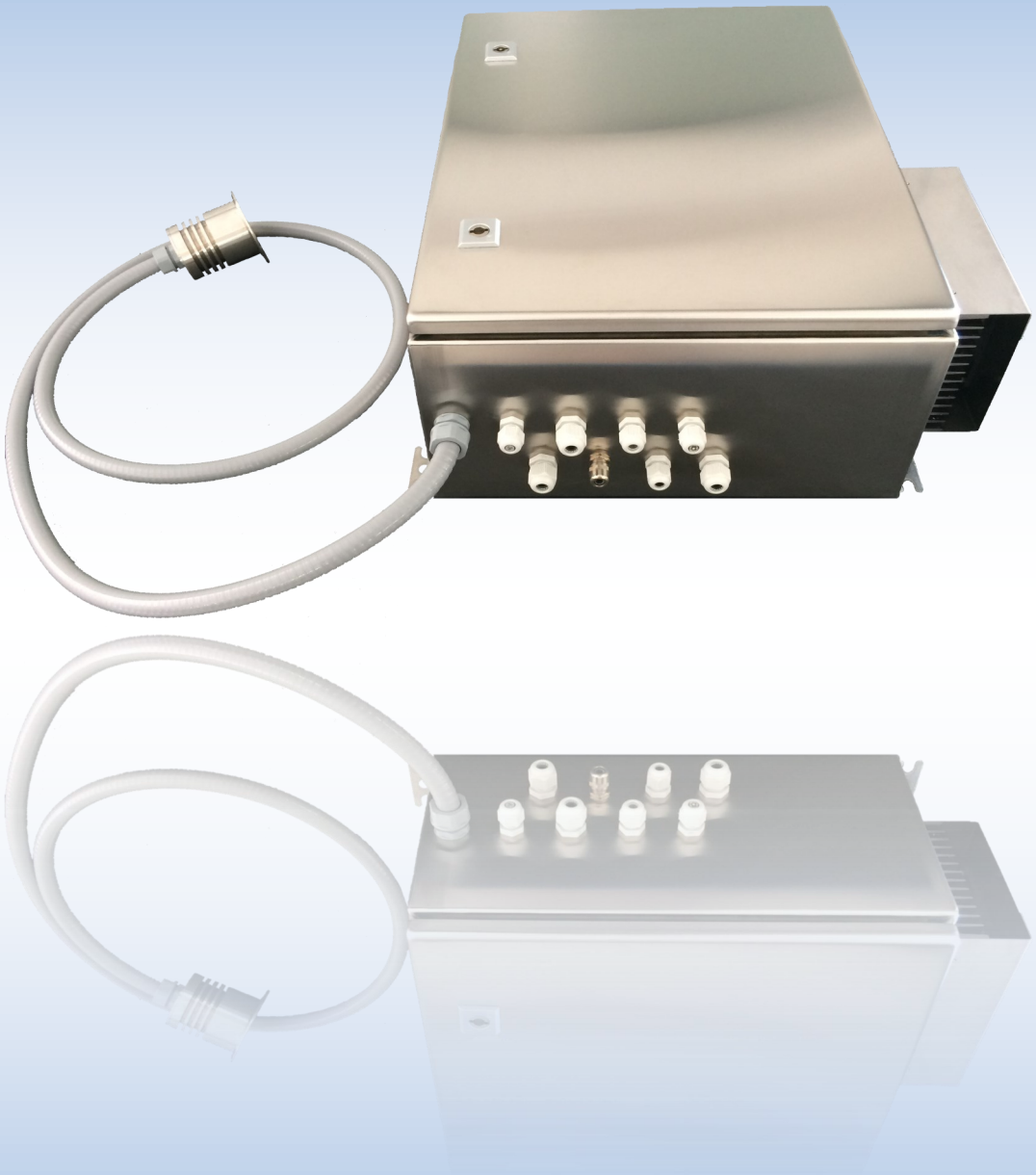
HK4

MORTON CONTROLS
INSTRUMENTATION & PROCESS CONTROL

NIR– In-Line measurement device
For continues measurement of organic components



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Description:

The HK4 is an NIR- (Near- Infrared) In- Line measurement device with state- of- the- art technology. Which can measure all organic components in solids like meat and in liquids with different viscosities like milk, oil.

The HK4 can be installed at pipelines, tanks / vessels, cutters, mincer, etc..

With only one measurement you can measure simultaneously valuable components like fat, protein, lactose, solids content, etc. for the dairy industry and fat, protein, collagen, water, etc. for the meat industry.

