

# Operating Manual for Hay Measuring Probe

## electronic 0120



### Specification:

<b>Measuring range:</b>	-20.0 ... +120.0 °C
<b>Resolution:</b>	0.1 °C
<b>Accuracy:</b>	± 2 °C (at nominal temperature)
<b>Probe connection:</b>	connection cable, approx. 3m long with Cinch plug and adapter connection GAD-1 Cinch
<b>Measuring rod:</b>	fibre glass probe, approx. 4 m long, approx. 10 mm Ø, 1 measuring point in the tip of the probe
<b>OPTION:</b>	fibre glass probe, 6 m long
<b>Cutter tip:</b>	double-edged screw-type tip with integrated temperature sensor
<b>Display:</b>	3½-digits, 13mm high LCD-display
<b>Nominal temperature:</b>	25 °C
<b>Working temperature:</b>	0 to 50 °C
<b>Relative humidity:</b>	0 to 95 % r.h. (non condensing)
<b>Storage temperature:</b>	-10 to 60 °C
<b>Current supply:</b>	separate current supply for measuring part and illumination
Meas. part:	9 V-battery (1 off), type IEC 6F22 (included in scope of supply)
Illumination:	1.5 V Mignon-battery (2 off), type IEC R6 (included in scope of supply)
<b>Battery service life:</b>	meas. part: approx. 200 operating hours illumination: approx. 50 - 100 operating hours (depending on battery type)
<b>Dimensions (device):</b>	approx. 160 x 90 x 45 mm.
<b>Weight:</b>	approx. 480 g (cpl. with battery)



### Safety requirements:

This device has been designed and tested in accordance with the safety regulations for electronic devices.

However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advises given in this manual will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if it is not subjected to any other climatic conditions than those stated under "Specification".
2. If the device is transported from a cold to a warm environment condensation may result in a failure of the function. In such a case make sure the temperature of the device has adjusted to the ambient temperature before trying a new start-up.
3. If device is to be connected to other devices the circuitry has to be designed most carefully.
4. If there is a risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.  
Operator safety may be a risk if:
  - there is visible damage to the device
  - the device is not working as specified
  - the device has been stored under unsuitable conditions for a longer time.

In case of doubt, please return device to manufacturer for repair or maintenance.



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## **Storage, transport:**

- Measuring rod:
- Screw-on/plug on safety covers.
  - Do not damage the flat polished surface with pointed objects and do not step on measuring rod.
  - When rolling up the measuring rod the diameter of the coil must not be smaller than approx. 1m.
  - Do not roll measuring rod for storage.
  - Make it a rule to always transport and handle the measuring probe carefully.
  - Do not thrust or throw probe during transport and operation.
- Meas. device, tip:
- Make it a rule to always store the measuring device and its tip in the corresponding measuring device case.
  - We recommend to store the device in a dry room under normal temperature conditions.
  - Do not subject measuring device to an ambient temperature exceeding 60° C.
  - When device will not be used for a longer period of time remove batteries.

## **Preparations for measuring, measuring process:**

Unroll measuring rod extra carefully to avoid bounding up as well as any resulting injuries. Screw cutting edge onto measuring rod and tighten by hand. Use connection cable to plug measuring device onto measuring rod. Put protective plug into case for storage.

Place tip in the correct direction and insert rod into measuring object by means of several short thrusts (approx. 20 cm). Do not use violence! Buckling of the measuring rod will lead to its being broken. If possible do not turn the measuring rod as this may result in the cutting edge coming off.

The temperature can be read off immediately. If temperature values are changing rapidly we recommend to leave the probe at the measuring point until there are only slight temperature changes (watch most carefully as of 45°C)

Attention: fire risk as of 70°C! Call fire brigade and take suitable steps to minimise the fire hazard!

## **Maintenance and special advise:**

- Make sure the cutting edge is always sharpened.
  - Keep thread and socket plug clean (put on safety covers immediately after use)
  - Do not throw or thrust measuring device.
  - Use clean and dry piece of cloth to wipe clear-vision screen.
  - Put measuring device back into its storage case after use.
  - We recommend checking/replacing the batteries prior to the beginning of harvest. Battery compartment is easily accessible from the outside. Use finger nail to open cover. First remove the 9V block, then push out the two 1.5 V Mignon batteries. Insert new batteries (1.5 V batteries first). Make sure polarity is correct! Reinsert foam material.
  - To avoid any injuries whatsoever by bounding of the measuring rod, always make it a rule to roll it up most carefully.
- Please note that proper handling and storage is your own responsibility !

## **Malfunctions:**

If there is no display, check batteries and make sure battery cable has not been torn when changing the batteries.

Incorrect display although measuring device and measuring rod have been properly connected:

Display approx. -150.0°C: defective meas. rod/insertion tip, short-circuit in cable  
 Display 1. : defective meas. rod/insertion tip, interruption in cable

To find fault, check measuring device without plug being connected:

Display approx. -150.0°C: short-circuit in connection cable

Display 1. : connection cable and device functioning provided a value of approx.  
 - 150.0°C is displayed when the metal ring and the pin of the plug are connected by means of a metal piece.