

# DOCUMENTATION

# **MEC***tp*



# TECHNICAL AND APPLICATION DESCRIPTION

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U VERSION HISTORY	0	VERSION	HISTORY
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Version	Date	Comments	
1.0	October 2012	First official issue	
1.1	8 February 2013	Additional description: repeater	
1.2	21 February 2013	Additional information	
1.3	Mai 2013	Additional note: telegram transmission, fallback time, physical	
		address at delivery status	
1.4	April 2014	New technical drawing	
1.5	June 2014	Correction: current consumption	
1.6	January 2016	Additional information	
1.7	July 2016	New documentation layout	

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# 2 **MEC***tp* PRODUCT DESCRIPTION

The **MEC***tp* media coupling device can be used as a **line coupler**, as a **backbone coupler** or as a **line repeater**. The basic functionality of the **MEC***tp* is coupling a KNX TP main line with a KNX TP sub line. Providing galvanic isolation between the two connected lines it enables a data connection between the upper line (main line or backbone) and the lower line.

Due to its flexibility the coupler can be used as a line coupler to connect a sub line to a main line or as a backbone coupler to connect a main line to a backbone line. The main task of the **MEC***tp* is to filter the traffic according to the installation place in the hierarchy (individually addressed telegrams, in this document named Physical telegrams) or according to the built in filter tables for group oriented communication (Group telegrams).

Compared to other similar products the **MEC***tp* provides outstanding features, for example its support of long messages (up to 240 byte APDU length) and a configurable one button activation of the "Manual Function" (transmit all telegrams, transmit Physical telegrams or transmit Group telegrams). This functionality is helpful during installation, during run time and for trouble shooting. To easily identify common communication problems due to bus load or retransmissions on both lines the high informative 6 duo LED display shows the bus status on each line accurately.

The **MEC***tp* is also able to link two lines for data transfer. As a line repeater the **MEC***tp* <u>still</u> provides galvanic isolation between the connected lines. Result is up to four lines can form a single sub line with up to three line repeaters used after the line coupler. Each sub line segment requires its own KNX power supply unit.



# **3 KNX TOPOLOGY**



Picture 1: Topology

#### **Please note:**

Commissioning at delivery status means:

- All telegrams are blocked because the filter table is not defined
- The fallback time after manual operation is 120 min
- The physical address is 15.15.0



# 4 DEVICE FRONTEND



Picture 2: Front view



# **5 OPERATIONAL DESCRIPTION**

According either to the factory default settings or to the latest parameter settings (downloaded from ETS, also other tools) being in "Normal Mode" the **MEC***tp* operates as it is supposed to. The default configurations of the "Normal Mode" are set by the main line and the sub line parameters.

### 5.1 NORMAL MODE

	C		
	Green	Red	
LED 1	Off: main line error or not connected	On manual overwrite estive	
<b>Bus State Main</b>	On: main line OK	On. manual overwrite active	
LED 2	Off: sub line not connected	N A	
Bus State Sub	On: sub line OK	N.A.	
LED 3	Blinking: bus traffic on main line	Blinking	
Traffia Main	(only valid telegrams)	transmission armon on main line	
	Off: no traffic on main line		
	Blinking: bus traffic on sub line	Plinking	
LED 4 Trueffic Carb	(only valid telegrams)	transmission error on sub line	
I rame Sub	Off: no traffic on sub line		
	Routing of Group telegrams		
LED 5	Off: main and sub different,	Block	
Group Address	On: filter table is active		
	On with mixed colour (green and red): route all		
	Routing of Physical telegrams		
LED 0	Off: main and sub different,	<mark>Yellow</mark> : block	
Physical	On: filter table active		
Auuress	On with mixed colour (green <i>and</i> yellow): route all		
LED 7	N A	On: device in "Program Mode"	
Programming	IN.A.	Blinking: LAN line error	

### 5.2 PROGRAM MODE

With the Programming button the device can be switched between "Normal Mode" and "Program Mode". To download the physical address to the device this function is essential. After the download the **MEC***tp* automatically returns to the "Normal Mode".

#### **Programming LED (7):**

Off:	Normal Mode
On:	Program Mode

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### 5.3 FUNCTION BUTTON

The function button is used for two purposes, either to switch to "Manual Function" or to do a factory reset. Being in "Normal Mode" it depends on the duration of time the button is being pressed.

