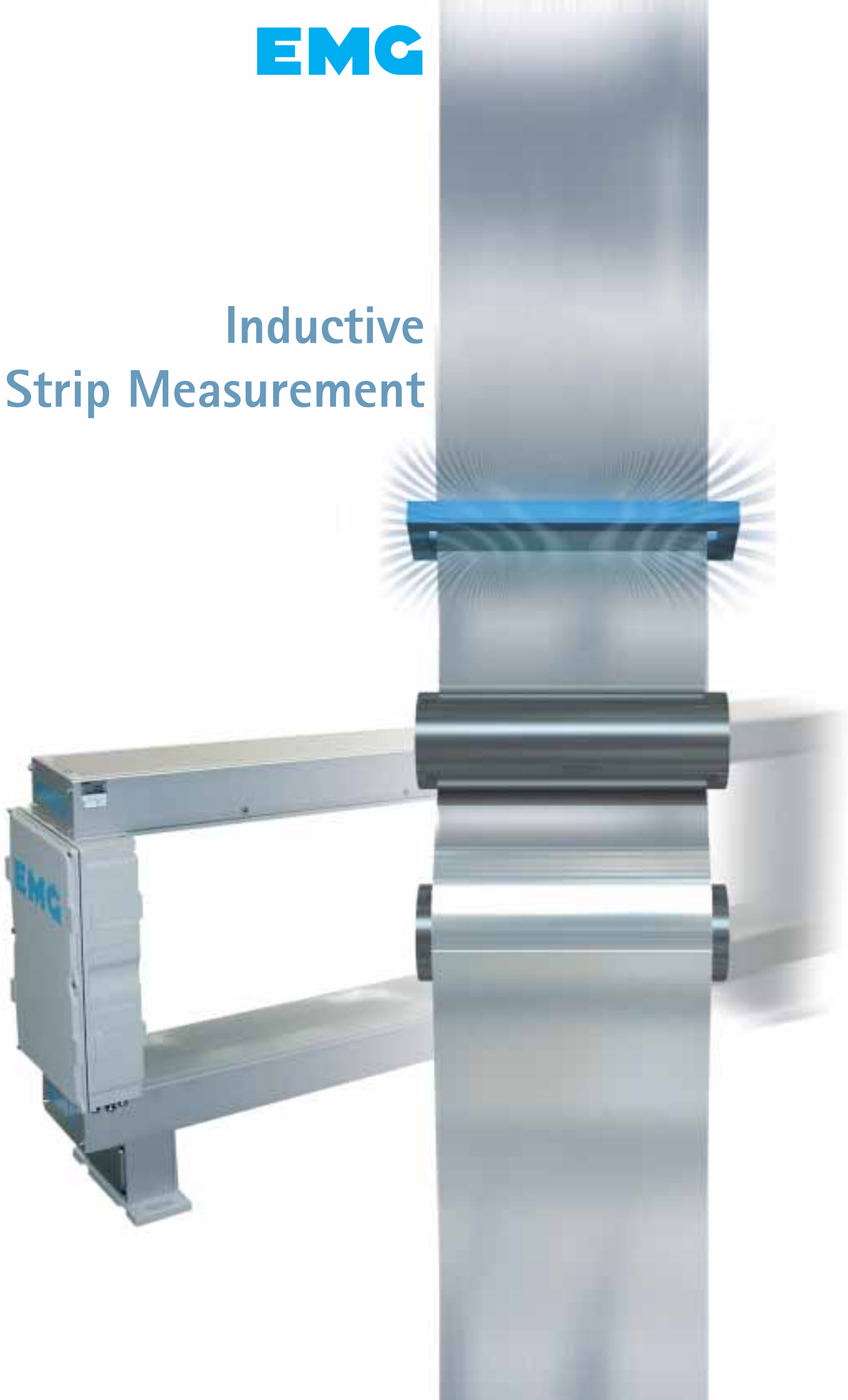
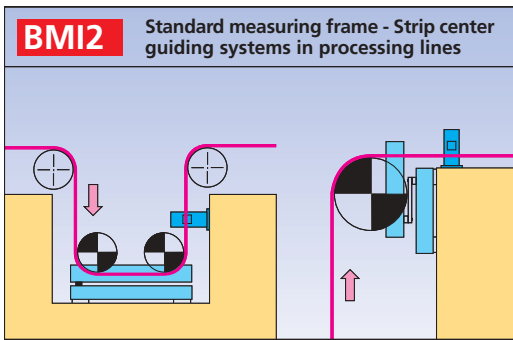


