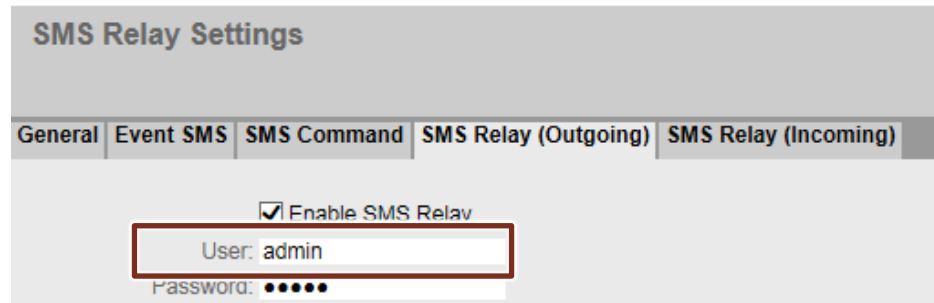
4. Username

User name to check the send permission of an SMS message.

Note:

This user name must match the user name entered in WBM (SMS Relay Outgoing).

Figure 3-7



The screenshot shows the 'SMS Relay Settings' window with tabs for 'General', 'Event SMS', 'SMS Command', 'SMS Relay (Outgoing)', and 'SMS Relay (Incoming)'. The 'SMS Relay (Outgoing)' tab is selected. Under the 'Enable SMS Relay' checkbox, the 'User:' field is highlighted with a red box and contains the text 'admin'. The 'Password:' field is visible below it with masked characters.

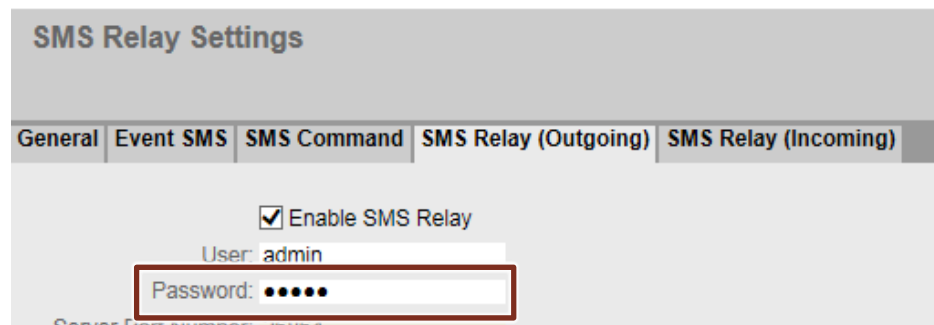
5. Password

Password associated with the user name.

Note:

This password must match the password entered in WBM (SMS Relay Outgoing).

Figure 3-8



The screenshot shows the 'SMS Relay Settings' window with the 'SMS Relay (Outgoing)' tab selected. The 'Enable SMS Relay' checkbox is checked. The 'User:' field contains 'admin'. The 'Password:' field is highlighted with a red box and contains masked characters. Below the password field, the text 'Server Port Number: 2525' is partially visible.

6. telNo

SMS message recipient's phone number.

7. smsText

SMS message text

3.2 The "LSmsSR_RcvSms" library block

Introduction

The "LSmsSR_RcvSms" FB is used for receiving an SMS message via the SCALANCE M routers.

3.2.1 Call and parameter interface

The following figure and table show the call interface of the "LSmsSR_RcvSms" library block.

Figure 3-9

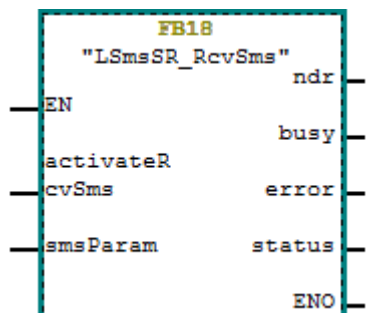


Table 3-2

	Name	Data type	Description
Input	activateRcvSms	Bool	TRUE: Activates the reception of SMS messages. FALSE: Deactivates the reception of SMS messages.
	smsParam	"LSmsSR_typeSmsRcv" PLC data type	Parameters required for receiving an SMS message (see Chapter 3.2.4).
Output	ndr	Bool	Signals that a new SMS message has been received. Only valid for one cycle.
	busy	Bool	If the "LSmsSR_RcvSms" block is busy receiving, busy=TRUE. busy is set to FALSE as soon as the above receiving has completed successfully or with an error.
	error	Bool	Provides feedback if an error occurs while executing a routine. Only valid for one cycle. Default value: FALSE
	status	Dword	When error = TRUE: Returns the status to narrow down the cause of the error (see Chapter 3.3). Only valid for one cycle.