### 5.3.1 MANUAL FUNCTION

### • Long press (≈ 3 sec) in "Normal Mode"

The device activates the "Manual Function" and the LEDs change their status. Pressing the button again for some seconds deactivates the "Manual Function". After expiration of the Fallback time the device returns to "Normal Mode" automatically. To configure the "Manual Function" and set the Fallback time use the parameter tab "General".

### Please note:

The latest downloaded settings (parameters) and the filter table are still available after switching back from "Manual Function" to "Normal Mode".

### 5.3.2 FACTORY RESET

#### • Very long press (≈ 15 s) in "Normal Mode"

A factory reset is carried out by pressing the button for about 15 seconds (LEDs 1,2,5,6 light with mixed colour). After release, pressing it again for some seconds resets all the parameters to factory default (incl. physical address). Subsequently, the LEDs change their status.

# 6 APPLICATION DESCRIPTION LINE COUPLER

With the coupler receiving physically addressed telegrams (Physical telegrams), for example during commissioning, it compares the physical address of the receiver with its own physical address to decide whether to route the telegrams or not. On receiving telegrams with group addresses (Group telegrams) the coupler proceeds in accordance with its parameter settings. At default setting the coupler only routes those telegrams whose group addresses have been entered in its filter table.

In case of not receiving an acknowledgement after routing a telegram, due to a bus transmission error for example, the coupler repeats the telegram up to three times (depending on the corresponding parameter that is set by ETS). With the parameters "Repetitions if errors …" this function can be adjusted separately for both connected lines. The default settings of these parameters should be retained.

# 7 ETS-PARAMETERS LINE COUPLER

All screenshots in this document describing ETS parameters represent the **MEC***tp* 's database entry in the ETS5.

### 7.1 Settings

In the properties window the basic settings of the **MEC***tp* can be adjusted and checked. Under the Settings tab the device name and the physical address (individual address) can be changed/downloaded to the device.

Properties	Properties >
Settings Comments Information	Settings Comments Information
Name MECtp Line coupler	Application Catalog
Individual Address       15.15     Park       Description	ManufacturerApplicationLine couplerDevice Type\$2000Program Version1.0CertificationRegisteredFingerprintD6C9
ProductLine couplerProgramLine couplerLast Modified07.07.2016 11:37Last Downloaded-Serial Number-	Change Application Program Line coupler

Picture 3a: Properties/Settings

Picture 3b: Properties/Information

configured "Line as coupler", the application program for "Line coupler" has to be downloaded to the device. Under the Information tab this configuration can be changed by the menu "Change Application Program". After changing the configuration the filter table entries can be added manually. Also updating the application program can be done here.

not

already

When

## 7.2 GENERAL

15.15.0 MECtp Line coupler > General			
General	Fallback time for manual operation	1 hour	-
Main line	Manual function	pass all telegrams	•
Sub line			

#### Picture 4: General

ETS-Text	Selection [Factory default]	Comment
Fallback time for manual operation	10 min, 1 hour, 4 hours, 8 hours [ <b>1 hour</b> ]	After this time period the "Manual Function" is switched off automatically.
Manual function	disabled pass all telegrams pass physical telegrams pass group telegrams [ <b>pass all telegrams</b> ]	Telegram routing configuration for the "Manual Function".

### $7.3 \; \text{Main Line}$

15.15 MECtp Line coupler > Main line			
General	Configuration	groups,physical: filter	•
Main line	Group telegrams	filter	Ŧ
Sub line	Group relegions		
	Main group telegrams 14 / 15	transmit all	Ŧ
	Physical telegrams	filter	Ŧ
	Physical: Repetition if errors on main line	normal	Ŧ
	Group: Repetition if errors on main line	normal	Ŧ
	Telegram confirmations on line	if routed	Ŧ
	Send confirmation on own telegrams	no	Ŧ

Picture 5: Main line configuration

#### **Important note:**

The parameter "transmit all" for Group telegrams or Physical telegrams is intended only for testing purposes. This setting should not be used during normal operation.

