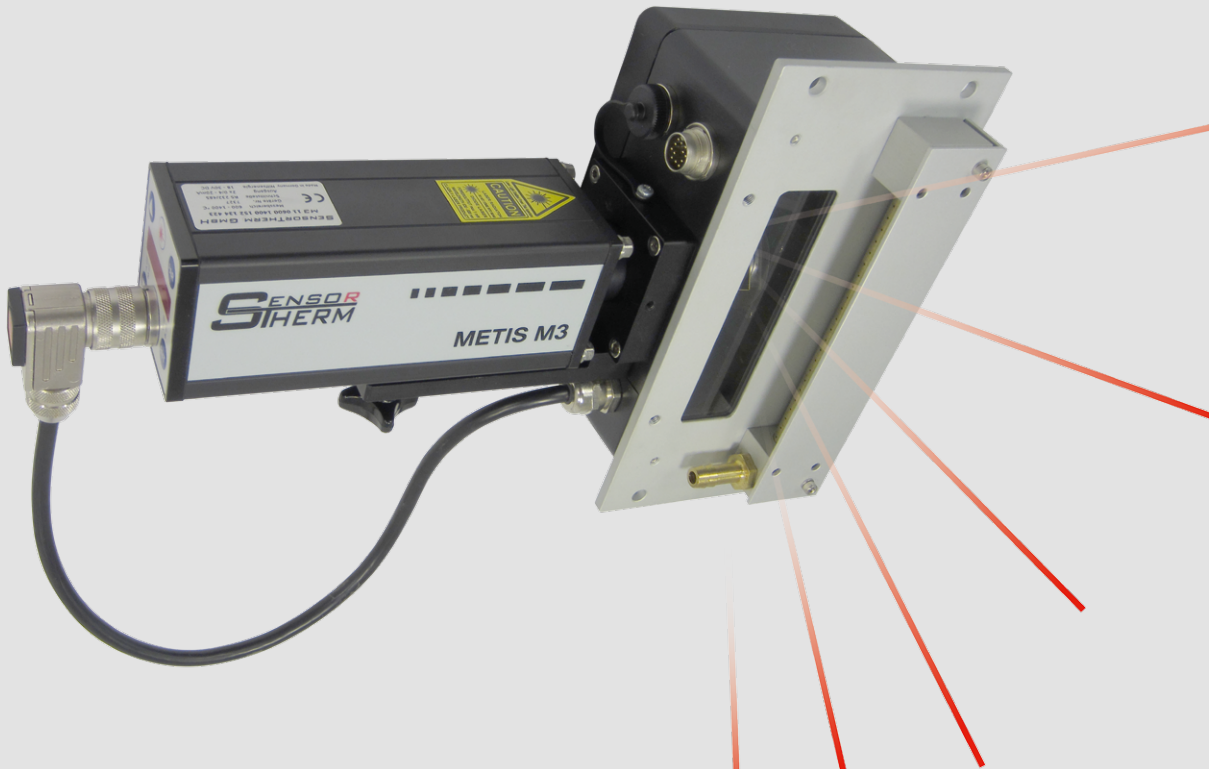


Galaxy SC11 / 12 / 31 / 32

Temperature Line Scanners for Metis Pyrometers



Temperature scanners for linear detection of measurement objects

- Measurement of multiple random workpieces on a production line
- 1600 temperature points along a linear line
- Position detection of workpieces
- Surface structure and production process analysis
- Identifying relevant details and troubleshooting
- Temperature monitoring of bulk material on conveyor belts
- Peak temperature detection of slabs, billets or steel strips
- Scanning of plastics and glass webs

- Temperature profiles in 2D and 3D
- Adjustable scan range up to 90° (SC11/12) or 15° (SC31/32)
- Adjustable scanning speed
- Independent working system without computer
- Software for visual representation of the production process
- Connection via Profinet or Profibus possible
- Robust construction designed for 24/7 continuous operation
- Optional cooling housing for use in harsh conditions

Temperature Measurement Along the Line

The Galaxy line scanner is used for continuous scanning of measurement objects and always detects the temperature on a line. The scanner can be combined with various Metis series pyrometers and is therefore suitable for the measurement of many different materials, depending on the choice of pyrometer.

