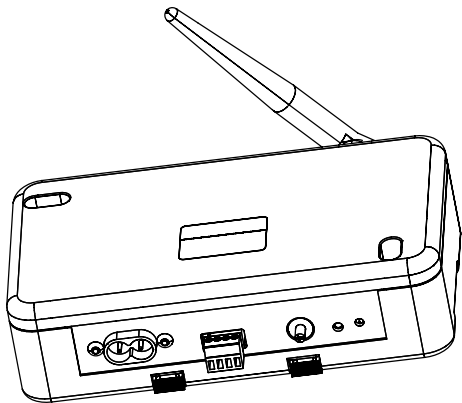


# RS485 RTS TRANSMITTER





SOMFY hereby declares that this product complies with the essential requirements and other relevant provisions of Directive 1999/5/EC. A Declaration of Conformity is available at the web address [www.somfy.com/CE](http://www.somfy.com/CE). Suitable for use in EU, CH and NO.

## SAFETY AND IMPORTANT INFORMATION

- This Somfy product must be installed by a professional motorisation and home automation installer, for whom these instructions are intended.
- Before installation, check that this product is compatible with the associated equipment and accessories.
- These instructions describe how to install, commission and use this product.
- Moreover, the installer must comply with current standards and legislation in the country in which the product is being installed, and inform his customers of the operating and maintenance conditions for the product.
- Any use outside the sphere of application specified by Somfy is not approved. Such use, or any failure to comply with the instructions given herein will invalidate the warranty, and Somfy refuses to accept liability.

## PRODUCT DESCRIPTION

The RS485 RTS transmitter is a motor controller which allow to manage all your Somfy RTS applications with the same centralized home control system.  
It can control up to 16 groups of SOMFY RTS motors and receivers.  
It is impossible to set a motor or a receiver with this RS485 RTS transmitter.  
The RS485 RTS transmitter is for internal use only.

## ENVIRONMENT



Damaged electric products and batteries should not be disposed of with normal household waste.  
Make sure to drop them in specially provided containers or at an authorized organization that will ensure they are recycled.

## INSTALLATION

### Wall installation

### DIN rail installation

## WIRING

### Controls wiring

1) For RS485 Control  
Plug the RS485 control to the RS485 connector.

NC: Not Use

+ : RS 485 Bus +

- : RS 485 Bus -

G : Ground

2) For Dry Contact Control  
Plug the dry contact control to the dry contact connector.

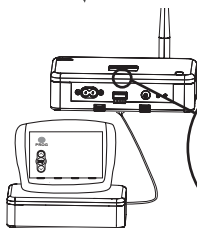
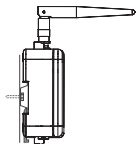
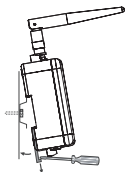
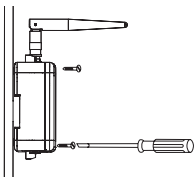
▼ : Down

▲ : Up

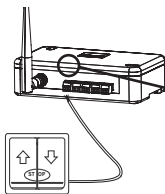
C : Commun

### Power wiring

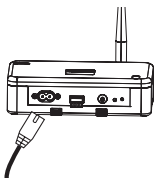
Connect the transmitter to a standard AC power source.



RS485  
NC - + G



1  
▼ ▲ C



## COMMISSIONING

Before assign a product to the transmitter, this product must be set.

### Assign a product with a RS485 control

1) Press the programming button on the back of the RTS control point or the RTS receiver until the motor jogs.

The product is in programming mode.

2) Send by the RS485 control, the corresponding RTS frame on the desired channel.

The product is assigned to the transmitter's channel with a motor jog.

### Assign a product with a DRY CONTACT control

1) Select the RTS address on the Channel selector corresponding to dry contact connectors.

- The dry contact connector n°1 has per default, the RTS address n°1

- The dry contact connector n°2 has per default, the RTS address n°2

- .....

- .....

