EVAS – Class A pan evaporimeter

(Rev.2 010616)

Description

EVAS is a sensor that measures the water evaporation caused by the effect of surface temperature, solar radiation and wind.
This measure is carried out in accordance with the WMO (World Meteorological Organization guidelines) using a collection Class A pan filled with water and laid on a special open-frame wooden platform.
Inside the tank it's immersed a sensor with high precision that detects the variations of water level providing in this way the measurement of water evaporation.

The whole evaporimetric measurement system consists of the following parts:

1. AISI 304 Stainless steel pan with reinforced bottom with triple casing that keeps the bath raised from the base; the tank is equipped with filler neck closure plug for the drain and overflow hole which defines the maximum permissible level in the pan (200mm)
2. Impregnated larch platform, treated with protective coatings to make the basement completely waterproof. The deck is constituted by a double weft of strips of thickness from 6cm to ensure a natural ventilation of the steel bath
3. Protection tube for housing of immersion hydrometer that also serves as the well of calm to avoid any transients caused by water ripples;
4. High accuracy piezometric sensor made with a pressure transducer relative (with vented tube for atmospheric pressure compensation) temperature compensated. The sensor is available with analog output 4...20mA with two-wire connection (other outputs on request). The hydrometer used has a content consumption and the possibility of auto-off: in this way the sensor is ideal for low-power systems powered by solar panels.

Advantages

- ✓ Very high precision
- ✓ Integrated protection against overvoltage and reverse polarity
- ✓ Protection class: IP 68
- ✓ Compact and robust housing structure
- ✓ Measurement stability with temperature compensation

Main applications

- ✓ Hydrometry and Hydrogeology
- ✓ Agro-meteorology
- ✓ Irrigation Equipment
- ✓ Dams and Reservoirs
- ✓ Landfills

SLP-EVAS level transducer

Technical data

Model	SLP-EVAS
Measurement Range	0…30mBar
Transducer	Capacitive with integrate polynomial temperature compensation
Output	4…20mA
Power and load	Power supply: 8...28Vdc; Load (Ohm): < (U - 8 V) / 0,02 A
Accuracy (tra 10…50°C)	<0,1% f.s.
Stability	±0,1mm
Temperature Compensation	10…50°C
Response Time	≤1s

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Overpressure	300mBar
Working Temperature	0…+80°C
Cable	Shielded multipolar cable L=2m with vented tube for atmospheric pressure compensation. Included IP65 junction box
Housing and cell	AISI 316 L stainless steel
Overall dimension and weight	Ø38 x 60mm, 400g (cable included)

Accessories and spare parts

CSD12	Shielded cable L=12m for outdoor with IP68 connector. Other available lenghts: 4, 22, 32m
PGL-EVAS	Larch wooden platform treated with impregnant paint, overall dim. 125x125x11cm, 40kg
VSC-EVAS	Class A Pan, made of AISI304 stainless steel, WMO answering. Int.dim. ø1207x h254mm, 30kg

Positioning and operations in sequence for mounting of the measuring system

a) Make sure that the deck is resting on a firm, flat surface so that the tank remains lifted from the ground of at least 5cm is ensured natural ventilation. The evaporimeter location must be away from trees and buildings that might shade the tank or make depositing debris.

b) With a spirit level check the wooden deck is perfectly horizontal otherwise add shims under the platform.

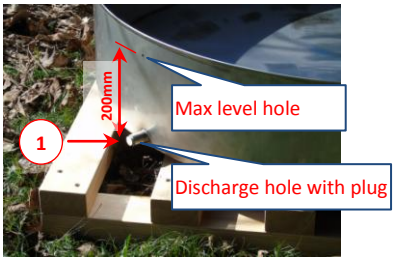
c) Lay the steel tank above the deck so that all its circumference remains within the perimeter of the deck.

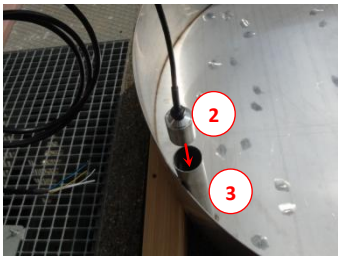
d) Make sure the plug ① of discharge hole is securely closed, then fill the water tank until it reaches the max level hole.

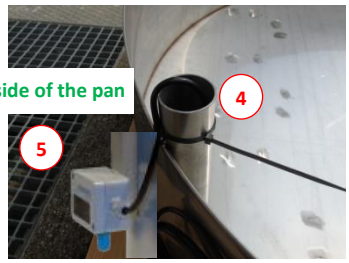
e) Lower the level sensor ② slowly in the tube housing ③ until the sensor comes into abutment on the bottom of the tank; secure the sensor cable to the tube with a plastic band ④ verifying that the sensor has been remaining on the bottom

f) Fix the junction box ⑤ with another plastic band so that it remains outside the tank and raised by the wooden platform.

g) Connect the cable logger / sensor to the junction box connector







Electrical Connection

Sensore model	**SLP-EVAS**
Output	**4…20mA** (where 4mA=0mm; 20mA=306mm)
Resistive shunt load	50…250Ω (tip.100Ω)
IP68 Connector on the sensor 	Pin1: Iout+ Pin2: Pin3: Pin4: Gnd Pin5: +Vdc (8…28Vdc)

Maintenance and tank refilling

The refilling of the tank must be done when the level measure drop under 50mm. Fill the pan up to the achievement of the Max level hole.

During the refilling phase verify that inside there is no debris (eg. Leaves, feathers, etc. ...) and remove them. If in the bottom there are sand depositions, earth or mud, unscrew the cap of the exhaust nozzle ① then rinse the tank with a water jet.

It is recommended to fence off the evaporimeter so that animals cannot get into the bath or drink the water.

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