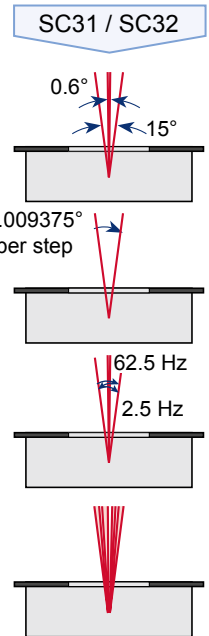
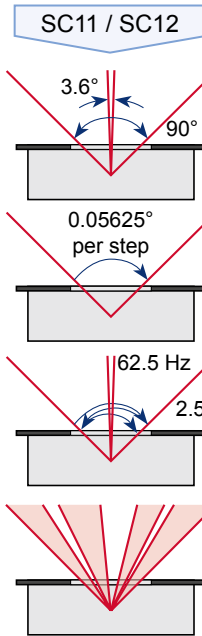
The scanner is equipped with a stepper motor for extremely long service life and continuous 24/7 operation. Angular position and the scanning speed can be adjusted. In addition, up to 4 individual scanning areas can be defined for separate analysis. The step speed is adjustable between 1 and 4000 steps per second. The scan angle is split into 1600 single high-resolution steps: Models SC11 / SC12 between 3.6 and 90°, and Models SC31 / SC32 from 0.6 to 15°.

Scan angle adjustable

Step resolution 1600 steps

Scan frequency 2.5–62.5 Hz (1 to 4000 steps/s adjustable)

Up to 4 measuring zones adjustable



Features

With air purge:

- Reduced cleaning intervals through wide air purge assembly

Precise measurement results:

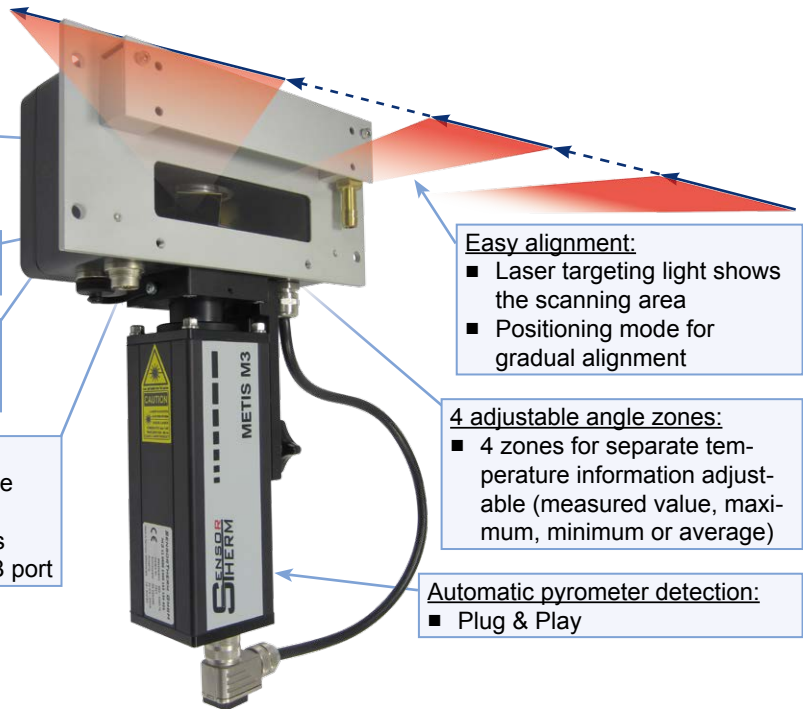
- Automatic angle optimized pane correction

Adapted to industrial requirements:

- Adjustable stepper motor with 4000 steps
- Adjustable scan range

Analog and serial outputs:

- 0/4-20 mA analog output signals corresponding to the temperature profile and the angle position
- SC12 with 4 additional analog outputs of the 4 zones
- Serial interface RS-485 / RS-232 (switchable) + USB port



Easy alignment:

- Laser targeting light shows the scanning area
- Positioning mode for gradual alignment