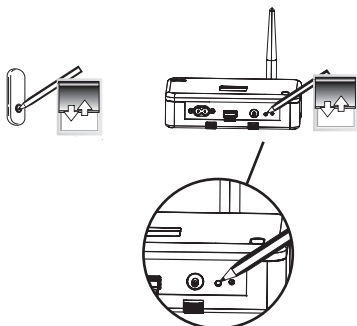
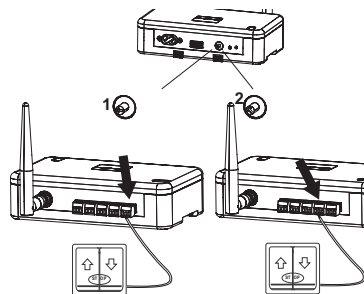
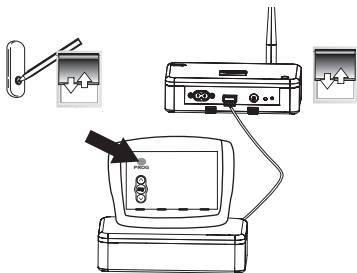
- The dry contact connector n°5 has per default, the RTS address n°5

2) Press the programming button on the back of the RTS control point or the RTS receiver until the motor jogs.

The product is in programming mode.

3) Press the programming button on the RS485 RTS transmitter until the motor jogs.

The product is assigned to the transmitter.



## USE

### Dry contact

### Up, Down, Stop and My

#### Up

Press the Up button of the control

#### Down

Press the Down button of the control

#### Stop / My

Press the Stop button of the control.

If the product move, it will stop.

If the product don't move, the product goes to the My position (if a My position is recorded).

### My position

#### 1) Recording My position.

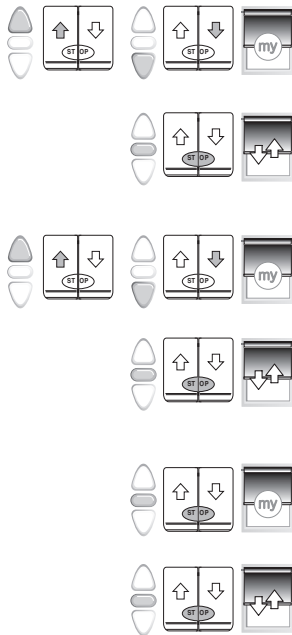
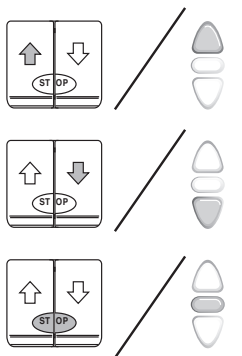
To set the My position, move the product to the desired position with the UP and DOWN buttons then press the My button until the shade jogs or the light blink.

#### 2) Changing the My position

To change the My position go to the new desired My position with the UP and DOWN buttons then press the My button until the product jogs or the light blink.

#### 3) Delete the My position

To delete the MY position, move to this position and press the My button until the product jogs or the light blink.



## RS485 communication standard

All signals on the physical link between devices should comply with EIA/TIA-485-A standard.

Recommended cable : Shielded , two twisted- pair type 22 - 24 AWG (120  $\Omega$ )

Communication mode : half-duplex

Between two messages, leave 100 ms approx.

**Each character is coded as follow :**

Character coding		
Baud Rate	4800	+/-1%
Start bit	Logical Level 0	
Data bits	8	Less significant bit transmitted first
Parity	Odd	
Stop bit	Logical Level 1	

## Message Format

Byte Number	Name	Value	Description
1	MSG	See Message Table	Refer to 'MSG' column in the table below for a list of available messages.
2	LEN		Refer to 'LEN' column to have the correct value depending on message.
3	Reserved	05h / 50h	Always 05h when message sent to RS485 RTS transmitter Always 50h when message received from RS485 RTS transmitter
4 - 6	SRC@ (*)	Node dependant (refer to product label)	NodeID of the transmitter (Source address)
7 - 9	DEST@		NodeID of the receiver (Destination address)
...	DATA	See Message Table	Information on DATA fields can be found below : <ul style="list-style-type: none"> <li>- Length of DATA part (in byte count)</li> <li>- Type of every DATA fields</li> <li>- Available values for each DATA fields</li> </ul>
Byte n-1	CHECKSUM	_____	CHECKSUM is one's complement of sum of bytes 1 to byte (n-2) if CHECKSUM not correct, message is ignored.
Byte n		Byte 1 + ... + Byte (n-2)	

(\*) When the host is not a SOMFY product, its source address shall be included in the following values : FF FF 00 <= SRC@ <= FF FF FE

