

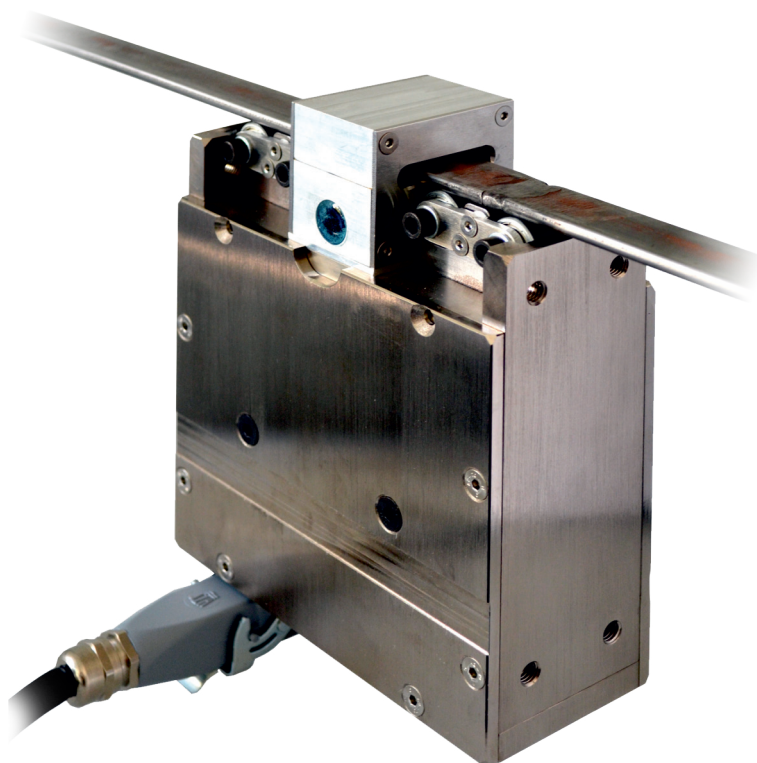
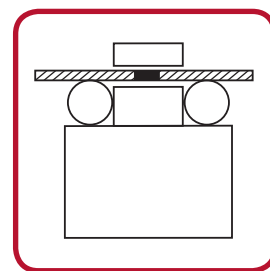
## Weld Seam Detection Sensor NS9N-AAD-SC

Weld Seam Detection in narrow steel strips for magnetizable steels as well as for austenitic stainless steel

- Suitable for narrow steel strips
- Independent of optical surface discolorations
- Also suitable for start and stop processes
- Analog outputs 4 to 20 mA or 2 to 10 V for the connection to the PLC
- Cost-efficient control unit XA100-S
- Two different operating frequencies are selectable

### THE ROLAND PLUS

- ▶ Very high detection reliability
- ▶ Independent from optical surfaces
- ▶ Detection of invisible weld seams



The Roland Company has now developed a new Weld Seam Detector based on the eddy current principle for these type of semi-finished steel strips.

The system consists of a magnetizing unit and an eddy current encircling coil sensor that can be directly connected to the PLC. The orifice of the encircling coil is suitable for material with the dimensions 1.575 in x 0.315 in.

In ferromagnetic materials, the premagnetization increases the process reliability of the system.



# WELD SEAM DETECTION SENSOR NS9N-AAD-SC

## Description:

During the continuous processing of narrow gauge steel strips and other long products (such as cable, wires), it is necessary to detect the joints between individual segments (e.g. strip coils with transverse welds, cable coils with connectors).

## Function:

Materials, such as narrow gauge steel strips, cables and wires are fed through the eddy current encircling coil and transported continuously during the measurement process. The sensor detects the weld seam at stand-still as well as during continuous transportation. The steel rollers ensure a centered position of the material in the Z-axis (see illustration below). The lateral guide rollers must be provided by the customer.

