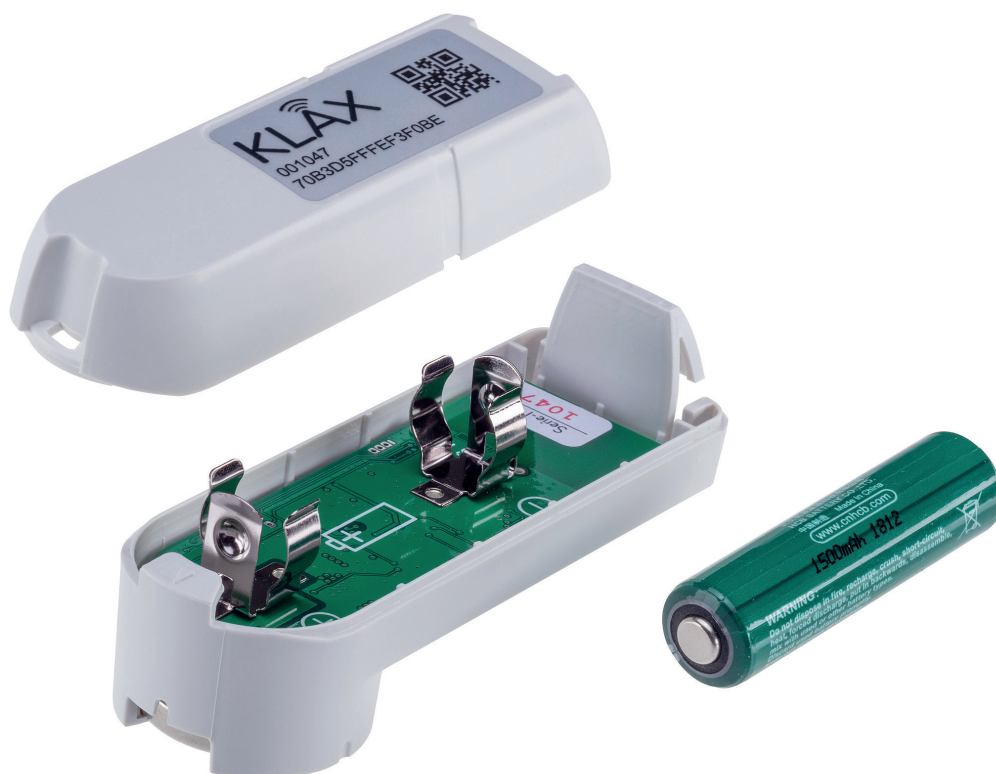


# KLÄX

## Payloadbeschreibung

Version 1.0.0.



# IR-Head Stromzähler

## Payload Beschreibung

Der IR Head unterstützt Uplink und Downlinks in den folgenden Ports:

- **PORT 3:** APP Uplink/Downlink
- **PORT 100:** CONFIG Uplink/Downlink
- **PORT 101:** INFO Uplink/Downlink
- **PORT 103:** REG SEARCH Uplink/Downlink
- **PORT 104:** REG SET Uplink/Downlink

Alle Uplinks beinhalten den gleichen genauen „Header“ (siehe die ersten beiden **orange-farbenen Bytes** in den folgenden Definitionen).

## Uplink Port 3 APP

2  
MESSAGE INDEX  
Uint8

Byte Nr	Function	Remarks
0	Payload Version	Uint8
1	Status	Bit0-3 -> Battery Stand (From 0 to 10 in 10% Steps) Bit4-5 -> <ul style="list-style-type: none"><li>• 00 for SML</li><li>• 01 for IEC 62056-21 Mode B</li><li>• 02 for IEC 62056-21 Mode C</li><li>• 03 for Logarex</li></ul> Bit6 -> Registers configured (1 TRUE, 0 FALSE) Bit7 -> CONNECTION TEST (1 TRUE, 0 FALSE)
3	MESSAGE X/Y	4 MSBs -> Message Number 4 LSBs -> Total Messages
14	Payload ID	Uint8
15 - X	Payload DATA	See chapters <a href="#">PAYLOAD IDs</a> for more details
X+1 - Y	Payload ID	Uint8
Y+1 - Z	Payload DATA	See chapters <a href="#">PAYLOAD IDs</a> for more details

