

## Is HyQuest Solutions' PreciBal suitable and applicable in precipitation monitoring networks consisting of OTT Pluvio<sup>2</sup>L instruments?

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### Introduction

The HS PreciBal is an all-weather precipitation gauge that uses superior weight-based technology to measure the amount and intensity of rain, snow, and hail according to WMO Guide-line No8. Developed in conjunction with industry-leading meteorological services, the HS PreciBal employs a high-precision hermetically sealed load cell and algorithms that compensate for wind, temperature and evaporation, ensuring the highest accuracy on precipitation measurements with life-time calibration and long-term stability.

### Measured Parameters and product features

- **Liquid and solid precipitation data:** Cumulative precipitation, precipitation intensity, bucket content in real time and non-real time with a delay of 2 minutes
- **High precision measurements:** 1 % accuracy at entire intensity range up to 2000 mm/h by direct physical measurement of the weight-increase of falling rain and solid precipitation by composed additional anti-freeze agent
- **Reliable measurement:** High data availability and precise data for accumulation and intensity readings through applied filter algorithms to compensate for wind, temperature, and evaporation
- **Virtually maintenance-free operation:** MTBF of 100 years, lifetime factory calibration, drift-free measurements, hermetically sealed load cell and robust protective housing for reduced numbers of field visits to result in low total costs of ownership
- **Multiple communication interfaces:** SDI-12, RS-485, and Pulse Output in compliance data loggers from HyQuest or any other Third-Party data loggers
- **Low power consumption:** wide power supply ranging from 5 to 24 VDC and low power consumption of only 20 mW for low cost solar power packages.
- **Sites without mains power:** Middle size Solar power package or battery options make the instrument ideal for remote locations also in combination with implemented intelligent power save heater modes like hysteresis-based temperature control methods at solid precipitation and temperature ranges.
- **Innovative and smart monitoring and configuration:** Easy to use via low power Bluetooth communication and APP for IOS and Android for wireless communication with smart-phone or tablet

### User benefits by features, second source and form-fit-function towards OTT Pluvio<sup>2</sup>L

The instrument design and construction, interfaces and precipitation output parameter of both instruments are very similar and comparable as well such as internal measuring algorithm, filter methods and applied compensation against temperature, vibration and long term stability induced errors.

Usually customers and users do prefer to qualify two instruments from different manufacturers for one precipitation monitoring network just to have a second source for maintenance purposes. Also some user

can benefit from some of the specific properties and features of the HS PreciBal such as highest sensitivity and lowest thresholds, ultra-low power consumption, Bluetooth communication and MODBUS or even pricing advantages.

All OTT NetDL users can utilize easily the implemented HS PreciBal function by SDI-12 command Xmsg to configure and emulate the SDI-12 data string according OTT Pluvio<sup>2</sup> format and sequence. HS PreciBal can be connected to OTT NetDL with OTT Pluvio<sup>2</sup> settings and configuration in the existing network in terms of communication, messaging and evaluation Software without any further change as second source instrument for extension or direct replacement.

## User benefits by features

	OTT Pluvio <sup>2</sup> L 200	HS PreciBal 200
Intensity data – Real Time	Threshold: 0,1 mm/min Accuracy: +- 6 mm/h or +- 1%	Threshold: 0,025 mm/min Accuracy: +- 1,5 mm/h or +- 1%
Cumulative Precipitation – Non-real time data NRT	Sensitivity: 0,05 mm/h Accuracy: +- 0,1 mm or +- 1% NRT: 5 Min Delay	Sensitivity: 0,025 mm/h Accuracy: +- 0,025 mm or +- 1% NRT: 2 Minutes
SDI-12 Command M0/M1	Data string according User guide	Configurable data string to emulate OTT Pluvio <sup>2</sup> L data string by command Xmsg
MODBUS	Not available	Set via APP
Access for monitoring and configuration	Via USB port and cable and Computer under Windows	Via Bluetooth, wireless, through smart-phone tablet, under OS IOS and Android
Sensor monitoring and configuration	OTT Pluvio <sup>2</sup> operating program	APP PreciBal
Instrument height for 100 cm measuring height mounted onto 4" pole, 260 mm	740 mm with integrated 4" pole mount	650 mm plus 90 mm 3 Point/4" adapter HS 334M to result in total height of 740 mm
Mounting	4" poles	4" poles or 2" poles
Wind shield	OTT PWS as Alter Wind Shield	HS PWS as Alter or Tretyakow Wind Shield
Versions for 200 cm <sup>2</sup> orifice	OTT Pluvio <sup>2</sup> L-200-RH	HS PreciBal 200-RH
Other versions and orifices	OTT Pluvio <sup>2</sup> L 400-RH (cm <sup>2</sup> )	HS PreciBal 314-RH (cm <sup>2</sup> )
Power consumption	160 mW	20 mW
Calibration	Reference weight	Reference weight or Volume if water by HS FCD