**EMC**

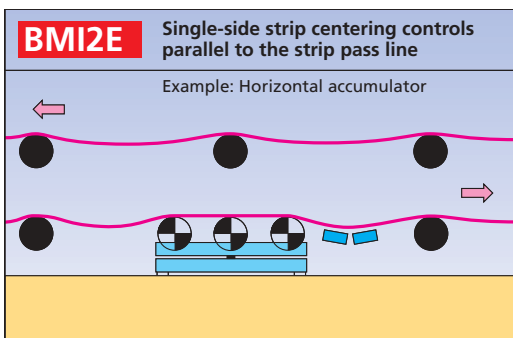
# Inductive Strip Measurement





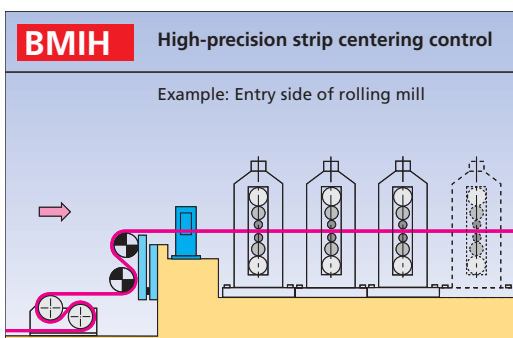
**Application:**  
Strip center guiding system for operation at normal ambient temperatures, center sensing accuracy  $\pm 5$  mm (.20").

**Design:**  
Compact measuring frame with integral evaluation electronics.



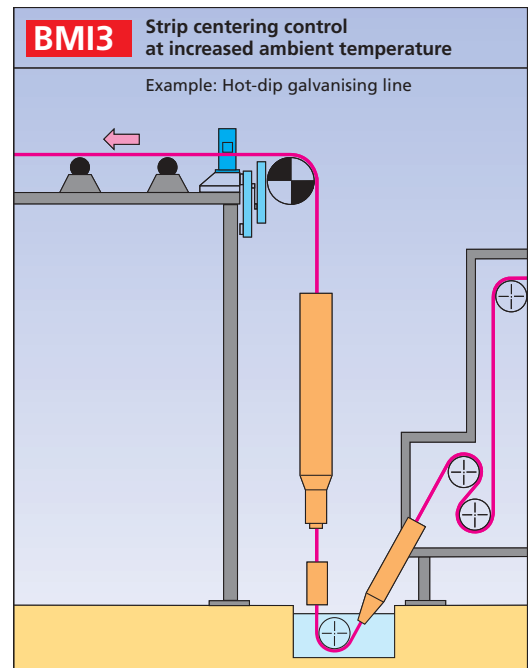
**Application:**  
Recommended when the available space is limited; for operation at normal ambient temperatures, center sensing accuracy  $\pm 5$  mm (.20").

