Configurability and Flexibility of Models MK30LP / MK30R

Model MK30LP (Low Profile) For Continuous Measurement

The normal **MK30LP SINGLE** delivery contains a single sensing head containing all electronics. The **DUAL** version has two heads connected with a pair of cables. One of them has the controlling role and contains most of the electronics. The second head contains only a fraction of that. The MK30LP head is very thin (Low Profile) of about 15 mm in thickness. The moisture range is fairly limited to normal dry end values in paper mills (3 - 20%) depending on basis weight (BW g/m2).

Model MK30R Portable Meter

The normal **MK30R** delivery is an independently working portable meter. It has the sensing head, keyboard, display and battery support integrated into one portable unit. The options for it are related to the moisture range and the head size. The **Regular** head is versatile and has a very wide moisture range. Its -W option has still a wider range capable of measuring pure water to 7 000 g/m2 or thick wet pulp to up to 25 000 g/m2.

Flexibility of Electronics and Software

The algorithms used in both models are extremely flexible in cavity frequency range. The system can be reconfigured in a few minutes for a completely different cavity and ready to be operated. This is the core of our microwave business. Since the algorithms are flexible, the MK30LP electronics can be fitted to any cavity Visilab manufactures and more in the future. This offers a great advantage in configuring a new system without having to reinvent the electronics nor software. Actually, the low level electronics in the two models **MK30R** and **MK30LP** are the same and they **always** run the same embedded software. The MK30LP has as options: **Datastream protocol** pushing out a continuous ASCII data stream and reacting to a few commands and a **packet protocol** with a wide range of commands. It is also able to deliver four analog outputs reflecting the levels of the signals. The MK30LP electronics consumes only about 3 W of power and therefore needs usually no cooling.

Model MK30LP Tailored

The MK30LP electronics can be equipped with a **Regular** head and the system is placed to a new application-dependent enclosure. One can also have an MK30LP with a display / keyboard by adding the K3x core.

Software Support

The **MK30LP** PC program and its simplified version **MK30LPSimple**, support the use of the **MK30LP** meter but not the model **MK30R**. The model **MK30R** can use any of the other moisture meter programs available, like **AK30**, **AK30Mini**, **ATOM**, **Advanced** etc. The command sets used in the communications protocols are slightly different between the models.

On the following pages the flexibility is shown in some configurations by indicating the internal structures and options available in building a system.

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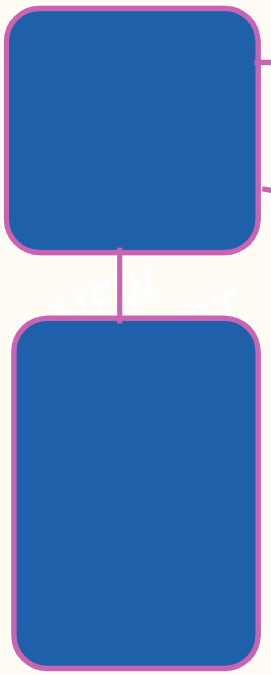
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Relation between the units MK30LP and MK30R

MK30LP and MK30LP-CUBE

MK30LP electronics core K5x



Analog outputs, scale and offset adjustable

RS232/RS485 communications / packet protocol

The MK30LP has its own calibration library and all configuration data available for optional use.