EIS-lext	Selection	Comment
	[Factory default]	
	groups: filter physical: block	- <u>Block</u> : no telegram is routed.
	groups, physical: filter	- <u>Filter</u> . Only telegrams are fould which
	groups; route, physical: filter	Route: the telegrams are routed
Configuration	groups, noute, physical: miler	- Configure: the following parameters can
	configure	be set manually.
	[groups, physical: filter]	This parameter is to be set depending on the
		planed configuration.
	1. transmit all	1. All group telegrams are transmitted.
	(not recommended)	2. No group telegram is transmitted.
Group telegrams	2. block	3. Only Group telegrams entered in the filter
	3. filter	table are routed.
	[filter]	ETS3/4 produces the filter table automatically.
Main man	1. transmit all	1. Group telegrams with the sub group 14 or 15 $(2 - 14/1)$ are rested
Main group	2. block	(e.g. $14/1$ ) are routed.
telegrams 14/15	[transmit all]	2. Group telegrams with the sub group 14 of 15 $(a, a, 14/1)$ are not routed
	1 transmit all	
	(not recommended)	1. All Physical telegrams are transmitted.
Physical telegrams	2. block	2. No Physical telegram is transmitted.
	3. filter	3. Depending on the physical address only
	[filter]	Physical telegrams are routed.
		If a transmission error (e.g. due to missing
		receiver) is found after sending a Physical
Dhave a sl	1. no	telegram on the main line:
Physical:	2 normal	1 Physical telegrams are not repeated
Repetition when		2. Di i i i i
Repetition when errors on main line	3. reduced	2. Physical telegrams are repeated up to three
Repetition when errors on main line	3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only.</li> </ol>
Repetition when errors on main line	3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once</li> </ol>
Repetition when errors on main line	3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol>
Repetition when errors on main line	3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group</li> </ol>
Repetition when errors on main line	2. normal 3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:</li> </ol>
Group:	2. normal 3. reduced [normal] 1. no 2. normal	<ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> </ol> </li> </ol>
Group: Repetition when errors on main line	2. normal 3. reduced [normal] 1. no 2. normal 3. reduced	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three</li> </ol> </li> </ol>
Group: Repetition when errors on main line	2. normal 3. reduced [normal] 1. no 2. normal 3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> </ol> </li> </ol>
Group: Repetition when errors on main line	2. normal 3. reduced [normal] 1. no 2. normal 3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only</li> </ol> </li> </ol>
Group: Repetition when errors on main line	2. normal 3. reduced [normal] 1. no 2. normal 3. reduced [normal]	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol> </li> </ol>
Group: Repetition when errors on main line Group: Repetition when errors on main line Telegram	2. normal 3. reduced [normal] 1. no 2. normal 3. reduced [normal] 1. if routed	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol> </li> <li>Only telegrams which are to be routed are</li> </ol>
Friysteal: Repetition when errors on main line Group: Repetition when errors on main line Telegram confirmations on	<ul> <li>2. normal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. no</li> <li>2. normal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. if routed</li> <li>2. always</li> </ul>	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol> </li> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>Only telegrams which are to be routed are confirmed on the main line (ACK).</li> </ol>
Friysteal: Repetition when errors on main line Group: Repetition when errors on main line Telegram confirmations on line	<ul> <li>2. hormal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. no</li> <li>2. normal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. if routed</li> <li>2. always</li> <li>[if routed]</li> </ul>	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol> </li> <li>Only telegrams which are to be routed are confirmed on the main line (ACK).</li> <li>Each telegram on the main line is confirmed</li> </ol>
Physical:         Repetition when         errors on main line         Group:         Repetition when         errors on main line         Telegram         confirmations on         line	<ul> <li>2. hormal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. no</li> <li>2. normal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. if routed</li> <li>2. always</li> <li>[if routed]</li> </ul>	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol> </li> <li>Only telegrams which are to be routed are confirmed on the main line (ACK).</li> <li>Each telegram on the main line is confirmed (ACK).</li> </ol>
Physical: Repetition when errors on main line Group: Repetition when errors on main line Telegram confirmations on line	<ul> <li>2. hormal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. no</li> <li>2. normal</li> <li>3. reduced</li> <li>[normal]</li> <li>1. if routed</li> <li>2. always</li> <li>[if routed]</li> <li>1. yes</li> </ul>	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams are repeated only once.</li> </ol> </li> <li>Only telegrams will be repeated only once.</li> <li>Only telegrams which are to be routed are confirmed on the main line (ACK).</li> <li>Each telegram on the main line is confirmed (ACK).</li> <li>Every telegram on the main line is confirmed with its own ACK (from the Line coupler).</li> </ol>
Group: Repetition when errors on main line Group: Repetition when errors on main line Telegram confirmations on line Send confirmation on own telegrams	2. normal 3. reduced [normal] 1. no 2. normal 3. reduced [normal] 1. if routed 2. always [if routed] 1. yes 2. no	<ol> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:         <ol> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are not repeated.</li> <li>Physical telegrams are repeated up to three times.</li> <li>Physical telegrams will be repeated only once.</li> </ol> </li> <li>Only telegrams which are to be routed are confirmed on the main line (ACK).</li> <li>Each telegram on the main line is confirmed (ACK).</li> <li>Every telegram on the main line is confirmed with its own ACK (from the Line coupler).</li> <li>No confirmation with own ACK</li> </ol>