**Design:**  
Measuring and receiving beams arranged on one strip level only, separate evaluation electronics.



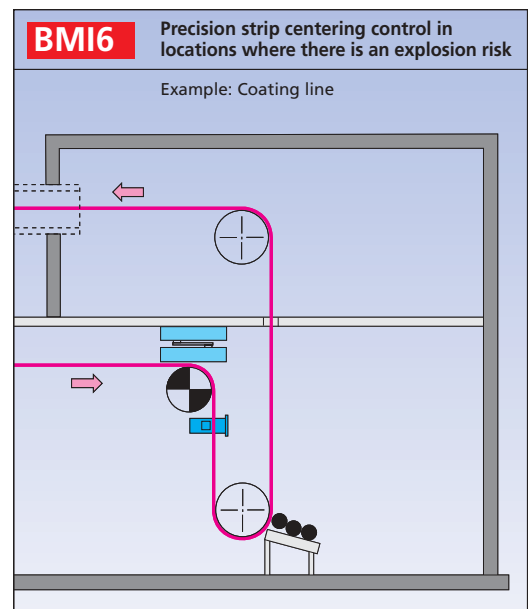
**Application:**  
Strip centre guiding system for operation at normal ambient temperatures, center sensing accuracy better than  $\pm 1$  mm (.04").

**Design:**  
Compact measuring frame, separate evaluation electronics.



**Application:**  
Strip center guiding system for strip temperatures of up to 300°C (572°F) and to not exceed at sensor a maximum of 130°C (266°F); center sensing accuracy  $\pm 5$  mm (.20").

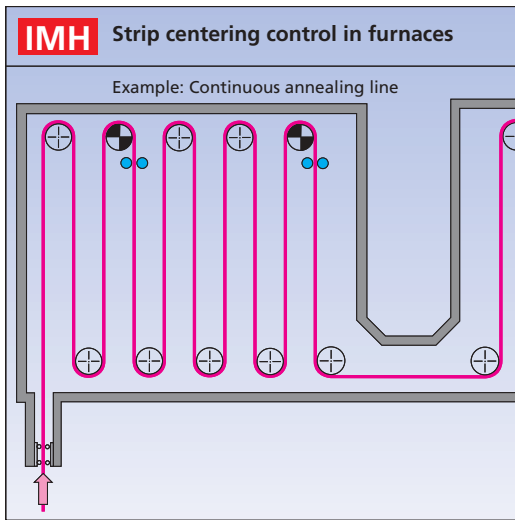
**Design:**  
Compact measuring frame with thermal insulation, separate evaluation electronics.



**Application:**  
Strip center guiding system for use in locations where there is an explosion risk, operation at normal ambient temperatures, center sensing accuracy better than  $\pm 2$  mm (.08").

**Design:**  
Encapsulated measuring frame, class "E" protection, with encapsulated measuring coils and separate external ventilation, including an overpressure monitoring system. The evaluation electronics is installed outside the area where the explosion hazard exists.

## Strip Guiding Systems for the Metal Industry: maintenance-free, self-regulating, and reliable



### Application:

Strip center guiding system in continuous strip annealing lines with either horizontal or vertical strip passage and furnace temperatures of up to 1000°C (1832°F). A center sensing accuracy of  $\pm 5$  mm (.20") can be achieved.

### Design:

Two temperature-resistant tubular metal beams equipped with special heat-resistant measuring coils, which are inserted into the furnace from one side (by the customer), and with two double flanges.

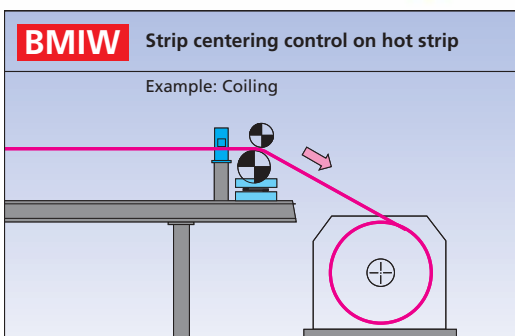
The double flanges, which are welded to the furnace walls, so as to be gas-tight, serve to accommodate the beams and to seal them. Four holes with a diameter of 240 mm (9.45") must be cut in the furnace walls for inserting the beams. The clearance height required for strip passage is between 210 and 360 mm (8.27 to 14.17"), depending on the application. The electrical cables leading from the measuring coils to the evaluation electronics outside the furnace are sealed so as to be gas-tight.