Laptop with MK30LP program

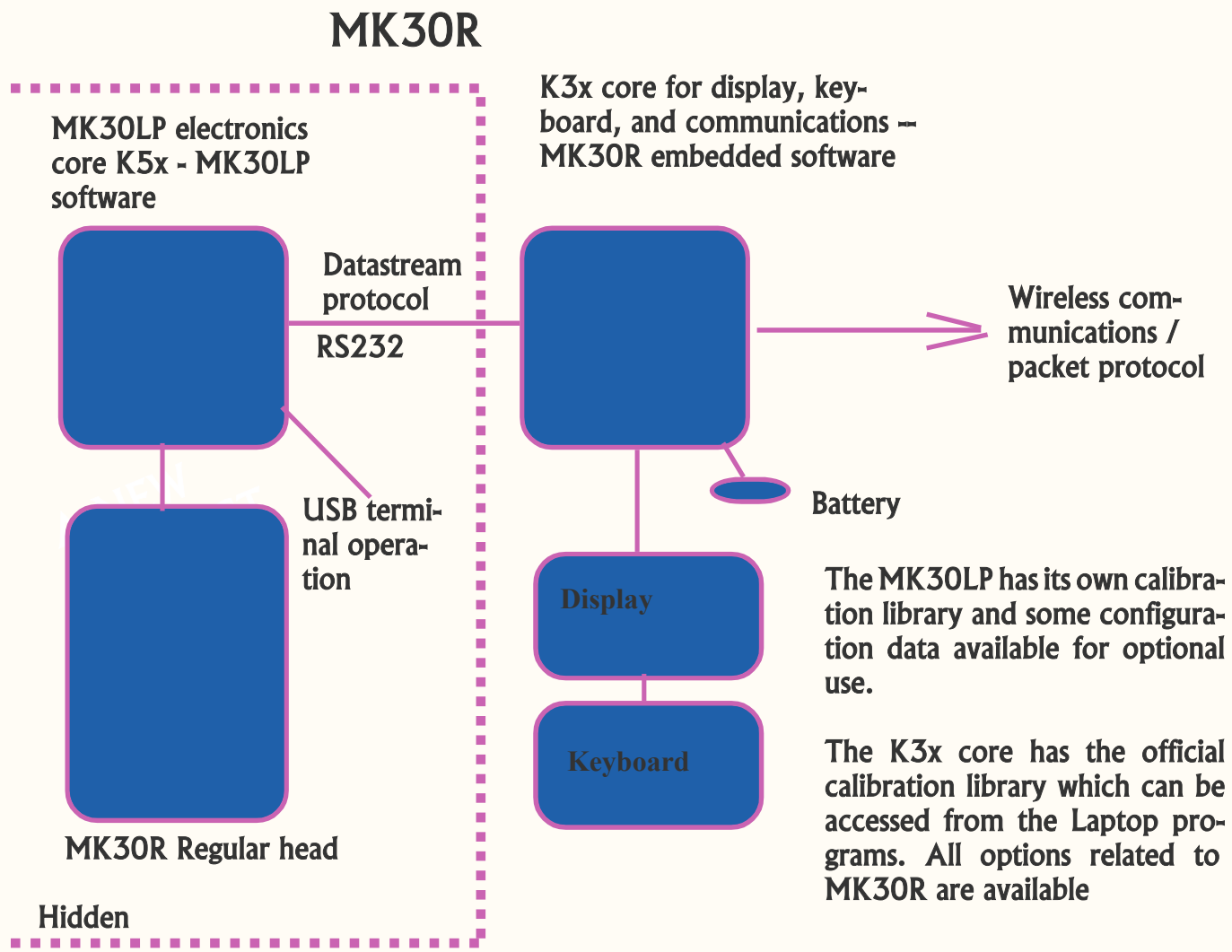


RS232-USB dongle 115200 bauds, 9600 (long cables) or 230 000 bauds (very short cables) opt.

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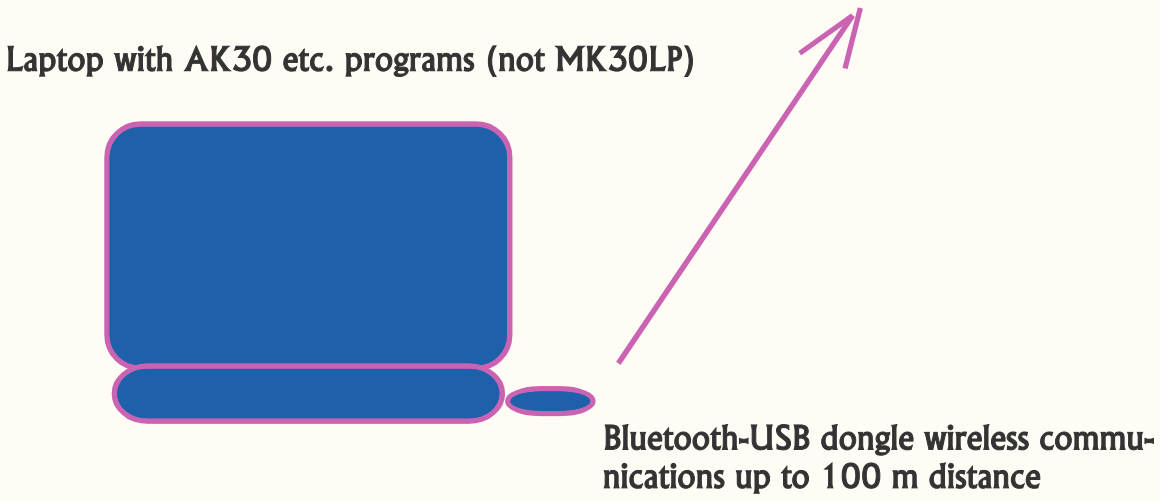
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Relation between the units MK30LP and MK30R