3.2.2 Format of an SMS message to the SCALANCE M router

The router receives an SMS message from a cellular device in the following format:

RLY Connection Name smsText

- RLY: SMS relay command
- Connection Name: variable, according to the configuration
- smsText: SMS message text

NOTE

Only one space is required between the words.

The message is sent to the S7-CPU in a frame via the TCP/IP connection with this connection name in the following format:

Username#Password#CommandCode#Seq-Num;Phone number;smsText:

1. Username

User name to check the reception of the message.

Maximum of 10 characters.

Figure 3-10

The screenshot shows the 'SMS Relay (Incoming)' configuration window. The 'General' tab is active. The 'Username' field is highlighted with a red rectangle.

2. Password

Password associated with the user name.

Maximum of 10 characters.

Figure 3-11

The screenshot shows the 'SMS Relay (Incoming)' configuration window. The 'General' tab is active. The 'Password' field is highlighted with a red rectangle.

3. CommandCode

4. Command for receiving SMS messages from the local network. The default value "105" must not be changed.

5. Seq-Num

The sequence number is used to assign multiple requests at the same time. The function is currently not supported.

6. Connection Name
SMS message recipient's connection name with a maximum of 40 characters.
7. Phone number
SMS message sender's phone number.
8. smsText
SMS message text with a maximum of 160 characters.