### Please note:

If the parameter "Send confirmation on own telegrams" is set to <u>yes</u> the line coupler will send an ACK systematically on any own routed telegram.

## 7.4 SUB LINE

15.15.0 MECtp Line coupler > Sub line			
General	Configuration	configure	•
Main line	Group telegrams	filter	*
Sub line	C.h	terrentali	
	Sub group telegrams 14 / 15	transmit all O block	
	Physical telegrams	filter	*
	Physical: Repetition if errors on sub line	normal	•
	Group: Repetition if errors on sub line	normal	•
	Telegram confirmations on line	if routed always	
	Send confirmation on own telegrams	🔘 yes 🖲 no	

Picture 6: Sub line configuration

ETS-Text	Selection [Factory default]	Comment	
Configuration	groups: filter, physical: block groups, physical: filter groups: route, physical: filter groups, physical: route configure [groups, physical: filter]	<ul> <li>Block: no telegram is routed.</li> <li>Filter: only telegrams are routed which are entered in the filter table.</li> <li>Route: the telegrams are routed.</li> <li>Configure: the following parameters can be set manually.</li> </ul>	
Group telegrams Group telegrams 1. transmit all (not recommended) 2. block 3. filter [filter]		<ol> <li>All group telegrams are transmitted.</li> <li>No group telegram is transmitted.</li> <li>Only group telegrams entered in the filter table are routed.</li> <li>ETS3/4 produces the filter table automatically.</li> </ol>	
Sub group telegrams 14/151. transmit all 2. block [transmit all]		<ol> <li>Group telegrams with the sub group 14 or 15 (e.g. 14/1) are routed.</li> <li>Group telegrams with the sub group 14 or 15 (e.g. 14/1) are not routed.</li> </ol>	
Physical telegrams       1. transmit all (not recommended)         2. block         3. filter         [filter]		<ol> <li>All Physical telegrams are transmitted.</li> <li>No Physical telegram is transmitted.</li> <li>Depending on the physical address only Physical telegrams are routed.</li> </ol>	
Physical: Repetition if errors on the sub line occur	1. no 2. normal 3. reduced [normal]	<ul> <li>If a transmission error (e.g. due to missing receiver) is found after sending a physical telegram on the main line:</li> <li>1. Physical telegrams are not repeated.</li> <li>2. Physical telegrams are repeated up to three times.</li> <li>3. Physical telegrams will be repeated only once.</li> </ul>	



Group: Repetition if errors on the sub line occur	1. no 2. normal 3. reduced [ <b>normal</b> ]	<ul><li>If a transmission error (e.g. due to missing receiver) is found after sending a group telegram on the main line:</li><li>1. Physical telegrams are not repeated.</li><li>2. Physical telegrams are repeated up to three times.</li><li>3. Physical telegrams will be repeated only once.</li></ul>
Telegram confirmations on line	<ol> <li>if routed</li> <li>always</li> <li>[if routed]</li> </ol>	<ol> <li>Only telegrams which are to be routed are confirmed on the sub line (ACK).</li> <li>Each telegram on the sub line is confirmed (ACK).</li> </ol>
Send confirmation on own telegrams	1. yes 2. no <b>[no]</b>	<ol> <li>Every telegram on the sub line is confirmed with its own ACK (from the Line coupler).</li> <li>No confirmation with own ACK</li> </ol>

# 8 APPLICATION DESCRIPTION LINE REPEATER

Line repeaters do not use a filter table. A received telegram is routed to all lines irrespective of in which line it is processed. It is therefore not important whether the telegram is triggered within a line or whether it is sent from an upper line to a lower line via a coupler.