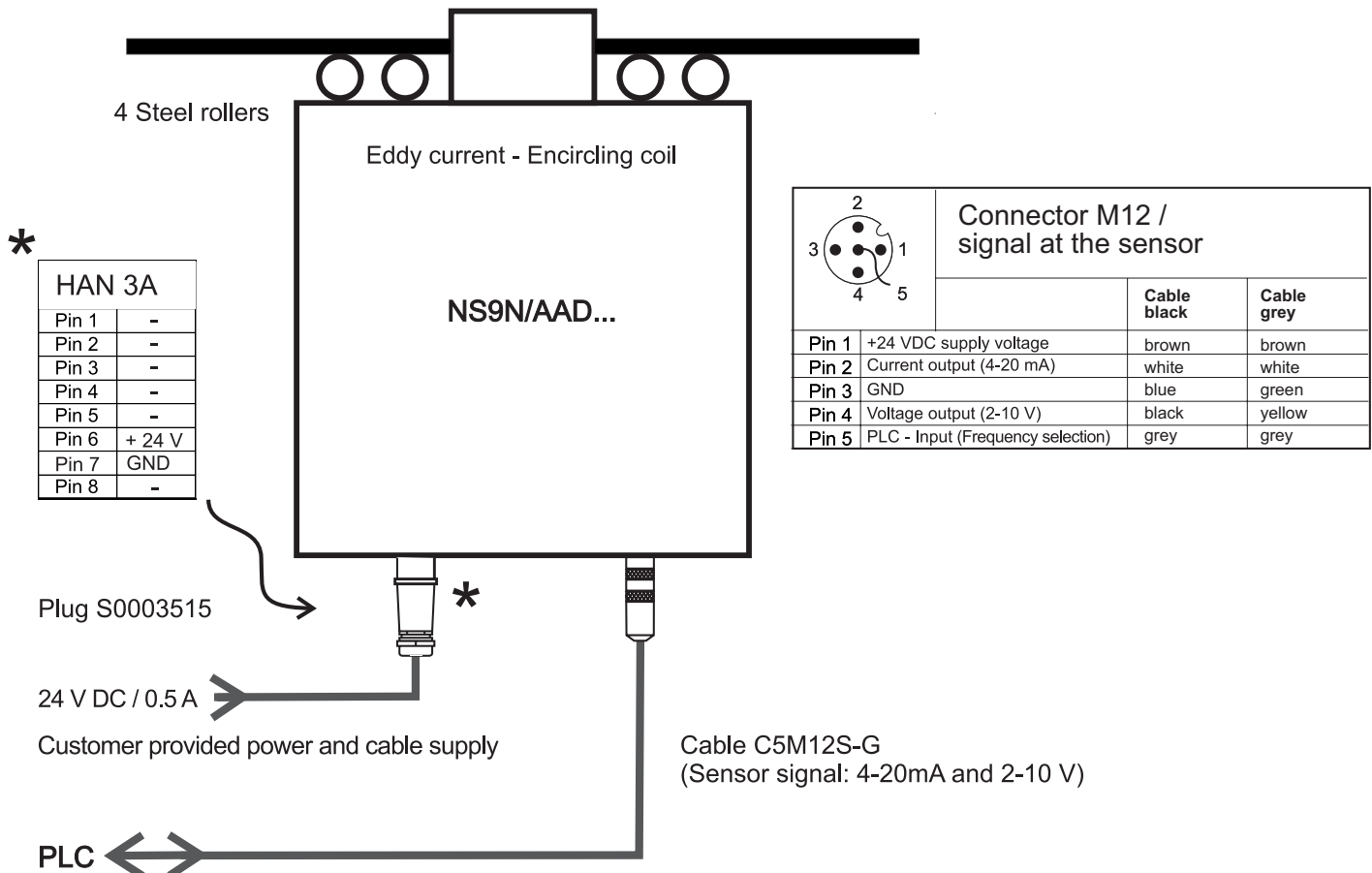
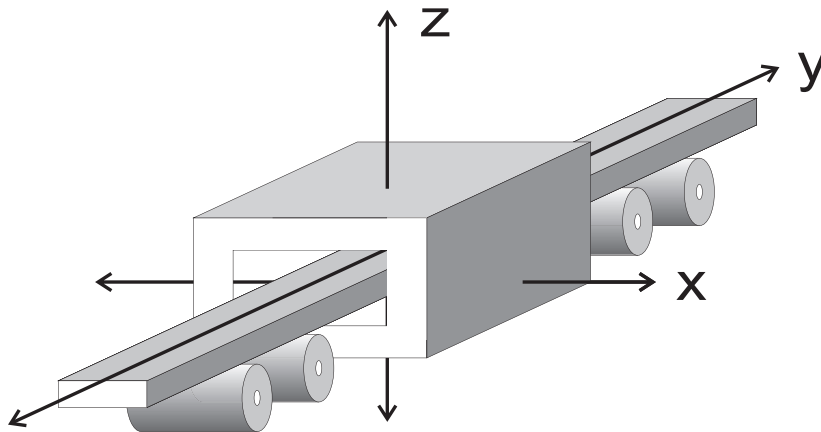
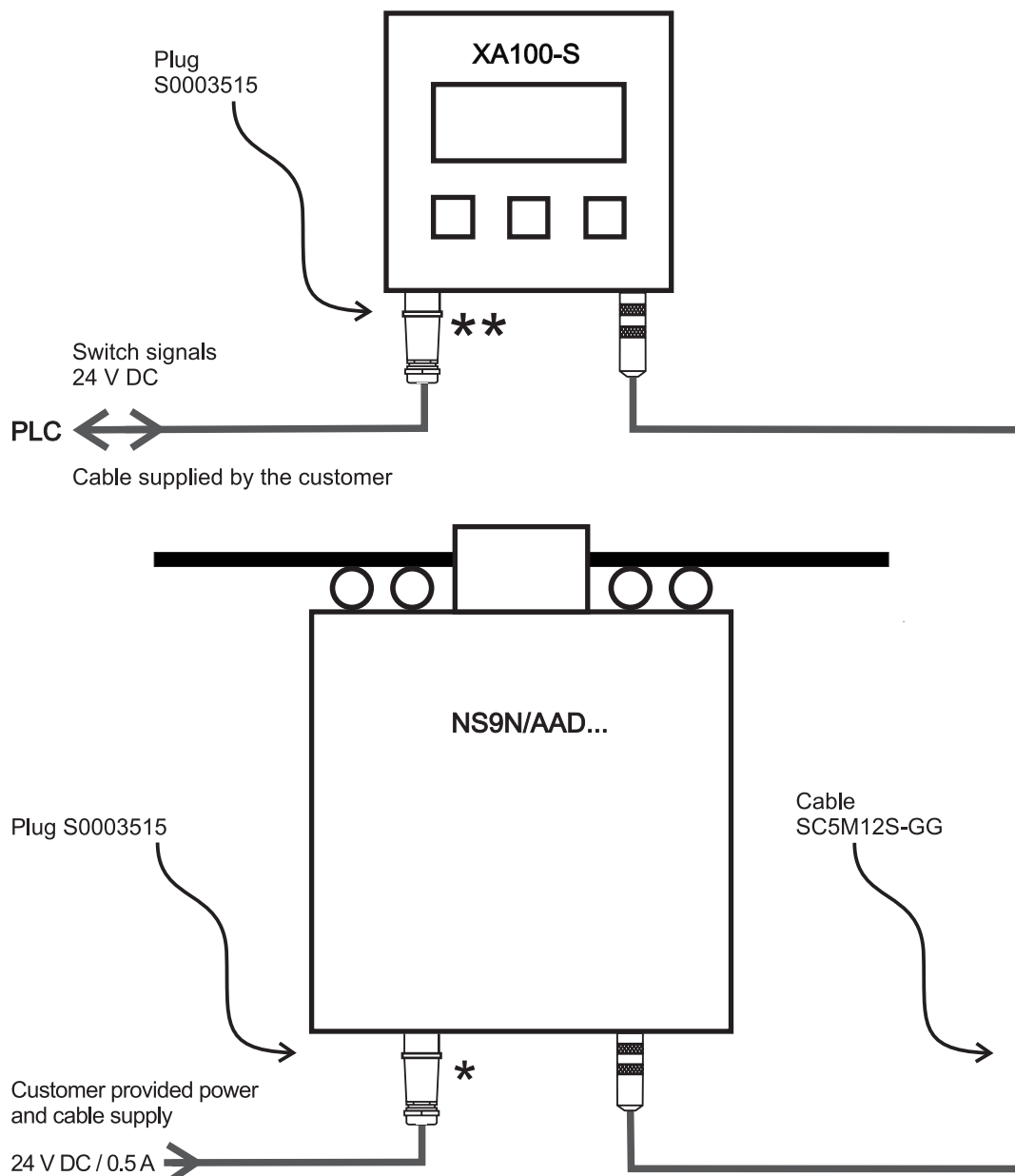