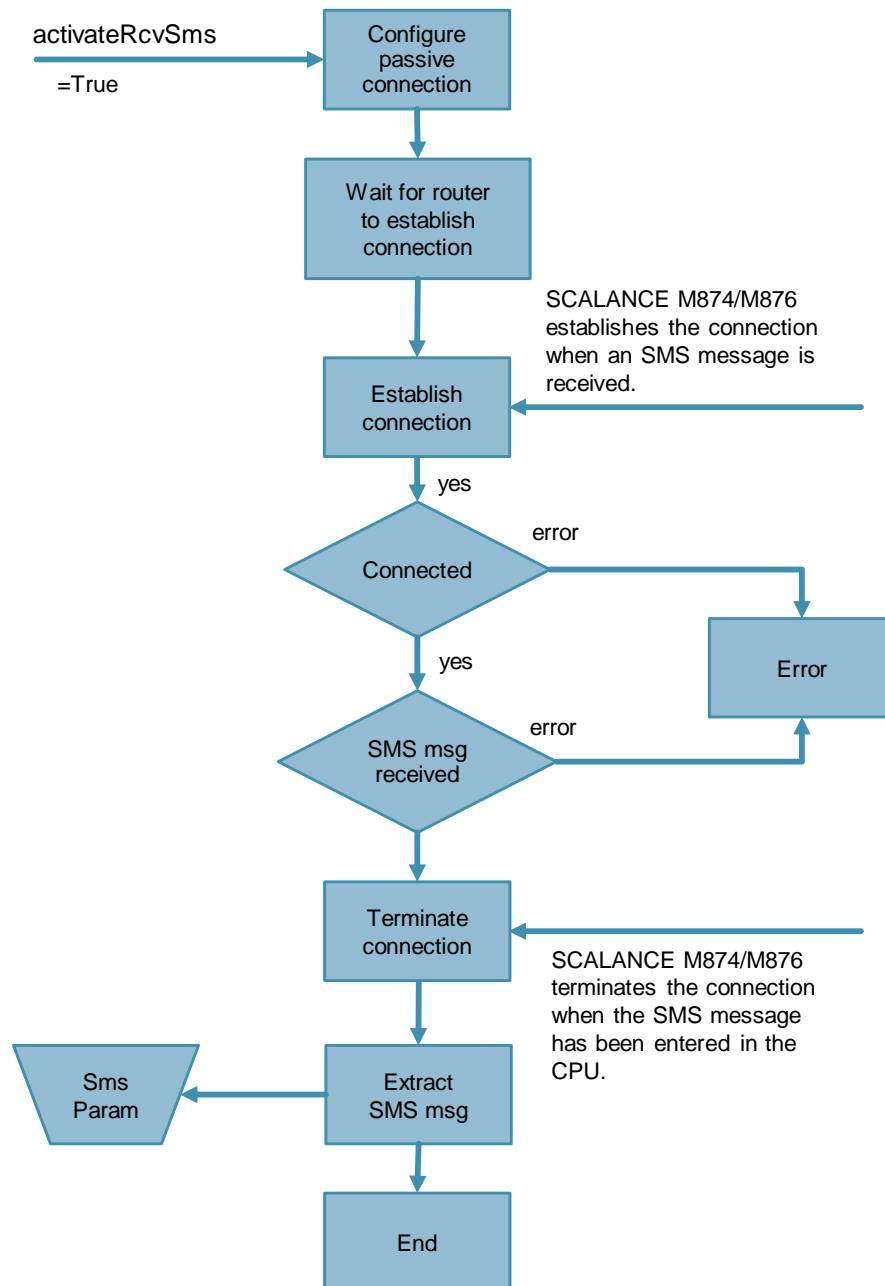
NOTE

For a more detailed description of how to configure the SCALANCE M874/M876 router using Web Based Management, please refer to the device manual (see [3](#)).

3.2.3 Description of the "Receive SMS message" function

Applications can also receive SMS messages via the router's Ethernet interface. To do this, the router must establish a TCP/IP connection to the application on the Ethernet interface. The router receives a command SMS message (**RLY Connection Name smsText**) and sends the received message (see [Chapter 3.2.2](#)) to the application. For TCP/IP communication, the "LSmsSR_RcvSms" library block internally uses the "TCON", "TRCV" function blocks.

Figure 3-12



3.2.4 UDT2 "LSmsSR_typeSmsRcv"

The "LSmsSR_typeSmsRcv" user-defined data type contains the receive data. To start up the application, this data type is used in a global data block (DB1 "SmsParam"), that is linked to the "smsParam" InOut parameter of the function block.

Figure 3-13

Address	Name	Type	Initial value	Comment
0.0		STRUCT		
+0.0	deviceId	BYTE	B#16#0	device id
+2.0	localPort	INT	0	local port
+4.0	rcvTelNo	STRING[40]	' '	received phone number
+46.0	rcvMessage	STRING[160]	' '	received sms Message
=208.0		END_STRUCT		

1. deviceId (see \4)
Local_device_id (see \4) of the S7-CPU.
2. localPort
Port number of the local connection partner (here: of the S7-CPU).
Note:
This number must match the address entered in WBM (SMS Relay Incoming).

Figure 3-14

SMS Relay (Incoming)

General	Event SMS	SMS Command	SMS Relay (Outgoing)	SMS Relay (Incoming)
Connection Name: Service IP Address: 192.168.1.2 Port Number: 26864 Username: admin				

3. rcvTelNo
SMS message sender's phone number.
4. rcvMessage
SMS message text received.

3.3 Status and error displays

For error diagnostics, evaluate the "LSmsSR_SndSms" and "LSmsSR_RcvSms" "status" output. By reading the "status" output of the function block, you are provided with information on logical errors and error messages that may occur during the communication between the controller and the router.

The error message structure is such that the first word indicates the block that triggered this message. For example, error message 16#000180A3 was triggered by "TCON" instruction. The following tables provide a list of possible error messages.