# Messages table

Command Type	Command Description	Message Name (MSG)
<b>Setting</b>	Configure application modes : - CE/US ergonomics - Rolling / Tilting mode - MODULIS mode	SET_FORMAT (90h)
	Set number of RTS frames to send on a CTRL_TILT order	SET_TILT_FRAMECOUNT (91h)
	Set number of RTS frames to send on a CTRL_DIM order	SET_DIM_FRAMECOUNT (92h)
	Sun Auto ON / OFF	SET_SUN_AUTO (93h)
	Lock / Unlock dry contacts inputs	SET_DCT_LOCK (94h)
	Send PROG command	SET_CHANNEL (97h)
	Open the programming mode	SET_OPEN_PROG (98h)
	Save favorite position as Intermediate Position	SET_IP (9Ah)

LEN	DATA Length	DATA Type	DATA Value
0Fh	4	8-bits	0 to 15 = RTS channel selection
		8-bits	0 = CE Mode 1 = US Mode (Default)
		8-bits	0 = Rolling Mode (Default) 1 = Tilting Mode
		8-bits	0 = Normal Mode 1 = Modulus Mode (Default)
0Eh	3	8-bits	0 to 15 = RTS channel selection
		8-bits	US mode (range = 4 to 255)
		8-bits	CE mode (range = 2 to 13)
0Dh	2	8-bits	0 to 15 = RTS channel selection
		8-bits	Range = 4 to 255
0Dh	2	8-bits	0 to 15 = RTS channel selection
		8-bits	0 = ON 1 = OFF
0Ch	1	8-bits	Bits 1 to 5 control inputs 1 to 5 0 = Unlock 1 = Lock
0Ch	1	8-bits	0 to 15 = RTS channel selection
0Ch	1	8-bits	0 to 15 = RTS channel selection
0Ch	1	8-bits	0 to 15 = RTS channel selection

Command Type	Command Description	Message Name (MSG)
<b>Control</b>	Move UP / Light ON Move DOWN / Light OFF STOP movement Move to favorite position / Switch light ON with favorite light level	CTRL_POSITION (80h)
	Tilt + / -	CTRL_TILT (81h)
	Dim + / -	CTRL_DIM (82h)

LEN	DATA Length	DATA Type	DATA Value
0Dh	2	8-bits	0 to 15 = RTS channel selection
		8-bits	1 = UP / ON 2 = DOWN / OFF 3 = STOP 4 = Favorite position / light level
0Eh	3	8-bits	0 to 15 = RTS channel selection
		8-bits	0 = Tilt + 1 = Tilt -
		8-bits	Tilting value (1 to 127)
0Eh	3	8-bits	0 to 15 = RTS channel selection
		8-bits	0 = Dim + 1 = Dim -
		8-bits	Diming value (1 to 127)

Command Type	Command Description	Message Name (MSG)
<b>Status</b>	Read application modes configuration	GET_CHANNEL_MODE (A0h)
	Answer to GET_CHANNEL_MODE	POST_CHANNEL_MODE (B0h)
	Read RTS frame count for CTRL_TILT order	GET_TILT_FRAMECOUNT (A1h)
	Answer to GET_TILT_FRAMECOUNT	POST_TILT_FRAMECOUNT (B1h)
	Read RTS frame count for CTRL_DIM order	GET_DIM_FRAMECOUNT (A2h)
	Answer to GET_DIM_FRAMECOUNT	POST_DIM_FRAMECOUNT (B2h)
	Read dry contacts lock configuration	GET_DCT_LOCK (A4h)
	Answer to GET_DCT_LOCK	POST_DCT_LOCK (B4h)

Warning: All messages named POST\_Something are messages sent by the product as an answer to the corresponding GET\_Something request. If POST\_Something message is sent to the product, it will be ignored.

LEN	DATA Length	DATA Type	DATA Value
0Ch	1	8-bits	0 to 15 = RTS channel selection
0Fh	4	8-bits	0 to 15 = RTS channel selection
		8-bits	0 = CE Mode 1 = US Mode
		16-bits	0 = Rolling Mode 1 = Tilting Mode
		16-bits	0 = Normal Mode 1 = Modulus Mode
0Ch	1	8-bits	0 to 15 = RTS channel selection
0Eh	3	8-bits	0 to 15 = RTS channel selection
		8-bits	Frame count in US mode
		16-bits	Frame count in CE mode
0Ch	1	8-bits	0 to 15 = RTS channel selection
0Dh	2	8-bits	0 to 15 = RTS channel selection
		8-bits	Frame count
0Bh	0	n/a	
0Ch	1	8-bits	Bits 1 to 5 control inputs 1 to 5 0 = Unlock 1 = Lock