(und so weiter)

# PAYLOAD IDs

Payload ID	Function	Structure	Size in Bytes w/ ID
01	Register Filtering ID (enough place for 2 registers, sent twice if 4 registers set)	<ul style="list-style-type: none"> <li>1 Byte: REGISTER MASK (which registers are being sent) <ul style="list-style-type: none"> <li>Bit 0 -&gt; REGISTER FILTER POSITION 1 ACTIVE</li> <li>Bits 1-2 -&gt; REGISTER FILTER POSITION 1 SELECTOR <ul style="list-style-type: none"> <li>00 -&gt; REGISTER FILTER 1</li> <li>01 -&gt; REGISTER FILTER 2</li> <li>10 -&gt; REGISTER FILTER 3</li> <li>11 -&gt; REGISTER FILTER 4</li> </ul> </li> <li>Bit 3 -&gt; LAST FETCHED DATA POS 1 VALID</li> <li>Bit 4 -&gt; REGISTER FILTER POSITION 2 ACTIVE</li> <li>Bits 5-6 -&gt; REGISTER FILTER POSITION 2 SELECTOR <ul style="list-style-type: none"> <li>00 -&gt; REGISTER FILTER 1</li> <li>01 -&gt; REGISTER FILTER 2</li> <li>10 -&gt; REGISTER FILTER 3</li> <li>11 -&gt; REGISTER FILTER 4</li> </ul> </li> <li>Bit 7 -&gt; LAST FETCHED DATA POS 2 VALID</li> </ul> </li> <li>1 Byte: REGISTER UNITS <ul style="list-style-type: none"> <li>4 LSBs -&gt; UNIT FOR REGISTER POSITION 1</li> <li>4 MSBs -&gt; UNIT FOR REGISTER POSITION 2</li> </ul> </li> </ul> <p>DEFINED UNITS:</p> <ul style="list-style-type: none"> <li>0 -&gt; NDEF*</li> <li>1 -&gt; Wh*</li> <li>2 -&gt; W*</li> <li>3 -&gt; V*</li> <li>4 -&gt; A*</li> <li>5 -&gt; Hz*</li> </ul> <p>- 4 Bytes: REGISTER FILTER POSITION 1 – CONTENT NOW</p> <p>- 4 Bytes: REGISTER FILTER POSITION 1 – CONTENT NOW – 1 MEAS INTERVAL*</p> <p>- 4 Bytes: REGISTER FILTER POSITION 1 – CONTENT NOW – 2 MEAS INTERVAL*</p> <p>- 4 Bytes: REGISTER FILTER POSITION 1 – CONTENT NOW – 3 MEAS INTERVAL*</p> <p>- 4 Bytes: REGISTER FILTER POSITION 2 – CONTENT NOW</p> <p>- 4 Bytes: REGISTER FILTER POSITION 2 – CONTENT NOW – 1 MEAS INTERVAL*</p> <p>- 4 Bytes: REGISTER FILTER POSITION 2 – CONTENT NOW – 2 MEAS INTERVAL*</p> <p>- 4 Bytes: REGISTER FILTER POSITION 2 – CONTENT NOW – 3 MEAS INTERVAL*</p> <p>ALL ZEROS IF INVALID READ</p>	35