"LSmsSR_SndSms" errors

Figure 3-15

Status	Meaning	Remedy / notes
16#0001xyzx	"TCON" error message (active)	For a description of the communication errors, please refer to the STEP 7 Online Help.
16#0011xyzx	"TSEND" error message	
16#0111xyzx	"TDISCON" error message	
16#00008101	Previous job not yet complete. (You have started a new send operation, although busy was still active.)	
16#00008102	Watchdog timer alarm.	Make sure that <ul style="list-style-type: none"> the IP address entered in the "ipAddress" parameter is identical to the IP address of the SCALANCE M874/M876. the S7-1200/S7-1500 CPU is physically connected to the SCALANCE M874/M876.
16#00008103	"smsText" contains the forbidden character ".".	Change "smsText"
16#00008104	"smsText" contains the forbidden character ",".	
16#00008105	"smsText" contains the forbidden character "#".	
16#00008106	"telNo" contains the forbidden character "x".	Change "telNo"

"LSmsSR_RcvSms" errors

Table 3-3

Status	Meaning	Remedy / notes
16#0010xyzx	"TCON" error message (passive)	For a description of the communication errors, please refer to the STEP 7 Online Help.
16#0110xyzx	"TRCV" error message	

4 Working with the Library

This chapter consists of instructions for integrating the "LSmsSR" library into your STEP 7 V15.1 project and instructions for using the library block.

4.1 Integrating the library into STEP 7

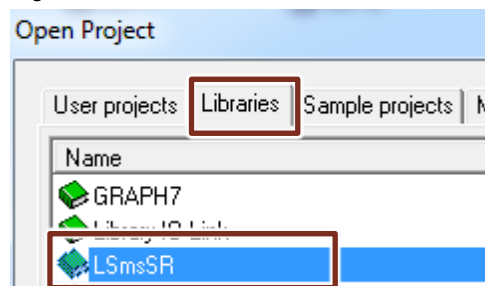
The following table shows the steps required to integrate the "LSmsSR" library into your STEP 7 V5.6 project. After integrating the library, you can use the blocks of the "LSmsSR" library.

NOTE

The following section assumes that a STEP 7 project exists.

1. The library is available on the HTML page from which you downloaded this document ([2](#)). Save the "54361177_SMS_SCALANCE_M_LIB_V56_V10.zip" library to your hard drive.
2. Open the "SIMATIC Manager" and unzip the "54361177_SMS_SCALANCE_M_LIB_V56_V10.zip" library ("File > Retrieve...").
3. From now on, the library is available under "Libraries".

Figure 4-1

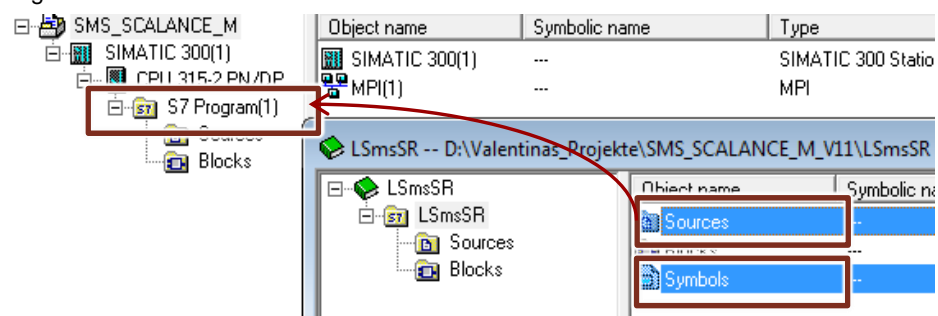


4.2 Integrating the library block into STEP 7

The following table shows the steps required to integrate the elements of the "LSmsSR" library into your STEP 7 V5.6 project. After integrating these elements, you can use the blocks of library.