The MK30LP has its own calibration library and some configuration data available for optional use.

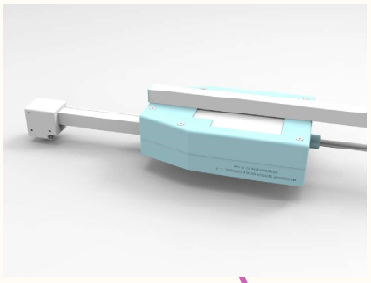
The K3x core has the official calibration library which can be accessed from the Laptop programs. All options related to MK30R are available



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Normal MK30LP SINGLE setup



RS232/RS485

A NEW PRODUCT

One meter address

Power supply 9 - 24 V

MK30LP is an on-line meter capable of making measurements continuously. It will send data after receiving a command from the laptop. It does not save any of the data. MK30LP has its own calibration library and other configuration data.

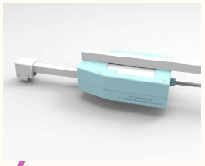
Laptop with MK30LP program

RS232-USB dongle

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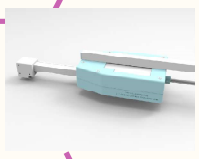
Normal MK30LP DUAL setup



RF-cable

Analog
outputs (4)

Slave unit 2



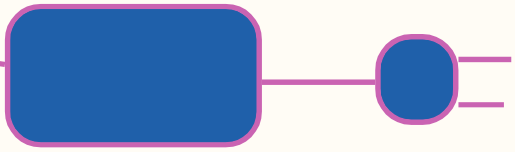
Master unit 1

RS232/RS485

One meter address

A NEW PRODUCT

Power supply 9 - 24 V



The DUAL meter can measure two sensors at a time and pass the data to the Laptop. MK30LP has its own calibration library and other configuration data. Each sensor has its own entry in the calibration library and each sensor is configured independently, just like they were independent meters.

Laptop with MK30LP program



RS232-USB dongle 115200 bauds, 9600 (long cables) or 230 000 bauds (very short cables) opt.

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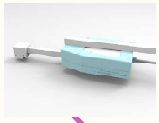
Multiple MK30LP DUALsetup

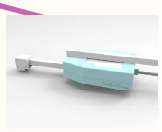
Master unit #3

RF-cable

Slave unit #4

Analog outputs (4)





Address = 2

RS485

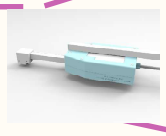
Multiple DUAL meters can measure with two sensors at a time each and pass the data to the Laptop. They each have their own calibration library and other configuration data. Each sensor has its own entry in the calibration library and each sensor is configured independently. This can be done with the MK30LP software by selecting the primary slave address.

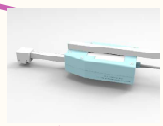
Master unit #1

Slave unit #2

Analog outputs (4)

RF-cable





Address = 1

One unique meter address per each MK30LP in the range 1...127

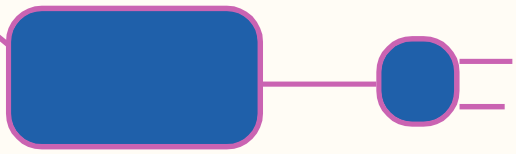
RS485 115200 bauds, 9600 or 230 000 bauds opt.