### Sensor Type:

|     |                       |
|-----|-----------------------|
| IMH | max.: 1000°C (1832°F) |
| IMM | max.: 550°C (1022°F)  |
| IML | max.: 300°C (572°F)   |



Fig. High-precision strip center/strip width measuring system with guard

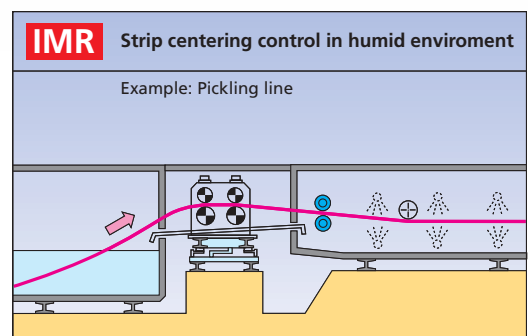


### Application:

Strip center guiding system in continuous casting lines or in hot wide strip mills for strip temperatures of up to 1100°C (2012°F); center sensing accuracy better than  $\pm 2$  mm (.08").

### Design:

Water- or air-cooled measuring frame with thermal insulation and separate evaluation electronics.

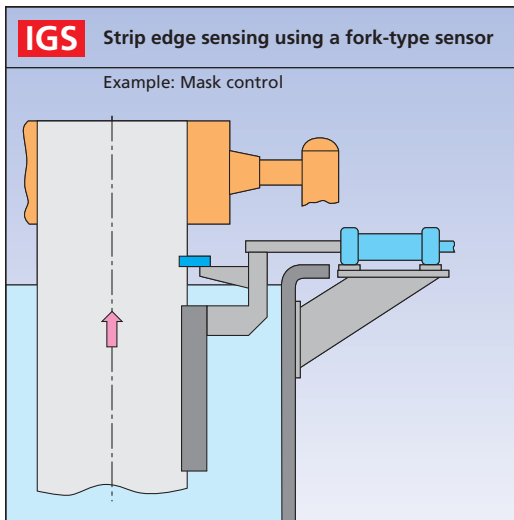


### Application:

Strip center guiding system for use in an aggressive and humid environment such as in strip pickling or cleaning lines with fluid temperatures of up to 80°C (176°F); center sensing accuracy  $\pm 5$  mm (.20").

### Design:

Four encapsulated measuring coils of tubular design, which are, inserted (by the customer) into non-metallic sheathing tubes which are resistant to the agent, and which are installed across the treatment tank above and below the strip.

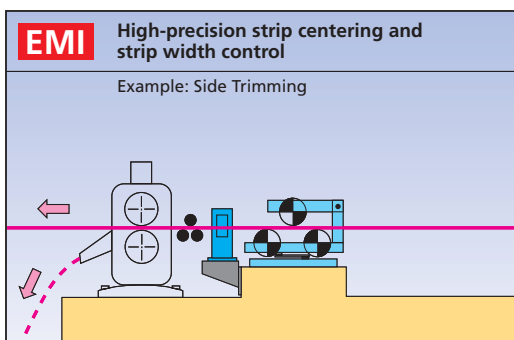


**Application:**

Strip edge sensor for metal strip in areas where liquids with temperatures of up to 80°C (176°F) are sprayed or for metal strip with a projecting protective film. Measuring accuracy  $\pm 1 \text{ mm}$  (.04").

**Design:**

The fork-type sensor is encapsulated in a plastic housing, class of protection IP 67. The sensor has a gap of 50 mm (1.97") and a fork depth of 120 mm (4.72"); includes separate evaluation electronics.

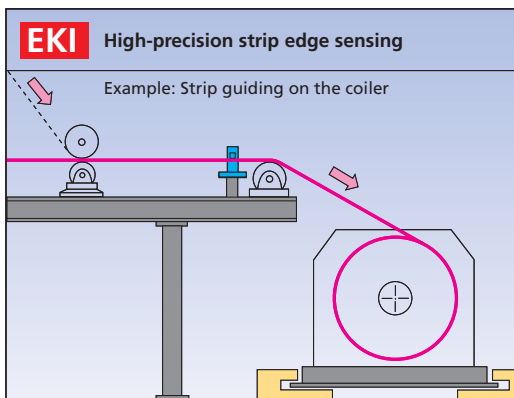


**Application:**

High-precision strip center guiding system for operation at normal ambient temperatures with a measuring accuracy  $\leq \pm 0.5 \text{ mm}$  (.02"). The system may also be used for measuring the strip width with an accuracy of better than  $\pm 1 \text{ mm}$  (.04").