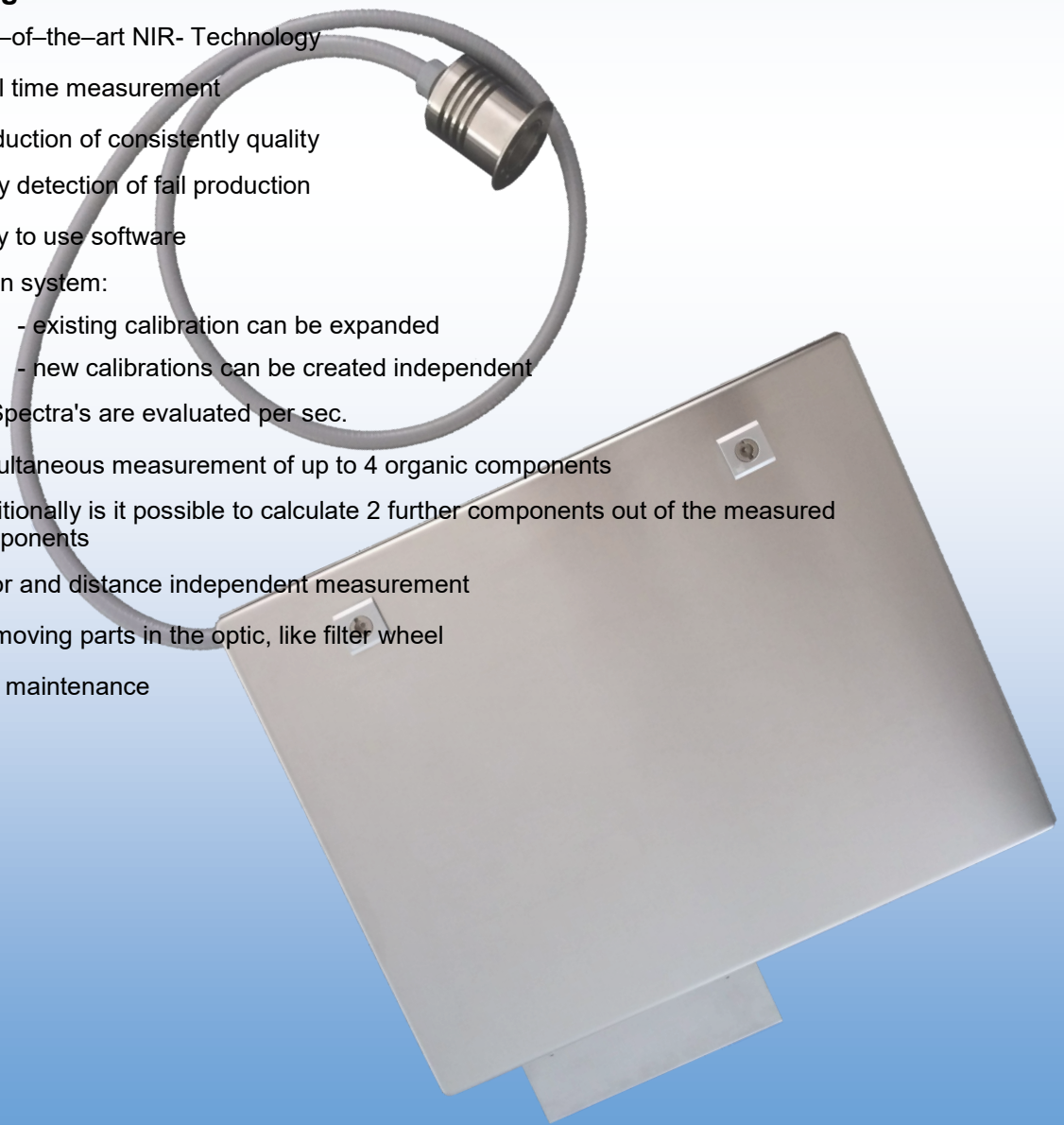
Through the modular construction (Sensor and evaluation unit are separate), the sensor can be installed at a difficult accessible places. This ensure the easy handling.

With the easy to use calibration function (calibration button), our customer can take spectra's at the device and read the internal stored spectra's with the calibration software.

Due to this function and the open calibration system our customers can expand independent an existing calibrations or create new calibrations.

Advantage:

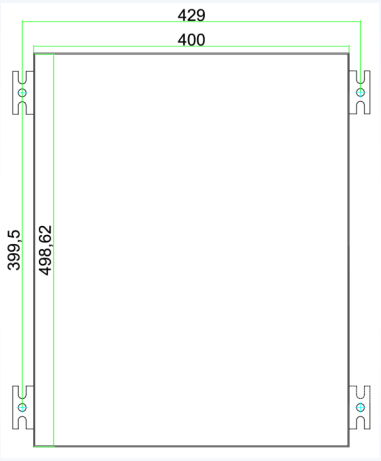
- Stat–of–the–art NIR- Technology
- Real time measurement
- Production of consistently quality
- Early detection of fail production
- Easy to use software
- Open system:
  - existing calibration can be expanded
  - new calibrations can be created independent
- 10 Spectra's are evaluated per sec.
- Simultaneous measurement of up to 4 organic components
- Additionally is it possible to calculate 2 further components out of the measured components
- Color and distance independent measurement
- No moving parts in the optic, like filter wheel
- Low maintenance