LAN485

LAN485 unit or equivalent. It is capable of supplying power to the sensors

Laptop with MK30LP program





Power supply 24 V 3 A

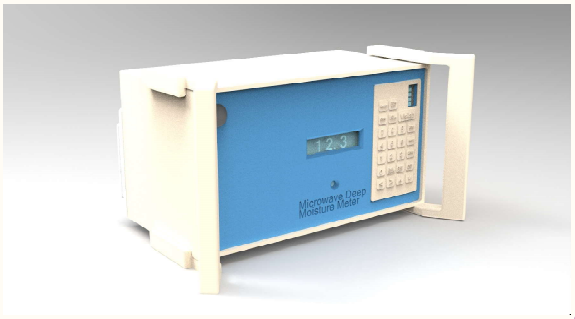
RS232-USB dongle. It can be Bluetooth or RS485 too connected to LAN485

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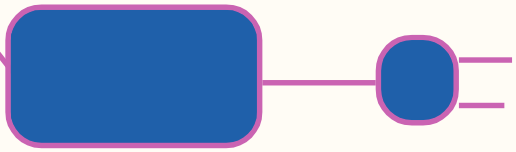
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Normal MK30R setup.

MK30R



A NEW PRODUCT



Power supply 9 - 24 V
for battery charging

MK30R is a self-contained unit capable of making measurements for up to seven hours before recharging. It can save data series to its internal nonvolatile memory. It has the calibration library accessible from the Laptop programs.