**Design:**

The measuring frame contains inductive sensors that are moved by an electric motor at both edges of the strip. In the lateral part, the two sensors arranged below and above the strip are mechanically coupled by means of a synchronising shaft. The sensors shall follow the strip edges in rigid position control loops. Integral position transducers continuously monitor the positions. Based on these positions and the sensor covering, the strip edge positions are calculated. The evaluation and drive electronics including the digital strip controller are installed in a separate housing.

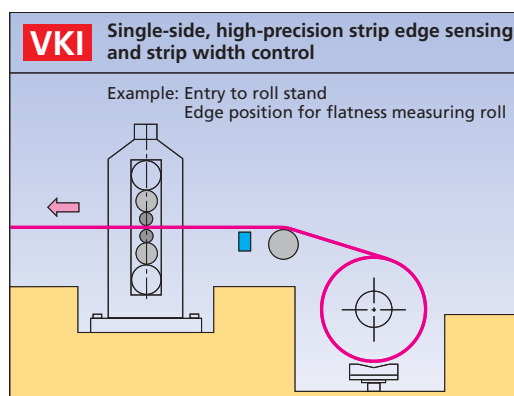


**Application:**

Precise strip edge guiding system for operation at normal ambient temperatures with an edge sensing accuracy better than  $\pm 0.5 \text{ mm}$  (.02").

**Design:**

The measuring frame contains inductive sensors that are moved by an electric motor at one strip edge. In the lateral part, the two sensors arranged below and above the strip are mechanically coupled by means of a synchronising shaft, and they follow the strip edges in rigid position control loops. An integral position transducer continuously monitors the positions. Based on the captured position and the sensor covering, the strip edge position is calculated. The evaluation and drive electronics including the digital strip controller are installed in a separate housing.



**Application:**

High-precision splash-proof measuring system for metal strip and foil, for:

1. strip edge;
2. strip centre;
3. strip width.

Measuring accuracy better than  $\pm 1 \text{ mm}$  (.02").

**Design:**

Aluminium measuring beam, class of protection IP 67, for installation below or above the strip, with integral inductive measuring system and separate evaluation electronics.

## Inductive measuring The benefits

The demand for "no down time" of production equipment constitutes the use of maintenance-free systems. In the field of strip guiding systems, the need for maintenance has been constantly reduced as a result of the use of digital electronic systems and the application of ingenious sensor technology. In the case of sensors for strip position detection, significant progress has been achieved by the introduction of inductive sensing technology, now evolved and continuously improved upon for many years.

In the search for a suitable measuring principle for metal strip, EMG many years ago, decided on the major benefits of the inductive measuring method, because it makes use of the electrical conductivity of the strip and is not affected by the electrostatic conditions prevailing in the measuring environment.

The successful use of more than **5,000** inductive measuring systems throughout the world demonstrates that this decision was right.

By precise linearization of the output signal the principle of inductive strip and foil measuring can be applied in virtually all sections of a processing line.



## EMG inductive measuring systems are insensitive to

- Changing insulation resistance due to dust accumulation on the measuring equipment
- Disturbance of the static field, e.g. in the case of inspection tours by the line staff
- Water, steam and metallic fumes produced during treatment
- Scale and metal-containing dust produced during machining
- Ionising furnace atmospheres



# EMG

## VISION FOR AUTOMATION

EMG Automation GmbH  
Industriestr. 1  
57482 Wenden, Germany  
Phone: + 49 (0) 27 62 - 6 12-0  
Fax: + 49 (0) 27 62 - 6 12-3 84  
Internet: [www.emg-automation.de](http://www.emg-automation.de)  
E-Mail: [servo@emg-automation.de](mailto:servo@emg-automation.de)

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