When an error occurs during transmission of a telegram according to the physical address of a receiver the line repeater is able to repeat the telegram. With the parameters "Physical: Repetition if errors on main line/on sub line" this function can be set separately for both lines.

In case of routing a group telegram with not receiving an acknowledgement or in case of a bus device detecting a transmission error the line repeater repeats the telegram three times. With the parameters "Group: Repetition if errors on main line/on sub line" this function can be adjusted separately for both lines.

## 9 ETS-PARAMETERS LINE REPEATER

### 9.1 Settings

In the properties window the basic settings of the **MEC***tp* can be adjusted and checked. Under the Settings tab the device name and the physical address (individual address) can be changed and downloaded to the device.

Properties	Properties >
Settings Comments Information	Settings Comments Information
Name	Application Catalog
MECtp Line repeater	
Individual Address	Manufacturer
15.15 0 🗘 Park	Application Line repeater
Description	Device Type \$2001
Description	Program Version 1.0
	Certification Registered
	Fingerprint 2386
Product Line coupler	Change Application Program
Program Line repeater	Line repeater 🔹
Last Modified 07.07.2016 14:21	Update Application Program Version
Last Downloaded -	Update
Serial Number -	

Picture 7a: Properties/Settings

Picture 7b: Properties/Information

When already not configured "Line as repeater", the application program for "Line repeater" has to be downloaded to the device. Under the Information tab this configuration can be changed by the menu "Change Application Program". After changing the configuration the filter table entries can be added manually. Also updating the application program can be done here.



### 9.2 GENERAL

15.15.0 MECtp Line repeater > General			
General	Fallback time for manual operation	1 hour	•
Main line	Manual function	pass all telegrams	•
Sub line			

#### Picture 8: General

ETS-Text	Selection [Factory default]	Comment
Fallback time for manual operation	10 min, 1 hour, 4 hours, 8 hours [ <b>1 hour</b> ]	After this time period the "Manual Function" is switched off automatically.
Manual function	disabled pass all telegrams pass physical telegrams pass group telegrams [ <b>pass all telegrams</b> ]	Telegram routing configuration for the "Manual Function".

### $9.3 \; M \text{ain Line}$

15.15.0 MECtp Line repeater > Main line			
General	Configuration	groups, physical: route Configure	
Main line	Telegrammi fisici	transmit all	Ŧ
Sub line	Physical: Repetition if errors on main line	reduced	Ŧ
	Group: Repetition if errors on main line	reduced	Ŧ
	Telegram confirmations on line	always	Ŧ
	Send confirmation on own telegrams	yes	Ŧ

Picture 8: Main line configuration

#### **Important note:**

The parameter "transmit all" for Group telegrams or Physical telegrams is intended only for testing purposes. This setting should not be used during normal operation.

ETS-Text	Selection [Factory default]	Comment	
Configuration	groups, physical: route configure [groups, physical: route]	<ul> <li><u>Route</u>: the telegrams are routed.</li> <li><u>Configure</u>: the following parameters can be set manually.</li> </ul>	
Physical telegrams	1. transmit all 2. block [transmit all]	<ol> <li>All Physical telegrams are transmitted.</li> <li>No Physical telegram is transmitted.</li> </ol>	
Physical: Repetition when errors on main line	1. no 2. normal 3. reduced [ <b>reduced</b> ]	<ul> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Physical telegram on the main line:</li> <li>1. Physical telegrams are not repeated.</li> <li>2. Physical telegrams are repeated up to three times.</li> <li>3. Physical telegrams will be repeated only once.</li> </ul>	
Group: Repetition when errors on main line	1. no 2. normal 3. reduced [reduced]	<ul> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Group telegram on the main line:</li> <li>1. Physical telegrams are not repeated.</li> <li>2. Physical telegrams are repeated up to three times.</li> <li>3. Physical telegrams will be repeated only once.</li> </ul>	
Telegram confirmations on line	1. if routed 2. always [always]	<ol> <li>Only telegrams which are to be routed are confirmed on the main line (ACK).</li> <li>Each telegram on the main line is confirmed (ACK).</li> </ol>	
Send confirmation on own telegrams	1. yes 2. no [ <b>yes</b> ]	<ol> <li>Every telegram on the main line is confirmed with its own ACK (from the Line coupler).</li> <li>No confirmation with own ACK → See note below.</li> </ol>	

#### Please note:

If the parameter "Send confirmation on own telegrams" is set to <u>yes</u> the line repeater will send an ACK systematically on any own routed telegram. With the repeater using no filter table it is useful to send an ACK with every routed telegram.