Laptop with AK30 etc. programs

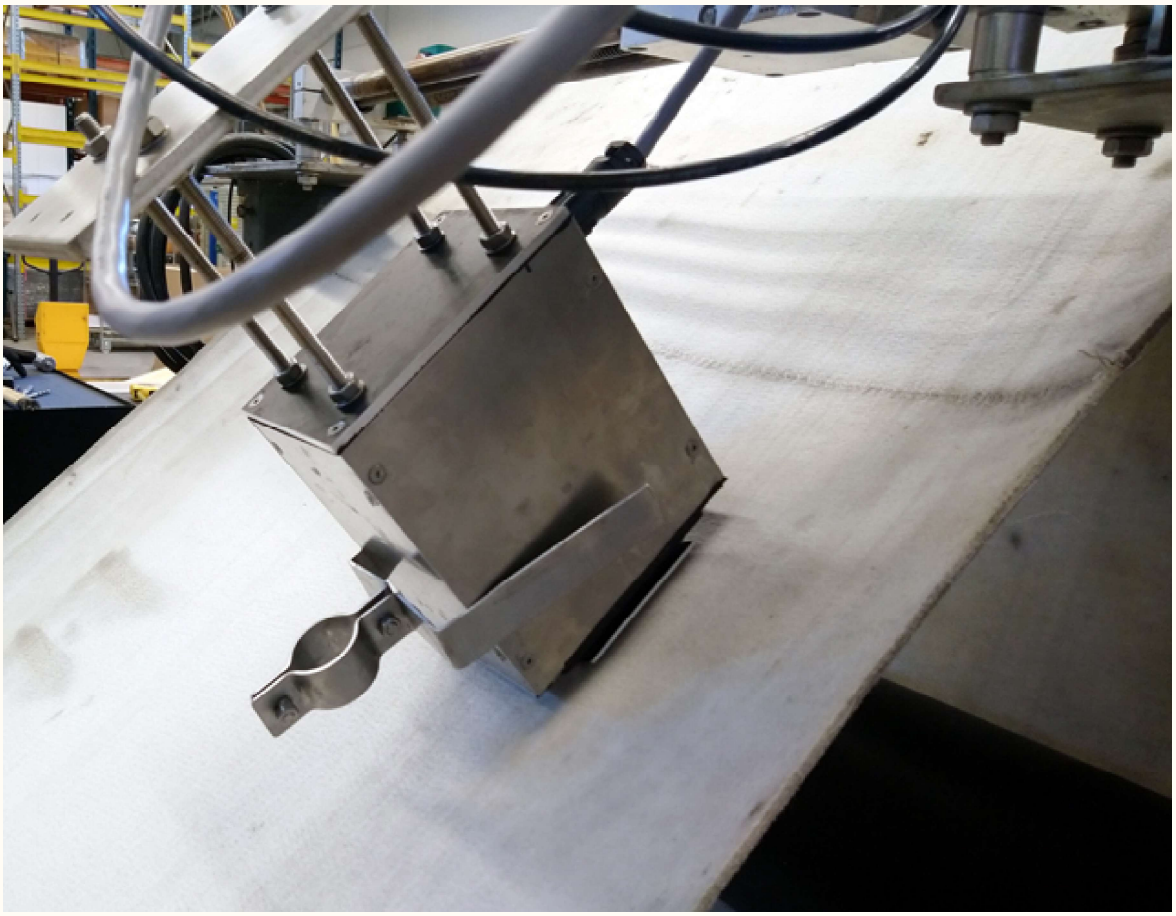


Bluetooth-USB dongle wireless communications up to 100 m

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MK30LP-CUBE



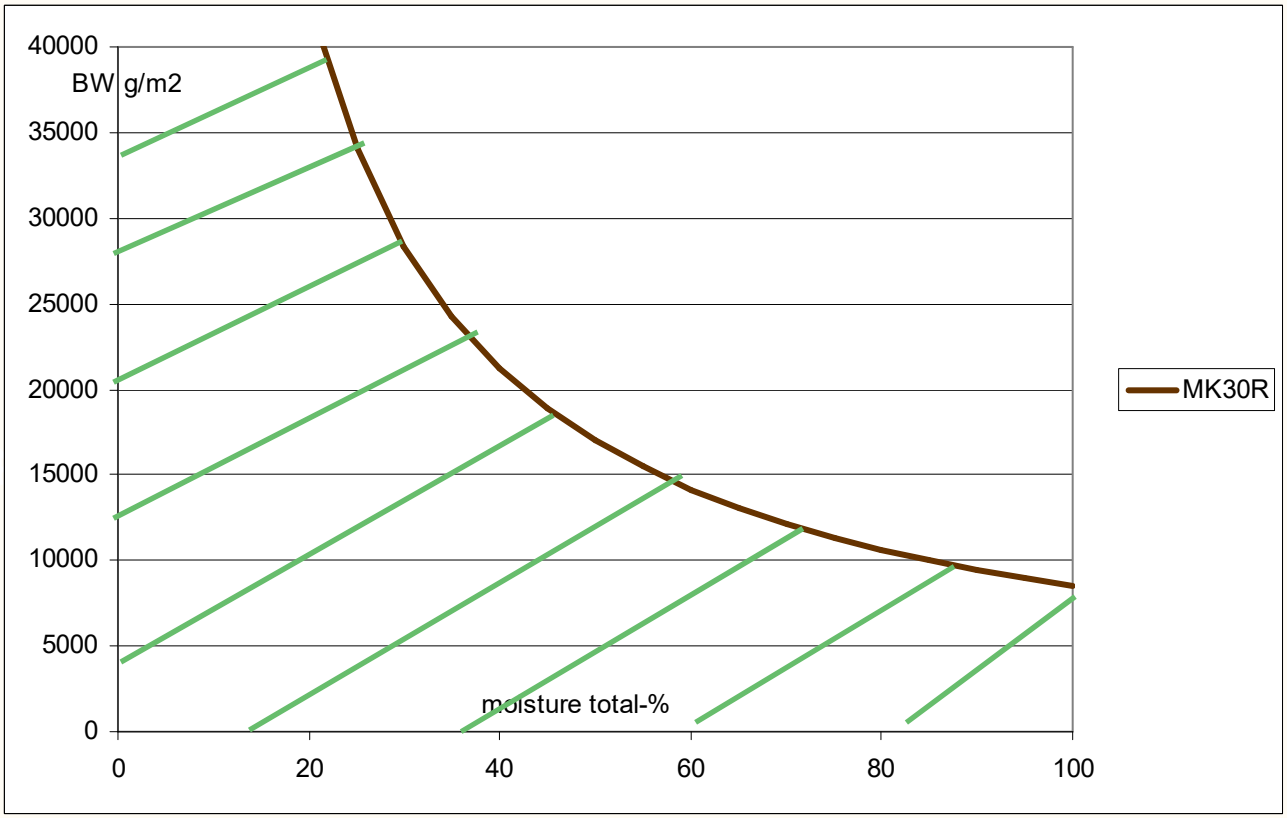
The MK30LP-CUBE can send out the data via the analog interface and to the Laptop with RS232



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Approximate safe operating regions for MK30R and MK30LP-CUBE



MK30R can be tailored for specific targets by optimizing some of its internal parameters. New sensing cavities can be designed according to application.

The **MK30LP** operation regions are wider but penetration is only 5 mm

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