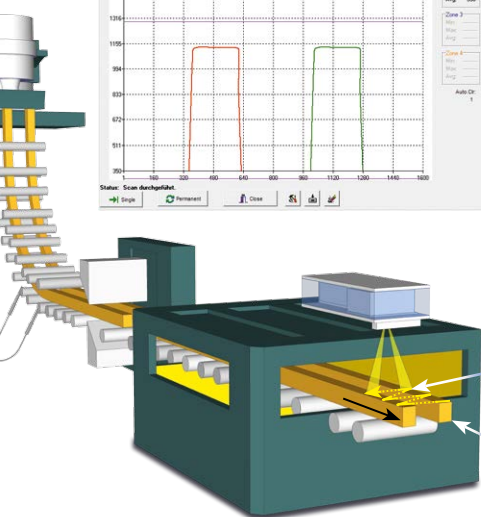
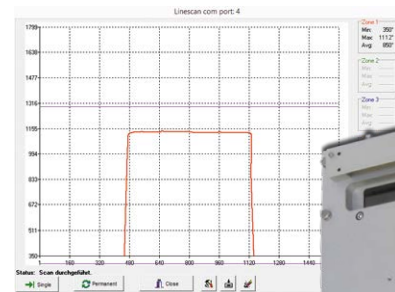
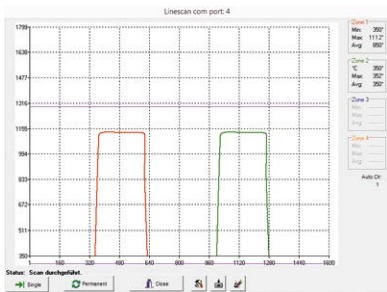
4 adjustable angle zones:

- 4 zones for separate temperature information adjustable (measured value, maximum, minimum or average)

Automatic pyrometer detection:

- Plug & Play

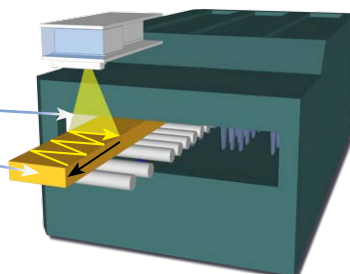
Typical Application



Adjustable scan speed

Adjustable material / zone width

Up to 4 zones adjustable, each with its own temperature information



Galaxy in heavy duty cooling housing for industrial use

Device Designs

| Features Overview | SC11/31 | SC12/32 |
|--|---------|---------|
| Interface RS-232 / RS-485 (switchable) | ✓ | ✓ |
| Communication via interface commands | ✓ | ✓ |
| Software <i>GalaxyWin</i> | ✓ | ✓ |
| Software <i>GalaxyView</i> (3D representation) | ✓ | ✓ |
| Analog position output (angular position) | ✓ | ✓ |
| Analog temperature profile output | ✓ | ✓ |
| Define 4 temperature zones | ✓ | ✓ |
| 4 analog temperature zone outputs | | ✓ |
| Setting buttons + display | | ✓ |
| Trigger input for external start process | ✓ | ✓ |
| Ready contact | ✓ | ✓ |

Galaxy scanner can be operated either via serial interface using ASCII commands or from a PC using the software program. They feature 0/4–20 mA analog output signals corresponding to the temperature profile and the angular position of the scanner. Up to 4 measurement zones can be defined to obtain 4 temperature readings. This may be the maximum, minimum or average value of the respective zone other than the current temperature. Furthermore, for each zone, length and position can be defined in order to detect the position of the measuring objects flexibly.

Technical Data

| Model | SC11 | SC12 | SC31 | SC32 |
|--|--|---|--|---|
| Scanning angle | 3.6° to 90° adjustable in 0,05625° steps | | 0.6° to 15° adjustable in 0.009375 steps | |
| Angular velocity / Max. scanning frequency | Max. 225°/s (adjustable: 1 to 4000 steps/s) 2.5 Hz (90°)–5 Hz (45°)–62.5 Hz (3.6°), adjustable | | Max. 37.5°/s (adjustable: 1 to 4000 steps/s) 2.5 Hz (90°)–5 Hz (45°)–62.5 Hz (3.6°), adjustable | |
| Zones | Max. 4 Zones, adjustable in 1 to 1600 steps (no overlap) | | | |
| Analog output | 1 x temperature profile 0 or 4–20 mA according to pyrometer settings 1 x mirror position 0 or 4–20 mA corresponds step 0–1600 or 0–90° or 0–15° | | | |
| Analog zone output | – | 4 x 0/4–20 mA (according to pyrometer settings) | – | 4 x 0/4–20 mA (according to pyrometer settings) |
| Accuracy | – | Zone output = 0.15% of input value | – | Zone output = 0.15% of input value |
| Serial interfaces | RS-232 or RS-485 (bus compatible, half-duplex) via connection cable, USB 2.0, type B (internal) | | | |
| Baud rate | Adjustable from 2.4–115.2 kBit/s | | | |
| Power supply | 18–36 V DC, max. 600 mA, plus power consumption of the connected pyrometer | | | |
| Isolation | Power supply, analog and digital output are galvanically separated from each other | | | |
| Protection class | IP65 (according to DIN 40 050) with protective window, closed housing, mounted pyrometer and screwed connectors | | | |
| Weight | 2.2 kg (without pyrometer) | | | |
| Ambient temperature | 0–53°C on the housing, storage temperature -20–60°C | | | |
| Rel. humidity | No condensing conditions | | | |
| CE label | According to EU directives for electromagnetic immunity | | | |