02	Registers NOW	<p>-1 Byte: REGISTER MASK  <b>Bit 0: REGISTER FILTER 1 SET</b>  <b>Bit 1: REGISTER FILTER 2 SET</b>  <b>Bit 2: REGISTER FILTER 3 SET</b>  <b>Bit 3: REGISTER FILTER 4 SET</b>  <b>Bit 4: REGISTER FILTER 1 VALID</b>  <b>Bit 5: REGISTER FILTER 2 VALID</b>  <b>Bit 6: REGISTER FILTER 3 VALID</b>  <b>Bit 7: REGISTER FILTER 4 VALID</b></p> <ul style="list-style-type: none"> <li>• 1 Byte: REGISTER UNITS  4 LSBs -&gt; UNIT FOR REGISTER FILTER 1  4 MSBs -&gt; UNIT FOR REGISTER FILTER 2  <b>DEFINED UNITS:</b> <ul style="list-style-type: none"> <li>• 0 -&gt; NDEF*</li> </ul> </li> <li>• 1 -&gt; Wh</li> <li>• 2 -&gt; W</li> <li>• 3 -&gt; V*</li> <li>• 4 -&gt; A*</li> <li>• 5 -&gt; Hz*</li> </ul> <ul style="list-style-type: none"> <li>• 1 Byte: REGISTER UNITS  4 LSBs -&gt; UNIT FOR REGISTER FILTER 3  4 MSBs -&gt; UNIT FOR REGISTER FILTER 4  <b>DEFINED UNITS:</b> <ul style="list-style-type: none"> <li>• 0 -&gt; NDEF*</li> </ul> </li> <li>• 1 -&gt; Wh</li> <li>• 2 -&gt; W</li> <li>• 3 -&gt; V*</li> <li>• 4 -&gt; A*</li> <li>• 5 -&gt; Hz*</li> </ul> <ul style="list-style-type: none"> <li>• 4 Bytes: REGISTER FILTER 1 – CONTENT NOW</li> <li>• 4 Bytes: REGISTER FILTER 2 – CONTENT NOW</li> <li>• 4 Bytes: REGISTER FILTER 3 – CONTENT NOW</li> <li>• 4 Bytes: REGISTER FILTER 4 – CONTENT NOW</li> </ul> <p><b>ALL ZEROS IF INVALID READ</b></p>	20
03	Server ID	<p>-10 Bytes: ID  MSB First ID for SML:  AA-BB-CC-DD-EE-FF-00-11-22-11 (SERVER ID)  MSB First unsigned integer for IEC-62056-21:  34562123 -&gt; (DEVICE ID)  <b>ALL ZEROS IF INVALID READ</b></p>	11

## Downlink Port 3 APP

Byte Nr	Function	Remarks
0	CONNECTION TEST	VALUE MUST BE TRUE -> an value != 0x00

Beachten Sie, dass Änderungen in den Einstellungen erst beim nächsten Uplink wirksam werden (aufgrund der Klasse A, RX nur nach dem Senden).

**WICHTIG:** Eine CONNECTION TEST-Nachricht sendet eine Payload-ID 02 (Register NOW, siehe Kapitel PAYLOAD IDs).

## UPLINK PORT 100 CONFIG

Byte Nr	Function	Remarks
0	Payload Version	Uint8
1	Status	Bit0-3 -> Battery Stand (From 0 to 10 in 10% Steps) Bit4-5 -> <ul style="list-style-type: none"> <li>• 00 for SML</li> <li>• 01 for IEC 62056-21 Mode B</li> <li>• 02 for IEC 62056-21 Mode C</li> <li>• 03 for Logarex</li> </ul> Bit6 -> Registers configured (1 TRUE, 0 FALSE) Bit7 -> CONNECTION TEST (1 TRUE, 0 FALSE)
2-3	CONFIG MEAS INTERVAL	Time in minutes (0 to 50000, unsigned MSB First)

## DOWNLINK PORT 100 CONFIG

Byte Nr	Function	Remarks
0-1	CONFIG MEAS INTERVAL	Time in minutes (0 to 50000, unsigned MSB First)

## UPLINK PORT 101 INFO

Byte Nr	Function	Remarks
0	Payload Version	Uint8
1	Status	Bit0-3 -> Battery Stand (From 0 to 10 in 10% Steps) Bit4-5 -> <ul style="list-style-type: none"> <li>• 00 for SML</li> <li>• 01 for IEC 62056-21 Mode B</li> <li>• 02 for IEC 62056-21 Mode C</li> <li>• 03 for Logarex</li> </ul> Bit6 -> Registers configured (1 TRUE, 0 FALSE) Bit7 -> CONNECTION TEST (1 TRUE, 0 FALSE)
2	APP Main Version	Uint8
3	APP Minor Version	Uint8

## DOWNLINK PORT 101 INFO

Byte Nr	Function	Remarks
0	GET DEVICE INFO	VALUE MUST BE TRUE -> any value != 0x00