## Example

### Steps to follow to create a correct data frame :

1. Create frame with values as indicated in the tables above => «raw data»
2. Invert all data bytes => «actual data»
3. Calculate the checksum on «actual data» (sum of all inverted bytes)
4. Data to send are the concatenation of «actual data» and checksum

### Steps to follow when receiving data from a product :

1. Received data are the concatenation of «actual data» and checksum
2. Remove the last 2 bytes to isolate the checksum and get «Actual data»
3. Invert all remaining data bytes to get the «raw data»

The following examples show the data to send on the bus for different message types. Examples are given for a communication between a host and a slave using the following addresses :

Host@ = FF:FF:00 (FF FF 00 <= @ <= FF FF FE for a non-SOMFY host)

Slave@ = 05:00:02 (See NodeID label on product)

Messages	Direction	Data
<b>CTRL_POSITION</b> Parameters : ( Channel4, DOWN ) >> Send DOWN command on channel 4	<b>Command</b> Host >> Slave	1. Raw data 2. Actual Data 3. Checksum <b>4. Data to send</b> 80 0D 05 00 FF FF 02 00 05 04 02 7F F2 FA FF 00 00 FD FF FA FB FD 08 58 7F F2 FA FF 00 00 FD FF FA FB FD 08 58
<b>CTRL_TILT</b> Parameters : ( Channel8, Tilt-, 30 ) >> Send a TILT command of -30 pulses	<b>Command</b> Host >> Slave	1. Raw data 2. Actual Data 3. Checksum <b>4. Data to send</b> 81 0E 05 00 FF FF 02 00 05 08 01 1E 7E F1 FA FF 00 00 FD FF FA F7 FE E1 09 34 7E F1 FA FF 00 00 FD FF FA F7 FE E1 09 34
<b>GET_CHANNEL_MODE</b> Parameters : ( Channel6 ) >> Read configuration of channel 6	<b>Request</b> Host >> Slave	1. Raw data 2. Actual Data 3. Checksum <b>4. Data to send</b> A0 0C 05 00 FF FF 02 00 05 06 5F F3 FA FF 00 00 FD FF FA F9 07 3A 5F F3 FA FF 00 00 FD FF FA F9 07 3A
<b>POST_CHANNEL_MODE</b> Parameters : ( Channel6, US, Rolling, MODULIS) >> Answer to the previous status request	<b>Answer</b> Slave >> Host	1. Received data 2. Actual data <b>3. Raw data</b> 4F F0 AF FD FF FA FF 00 00 F9 FE FF FE 09 D7 4F F0 AF FD FF FA FF 00 00 F9 FE FF FE B0 0F 50 02 00 05 00 FF FF 06 01 00 01

## RS485 command

### for a blind

MOVE UP	Allow to open the blind.
MOVE DOWN	Allow to close the blind.
INTERMEDIATE POSITION	Allow to move the blind to the intermediate position.
STOP	Allow to stop the blind.
TILT +	Allow to move the venetian slats in one way.
TILT -	Allow to move the venetian slats in the other way.
SAVE FAVORITE POSITION AS INTERMEDIATE POSITION	Allow to record, change or delete an intermediate position. (cf : USE / My position p 5).
SUN AUTO ON	Allow to activate the sun automatism.
SUN AUTO OFF	Allow to deactivate the sun automatism.

### for light

Light ON	Allow to switch on the light.
Light OFF	Allow to switch off the light.
ON (favourite light position)	Allow to switch on the light to a favorite level.
DIM +	Allow to increase the light intensity.
DIM -	Allow to decrease the light intensity.

**TECHNICAL DATA**

<b>Voltage</b>	<b>90V → 255V</b>	
<b>Voltage Frequency</b>	<b>50Hz → 60Hz</b>	
<b>Operating temperature</b>	<b>0°C / 60 °C</b>	
<b>Protection rating</b>	<b>IP20</b>	
<b>Control</b>	<b>Dry Contact / RS485</b>	
<b>RTS Frequency</b>	<b>433 MHz</b>	<b>447 MHz</b>

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Jeddah :

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### Kuwait: Somfy Kuwait

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### Lebanon: Somfy

Lebanon

Tel: +961 (0) 1 391 224

### Malaysia: Somfy Malaysia

Tel: +60 (0) 3 228 74743

### Mexico: Somfy Mexico SA de CV

Tel: 52 (55) 4777 7770

### Morocco: Somfy Maroc

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