### 9.4 SUB LINE

15.15.0 MECtp Line repeater > Sub line			
General	Configuration	groups, physical: route Configure	
Main line	Physical telegrams	transmit all	Ŧ
Sub line	Physical: Repetition if errors on sub line	reduced	Ŧ
	Group: Repetition if errors on sub line	reduced	Ŧ
	Telegram confirmations on line	always	Ŧ
	Conditionation on sum talenname		
	Send confirmation on own telegrams	yes	Ŧ

Picture 9: Sub line configuration

ETS-Text	Selection [Factory default]	Comment
Configuration	groups, physical: route configure [groups, physical: route]	- Route:       the telegrams are routed.         - Configure:       the following parameters can be set physically.
Physical telegrams	1. transmit all 2. block [transmit all]	<ol> <li>All physical telegrams are transmitted.</li> <li>No physical telegram is transmitted.</li> </ol>
Physical: Repetition if errors on the sub line occur	1. no 2. normal 3. reduced [ <b>reduced</b> ]	<ul> <li>If a transmission error (e.g. due to missing receiver) is found after sending a Physical telegram on the main line:</li> <li>1. Physical telegrams are not repeated.</li> <li>2. Physical telegrams are repeated up to three times.</li> <li>3. Physical telegrams will be repeated only once.</li> </ul>
Group: Repetition if errors on the sub line occur	1. no 2. normal 3. reduced [ <b>reduced</b> ]	<ul> <li>If a transmission error (e.g. due to missing receiver) is found after sending a group telegram on the main line:</li> <li>1. Physical telegrams are not repeated.</li> <li>2. Physical telegrams are repeated up to three times.</li> <li>3. Physical telegrams will be repeated only once.</li> </ul>
Telegram confirmations on line	1. if routed 2. always [always]	<ol> <li>Only telegrams which are to be routed are confirmed on the sub line (ACK).</li> <li>Each telegram on the sub line is confirmed (ACK).</li> </ol>
Send confirmation on own telegrams	1. yes 2. no [yes]	<ol> <li>Every telegram on the sub line is confirmed with its own ACK (from the Line coupler).</li> <li>No confirmation with own ACK</li> </ol>

# 10 TECHNICAL DATA

Warning: device may not be connected to 230V!

Marking/Design	MECtp		
Current consumption	< 30 mA		
Connections	<ul> <li>KNX main line: KNX bus WAGO connector (red/black), screwless for single-core cable Ø 0.60.8 mm</li> <li>KNX sub line: KNX bus WAGO connector (red/black), screwless for single-core cable Ø 0.60.8 mm</li> </ul>		
Display elements	LED Bus state Main LED Bus traffic Main LED Group Address (GA) LED Programming	LED Bus state Sub LED Bus traffic Sub LED Physical Address (PA)	
Control elements	Function button, Programming button		
Mounting	35 mm top-hat rail (TH35) according to IEC60715		
Protection type	IP20 according to IEC60529		
Pollution degree	2 according to IEC60664-1		
Protection class	III according to IEC61140		
Overvoltage category	III according to IEC60664-1		
Approbation	KNX-certified according to ISO/IEC14543-3		
CE-Marking	According to low voltage and EMC guidelines Device complies with EN50581, EN50491-5, EN60669, and EN61000-6		
Power supply	Safety extra low voltage, 2130V DC (SELV), Main Line		
Housing colour	Plastic PA66 housing grey		
Dimensions	H = 94  mm, W = 36  mm (2  modules), D = 71  mm Mounting depth = 64 mm		
Weight	66 g		
Device temperature	Working temperature: -545 °C Storage temperature: -2060 °C		
Ambient humidity	593 %, non-condensing		

# 11 TECHNICAL DRAWINGS

All dimensions shown here are specified in mm. The device width is 2 modules at 18 mm.



Dimensions in mm Tolerance: -0,5 mm/DIN 16742

Picture 10: Dimension drawings

# Apricum

# 12 LEGAL NOTICE

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