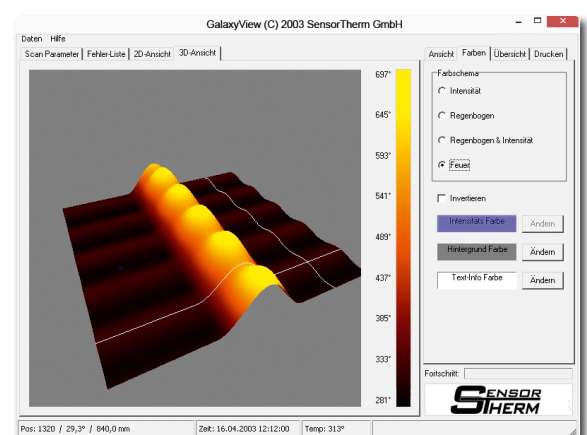
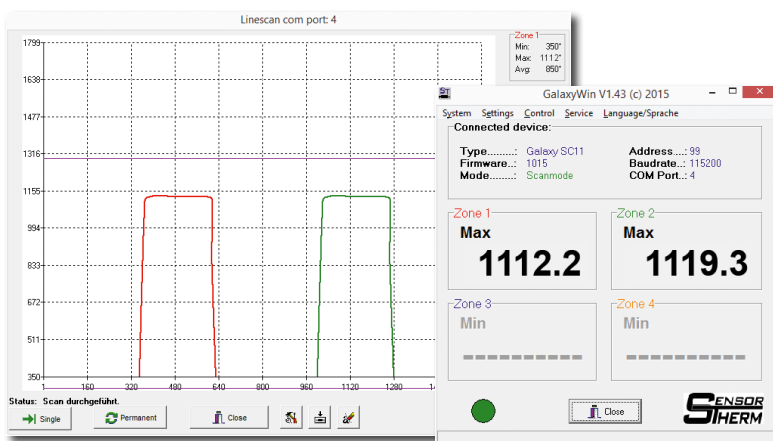


The pyrometer must be properly aligned to the measured object to detect the temperature correctly.

The optical path from the pyrometer's optics to the scanner glass must be included with the distance from the pyrometer to the product when calculating the measurement distance.

Software *GalaxyWin* / *GalaxyView*

The measuring task can be visually monitored and the scanner can be configured via the provided *GalaxyWin* software. *GalaxyView* is used to display recorded *GalaxyWin* data as a 2 or 3 dimensional color image for visual evaluation.



Reference Numbers

| Protection window and suitable pyrometer models | For pyrometers with optics: Scanner models: | Manual focusable | | Motorized focus | |
|--|--|------------------|---------------------------------|-----------------|---------------------------------|
| | | Standard model | + setting keys + 4 zone outputs | Standard model | + setting keys + 4 zone outputs |
| Borosilicate | for pyrometer models | SC11-51-20 | SC12-51-20 | SC11-51-80 | SC12-51-80 |
| | Metis M3/H3: 09/11/16/18/22 | SC31-51-20 | SC32-51-20 | SC31-51-80 | SC32-51-80 |
| Sapphire (Scratch and abrasion resistant) | for pyrometer models | SC11-54-20 | SC12-54-20 | SC11-54-80 | SC12-54-80 |
| | Metis M3/H3: 09/11/16/18/22 | SC31-54-20 | SC32-54-20 | SC31-54-80 | SC32-54-80 |
| | MP23/25, MB35, MY34/39/45/46 | | | | |
| Calcium fluoride | for pyrometer models | SC11-52-20 | SC12-52-20 | SC11-52-80 | SC12-52-80 |
| | Metis MB35, MP25, MY34/39/45/46/47/51/80 | SC31-52-20 | SC32-52-20 | SC31-52-80 | SC32-52-80 |

Note: Connection cables are not included in scope of delivery and have to be ordered separately.