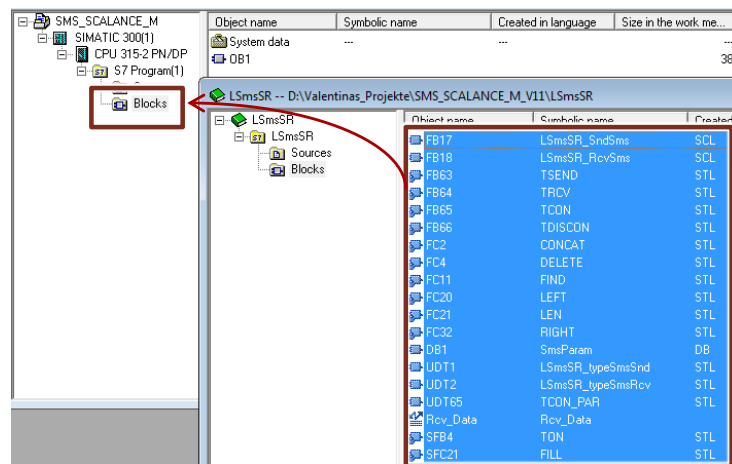
1. Open the existing STEP 7 V5.6 project.
2. Select the S7 program of the "LSmsSR" library.
3. Insert the "Symbols" and the "Sources" in your STEP 7 project using Drag&Drop.

Figure 4-2



4. Open the "Blocks" folder of the "LSmsSR" library.
5. Use drag and drop to move the blocks to the "Program blocks" folder of the S7-CPU.

Figure 4-3



6. Open the global data block DB1 "SmsParam".

Figure 4-4

Address	Name	Type
0.0		STRUCT
+0.0	SnsSms	"LSmsSR_typeSmsSnd"
+236.0	RcvSms	"LSmsSR_typeSmsRcv"
=444.0		END_STRUCT

7. Assign values to all parameters necessary for sending/receiving (see [Chapter 3.1.4](#) / [Chapter 3.2.4](#)):

- ipAddress
- interfacedId
- remotePort
- username
- password
- telNo
- smsText

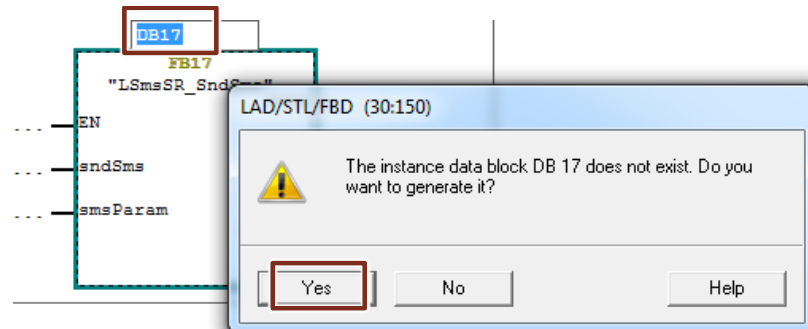
Figure 4-5

Address	Name	Type	Initial value	Actual value
0.0	SnsSms.ipAddress	DWORD	DW#16#0	DW#16#C0A80101
4.0	SnsSms.deviceId	BYTE	B#16#0	B#16#0
6.0	SnsSms.remotePort	INT	0	26864
8.0	SnsSms.username	STRING [10]	''	'admin'
20.0	SnsSms.password	STRING [10]	''	'admin'
32.0	SnsSms.telNo	STRING [40]	''	'+491xxxxxxxxxxx'
74.0	SnsSms.smsText	STRING [160]	''	'RLY connection1 Test'
236.0	RcvSms.deviceId	BYTE	B#16#0	B#16#0
238.0	RcvSms.localPort	INT	0	26864
240.0	RcvSms.rcvTelNo	STRING [40]	''	''
282.0	RcvSms.rcvMessage	STRING [160]	''	''

8. Save and compile the global data block DB1 "SmsParam".

9. In the "Program blocks" folder of your device, open the OB1 organization block.
10. Use drag and drop to move the "LSmsSR_SndSms" or "LSmsSR_RcvSms" function block to any network.
11. Enter the name of the instance data block. Generate the instance data block if it does not exist.

Figure 4-6



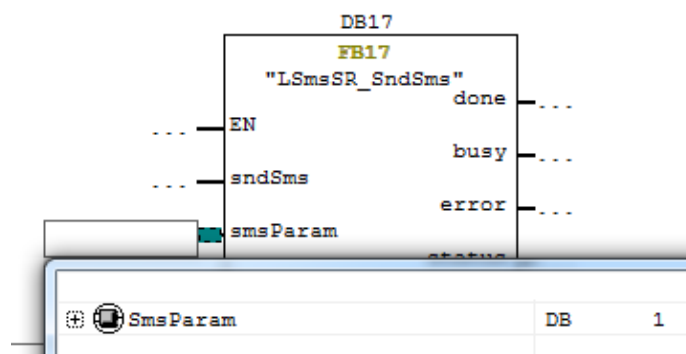
Note:

Set within the properties of the Instance-DB the option "Non Retain".