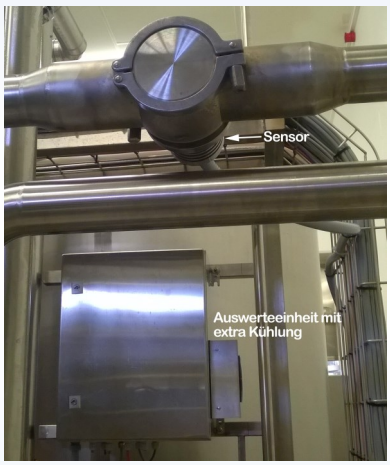


HK4 Standard

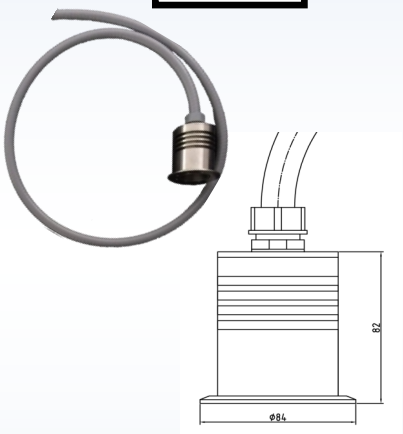
HK4 with extra cooling
For applications up to 40°C

Evaluation unit

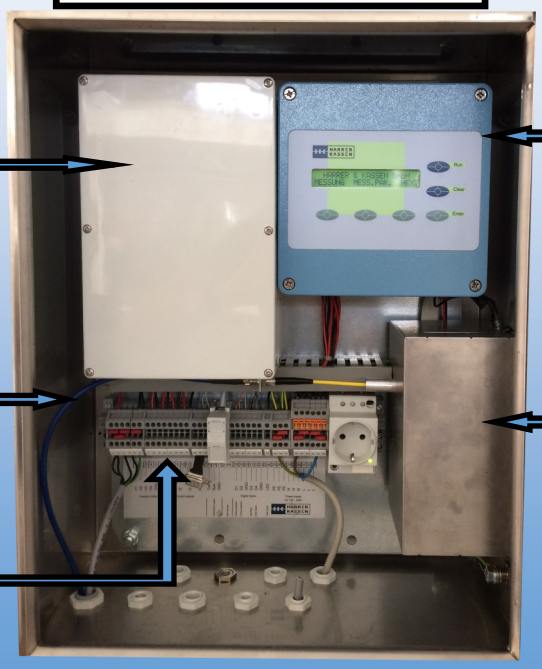




Sensor



Internal construction HK4



Power supply

Serial-LAN-converter

Evaluation unit

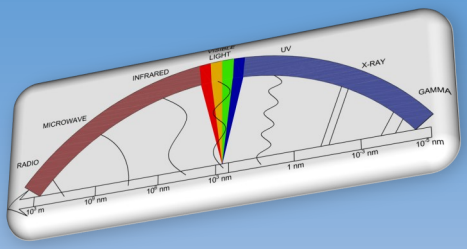
Fiber optic

Optic

Terminal

No moving parts in the optic:

The Harrer & Kassen GmbH uses in his HK4 and in his laboratory measurement devices an NIR (Near- Infrared) Diode- Array detector (Spectrometer) with thermoelectrically cooling, this is necessary for an optimum Signal-to-Noise ration, even under rugged application conditions.



The product will be irradiated with a special developed halogen lamp. The resulting diffuse reflection (the diffuse reflection contains the necessary information of the constituents) is transmitted via a fibre optic to the spectrometer. The spectrometer split the spectra in 256 support points.

Through the splitting of the spectrums, can we select with our calibration software the optimum wavelength rang for each component.

Technical data sensor:

Housing:	Stainless steal
Size:	H x W 82 x Ø 65 mm
Weight:	ca. 1 kg
Protection Type:	IP66 / NEMA 4
Product temperature:	<100°C
Connection:	via Fibre optic

PC– requirement:

- 300 MHz clock speed (at least) recommended Pentium III- Processor (or faster)
- Windows 7 (32 und 64 Bit) or higher
- 512 MB RAM (or higher)
- USB interface

Technical data evaluation unit:

Housing:	Stainless steal
Size:	H x W x D 400 x 499 x 212 mm
Weight:	ca. 21 kg
Protection Type:	IP66 / NEMA 4
Power supply:	85 - 265 V/AC, optional 24V
6 Analog outputs:	0/4 - 20mA / isolated 1500V
PC - interface:	RS 232 or RS 485
PROFI-BUS-DP:	optional
Digital input:	Ext. Start / Stop
Operation:	6 in membrane keypad integrated soft keys
Display:	2x24 Sign LCD, LED– backlight
Environmental temperature:	-20°C - +40°C

Scope of supply:

The HK4 is supplied with sensor, evaluation unit, calibration button and software.

At the commissioning, the operating personal gets a device instruction / training.

Directives:

The HK4 is CE- conform, according to the followings directives:

- EMC directives 2014/30/EU:
  - generic standards EN 61000-6-2
  - generic standards EN 61000-6-4
- Low- voltage directives 2014/35/EU
- RoHS directives 2011/65/EU