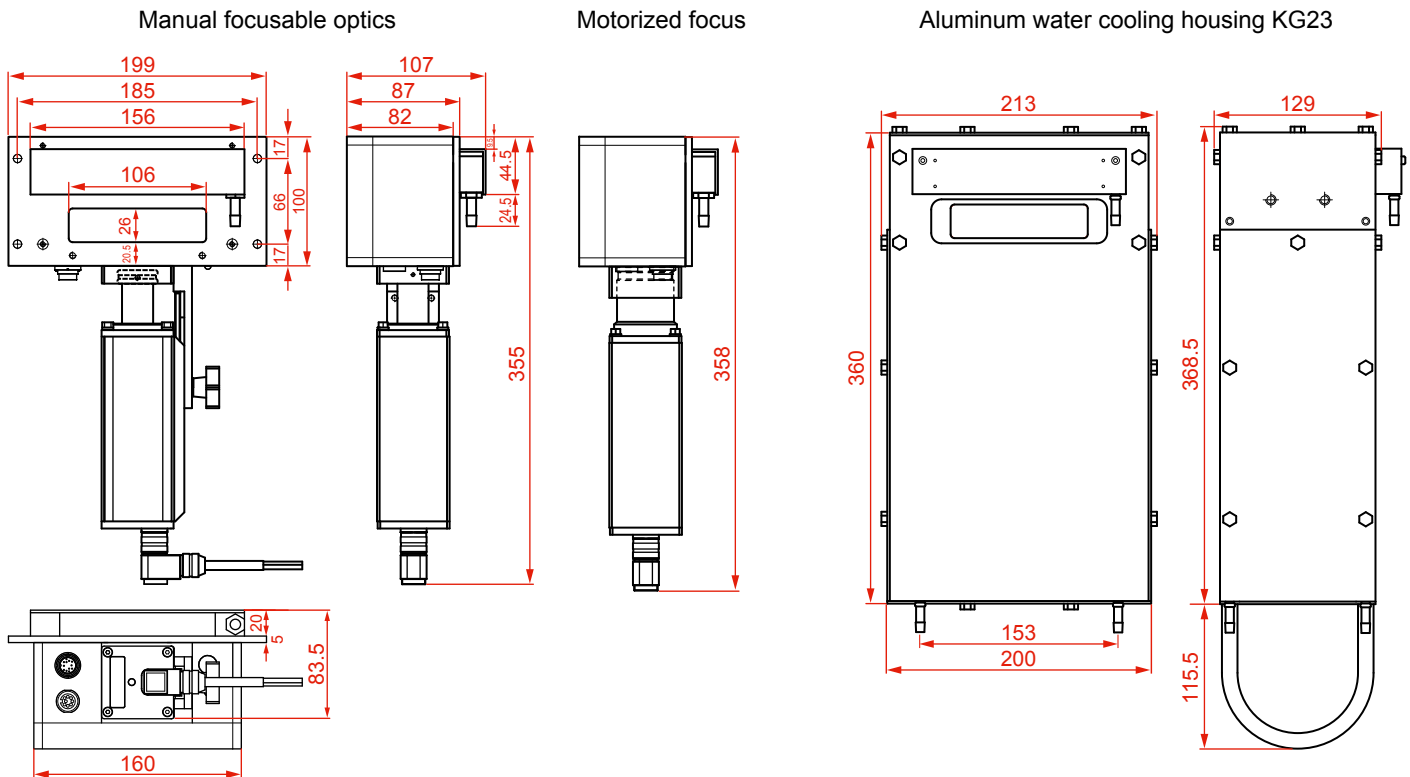
Recommended Accessories

| | |
|-------------|---|
| AL11 / AL43 | Connection cable, 14-wire (available in 5 m steps) with right angle connector / straight connector |
| AU11 / AU43 | Connection cable, 14-wire, interface converter RS-232⇔USB with right angle connector / straight connector |
| AV11 / AV43 | Connection cable, 14-wire, interface converter RS-485⇔USB with right angle connector / straight connector |
| AK40 | Connection cable for analog output angle position and 4x zone temperature (only SC12 / 32) |
| HA21 | Swivel mounting base for scanner with pyrometer without cooling |
| KG21 | Water cooled aluminum front plate with air purge |
| KG23 | Aluminum water cooling jacket with air purge |
| NG12 | DIN-rail power supply 24 V DC / 1.3 A |
| PN10 | Profinet adapter for connection of up to 5 pyrometers via RS485 to a superordinate control system |
| PB70 | External Profibus-DP converter in wall mount housing |



Dimensions

Dimensions in mm



Sensortherm reserves the right to make changes in scope of technical progress or further developments.

Sensortherm-Datasheet_Galaxy_SC11_SC12_SC31_SC32 (Feb. 11, 2016)

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