## UPLINK PORT 103 REGISTER SEARCH

Byte Nr	Function	Remarks
0	Payload Version	UInt8
1	Status	Bit0-3 -> Battery Stand (From 0 to 10 in 10% Steps) Bit4-5 -> <ul style="list-style-type: none"> <li>• 00 for SML</li> <li>• 01 for IEC 62056-21 Mode B</li> <li>• 02 for IEC 62056-21 Mode C</li> <li>• 03 for Logarex</li> </ul> Bit6 -> Registers configured (1 TRUE, 0 FALSE) Bit7 -> CONNECTION TEST (1 TRUE, 0 FALSE)
2	MESSAGE INDEX	UInt8
3	MESSAGE X/Y	4 MSBs -> Message Number 4 LSBs -> Total Messages
4-6	Register 1	Example -> If Register A -> 1.8.0 BYTE 4 -> 1 (uint8 value, max 255) BYTE 5 -> 8 (uint8 value, max 255) BYTE 6 -> 0 (uint8 value, max 255) When last element is 0, both 1.8.0 and 1.8 are searched
7-9	Register 2	Example -> If Register B -> 2.8.0 BYTE 4 -> 2 (uint8 value, max 255) BYTE 5 -> 8 (uint8 value, max 255) BYTE 6 -> 0 (uint8 value, max 255) When last element is 0, both 2.8.0 and 2.8 are searched
X-Y	Register X	Example -> If Register C -> 16.1 BYTE 4 -> 16 (uint8 value, max 255) BYTE 5 -> 1 (uint8 value, max 255) BYTE 6 -> 0 (uint8 value, max 255) When last element is 0, both 16.1.0 and 16.1 are searched

## DOWNLINK PORT 103 REGISTER SEARCH

Byte Nr	Function	Remarks
0	SEARCH REGISTERS	VALUE MUST BE TRUE -> any value != 0x00

## UPLINK PORT 104 REGISTER SET

Byte Nr	Function	Remarks
0	Payload Version	UInt8
1	Status	Bit0-3 -> Battery Stand (From 0 to 10 in 10% Steps) Bit4-5 -> <ul style="list-style-type: none"> <li>• 00 for SML</li> <li>• 01 for IEC 62056-21 Mode B</li> <li>• 02 for IEC 62056-21 Mode C</li> <li>• 03 for Logarex</li> </ul> Bit6 -> Registers configured (1 TRUE, 0 FALSE) Bit7 -> CONNECTION TEST (1 TRUE, 0 FALSE)
2	ACTIVE FILTERS	Bit0 -> REGISTER FILTER 1 SET (1 TRUE, 0 FALSE) Bit1 -> REGISTER FILTER 2 SET (1 TRUE, 0 FALSE) Bit2 -> REGISTER FILTER 3 SET (1 TRUE, 0 FALSE) Bit3 -> REGISTER FILTER 4 SET (1 TRUE, 0 FALSE) Bits 4-7 -> reserved for future use
3-5	REGISTER FILTER 1	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a>
6-8	REGISTER FILTER 2	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a>
9-11	REGISTER FILTER 3	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a>
12-1	REGISTER FILTER 4	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a>

# DOWNLINK PORT 104 REGISTER SET

Byte Nr	Function	Remarks
0	ACTIVE FILTERS	Bit0 -> REGISTER FILTER 1 SET (1 TRUE, 0 FALSE) Bit1 -> REGISTER FILTER 2 SET (1 TRUE, 0 FALSE) Bit2 -> REGISTER FILTER 3 SET (1 TRUE, 0 FALSE) Bit3 -> REGISTER FILTER 4 SET (1 TRUE, 0 FALSE) Bits 4-7 -> reserved for future use
1-3	REGISTER FILTER 1	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a> <b>IMPORTANT -&gt; Filter must always be filled from 1 to 4!</b>
4-6	REGISTER FILTER 2	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a> <b>IMPORTANT -&gt; Filter must always be filled from 1 to 4!</b>
7-9	REGISTER FILTER 3	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a> <b>IMPORTANT -&gt; Filter must always be filled from 1 to 4!</b>
10-12	REGISTER FILTER 4	For formatting info, see <a href="#">Uplink Port 103 REGISTER SEARCH</a> <b>IMPORTANT -&gt; Filter must always be filled from 1 to 4!</b>

Beachten Sie, dass Änderungen in den Einstellungen erst beim nächsten Uplink wirksam werden (aufgrund von Klasse A, RX erst nach dem Senden).

## Ablaufdiagramm Start

