



# HarvyLR

## Self-powered LoRaWAN IoT sensor for AC and DC currents (battery-free!)

### Application

HarvyLR is a LoRaWAN sensor for two major areas of application:

- comfortable acquisition of RMS currents in any electrical main or sub-distribution or directly at the machine etc.; the deZem current transformers with a suitable plug-in contact are used for this purpose;
- easy acquisition of 4–20 mA analog signals from any source, perfect for widely distributed factory halls, building complexes or outdoor areas.

Unlike common IoT sensors, the HarvyLR **does not require any battery or external power supply**. The highly innovative electronics of this special deZem development feeds the sensor from the measurement signal without any impact on its values.

A signal current (AC or DC) of only 0.15 mA on average is sufficient to record and send metering values every 10 minutes. With higher input currents, higher data rates are possible.

### Two HarvyLR variants

- **HarvyLR-36:** for deZem clamp-on current transformers (max. 25 mA AC) or 4–20 mA DC input signals
- **HarvyLR-360:** as HarvyLR-36, but for max. 250mA AC or 360 mA DC signals;

Even several current transformers can be combined with a single HarvyLR, e.g. for parallel supply lines of an electrical phase (see page 2).

### Advantages

- compatible with deZem current transformers for up to 500 A
- also suitable for any 4–20 mA DC output signal
- very easy set-up; no wired installation
- no external power supply or integrated battery required
- compact design
- completely maintenance-free
- can be used with deZem IoT platform or any other LoRaWAN platform
- intelligent event filter integrated, which leads to metering series (inrush currents, etc.) accurate to the second
- configuration and updates via Bluetooth

Combined with a LoRaWAN gateway (see also [LoRaWAN Flyer](#)), an entire building or site can be monitored with a large variety of sensors in a very short time. With the optional deZem IoT platform, their metering series are immediately available online for all further purposes.

Download the HarvyLR JS decoder for free:

[Download \(.txt\)](#)

HarvyLR accessories  
Current transformers,  
adapter for 4–20 mA input and  
USB charging adapter



### Technical Data

**Power supply**  
Self-powered

**Max. Input currents**  
HarvyLR-36: 36 mA DC; 25 mA AC  
HarvyLR-360: 360 mA DC; 250 mA AC

**Connections**  
1x JST-socket, suitable for  
deZem clamp-on current transformers

**IoT protocol**  
LoRaWAN v1.0.3, Class A Device,  
EU863-870 Mhz

**Dimensions**  
HxWxD: 22x69x49 mm  
Weight: 50 g  
Mounting: freely suspended or fixed by  
cable tie

**Operating conditions**  
Temperature: 0–55 °C  
Humidity: 30–60 %  
Protection type: IP 20

**Transport conditions**  
Temperature: -10–55 °C  
Humidity: 20–70 %

**Required software**  
HarvyLR JS decoder, free of charge

Subject to technical changes  
Version 1.6, February 2023

**deZem**  
sense | check | act

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## Choosing the HarvyLR variant and the suitable clamp-on current transformer

Choosing the HarvyLR variant and the corresponding deZem clamp-on current transformer depends on the maximum expected primary current and the wire diameter (including insulation).

Please note that the HarvyLR constantly requires a minimum primary current according to the following table to send data without interruption.

Select the deZem current transformer according to the expected max. primary current and wire diameter:

Type of current transformer	Max. primary current [A]		Min. primary current [A]	Nominal secondary current [mA]	Current ratio	Max. wire diameter [mm]	Max. wire cross-sect. [mm²]	Scale factor deZemAd
	HarvyLR-360	HarvyLR-36						
			Clamp-on current transformer					
T80	80	50	0.8	40	2000	5.6	25	2
T80/26,6	80	75	1	26.7	3000	5.6	25	3
T150/40	150	94	1	40	3750	8	50	3.75
T300	300	30	0.9	250	1200	13.8	150	1.2
T300/40	300	188	1.6	40	7500	13.8	150	7.5
T500	500	50	0.8	250	2000	19.5	300	2
T500/40	500	312	2.8	40	1250	19.5	300	12.5
4–20 mA analog signals								0.001

### Would you like to measure the total current of several supply lines?

It is also possible to measure the total current of several supply lines<sup>1)</sup> of the same phase, preferably using the HarvyLR-360 in combination with appropriate Y-connectors (available from deZem).

These can be connected to two or more deZem clamp-on current transformers<sup>2)</sup>.

When used correctly, the outputs of several transformers add up.

If you have any questions, please contact us! We will be happy to assist.



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<sup>1)</sup> Please note the max. measurable primary current.

<sup>2)</sup> The clamp-on current transformers must be of the same type. The sum of the secondary current must not exceed the max. permissible input current of the selected HarvyLR variant.