"Object Properties> General Part2> Non Retain"

12. Assign values to all necessary parameters. Use values from the global data block DB1 "SmsParam".

Figure 4-7



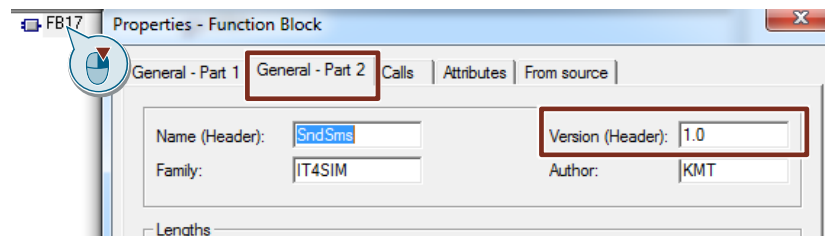
13. Save the OB1 "organization block" and load the STEP 7 Project.

4.3 Updating the "LSmsSR" library

The following guide shows you

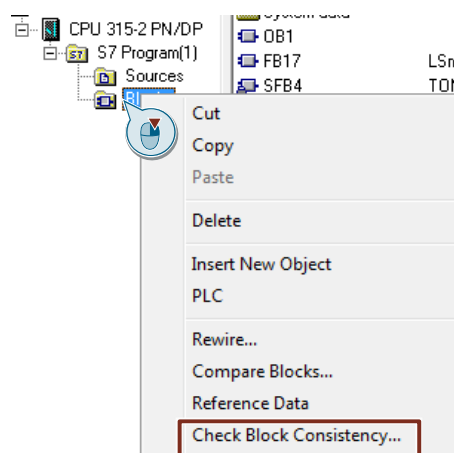
- how to check whether the library is up to date and
 - how to integrate a newer version of the "LSmsSR" library into your
 - STEP 7 project.
1. Open "SIMATIC Manager" and compare the current version number of each element of the library with the latest version from the Industry Online Support portal.
 2. In the Project tree, right-click the blocks of the library. In the context menu, select the "Object properties" option.
 3. In the "Properties" window that is displayed, select the "General – Part 2" menu.

Figure 4-8



4. If you want to update the library, integrate the latest library as described in [Chapter 4.2](#).
5. Delete all relevant elements in the "Blocks" folder.
6. Do not delete the function block call in OB1.
7. Add the new elements of the library as described in [Chapter 4.2](#), Steps 1 through 3.
8. In the Project tree, right-click the blocks of the library
Update the elements of the project
"Blocks > Check Block Consistency".

Figure 4-9



9. The library update is now complete.

5 Appendix

5.1 Service and support

Industry Online Support

Do you have any questions or need assistance?

Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.

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Industry Online Support app

You will receive optimum support wherever you are with the "Siemens Industry Online Support" app. The app is available for Apple iOS, Android and Windows Phone:

support.industry.siemens.com/cs/ww/en/sc/2067

5.2 Links and literature

Table 5-1

No.	Topic
\1\	Siemens Industry Online Support https://support.industry.siemens.com
\2\	Link to this entry page of this application example https://support.industry.siemens.com/cs/ww/en/view/54361177
\3\	SIMATIC NET: Industrial Remote Communication Remote Networks SCALANCE M-800 Web Based Management https://support.industry.siemens.com/cs/ww/en/view/109751635
\4\	Which "local_device_id" do you parameterize in order to establish a connection with FB65 "TCON" for Open User Communication (OUC) via Industrial Ethernet? https://support.industry.siemens.com/cs/ww/en/view/51339682

5.3 Change documentation

Table 5-2

Version	Date	Modifications
V1.0	10/2019	First version