Illustration: Wiring connections without control unit

## Technical data

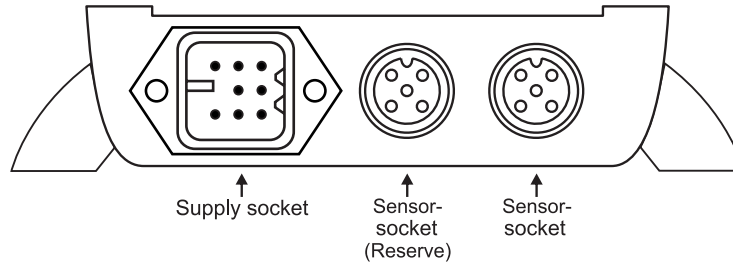
NS9N-AAD-SC		
Material thickness:	Carbon Steel	0.2 mm ... 4 mm (0.008 in ... 0.158 in)
	Non-magnetic stainless steel	0.5 mm ... 4 mm (0.012 in ... 0.158 in)
	Aluminum	0.5 mm ... 4 mm (0.012 in ... 0.158 in)
Eddy current encircling coil:	40 mm x 8 mm (1.57 in x 0.31 in)	
Weight complete:	7 kg (15 lbs)	
Protection class:	IP 53	
Ambient temperature:	+10°C ... +40°C (+50°F ... +104°F)	
Strip width:	5 mm ... 30 mm (0.916 in ... 1.180 in)	

The transportation velocity of the strip should not exceed 16.40 ft/s. This implies that the PLC can capture and process the signals at a rate of 5 kHz. If this is not possible, then the control unit XA100 from Roland is available to generate the required output switch signal.

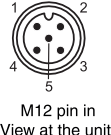


# WELD SEAM DETECTION SENSOR NS9N-AAD-SC

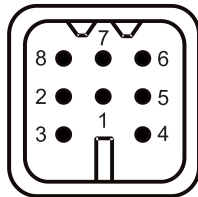
## Connections at XA100- S



## Connector M12 Supply voltage / signal at the control unit

		Cable black	Cable grey	
• Pin 1	→ +24 VDC supply voltage	→ brown	brown	
• Pin 2	→ Current input (4 - 20 mA)	→ white	white	
• Pin 3	→ GND	→ blue	green	
• Pin 4	→ Voltage input (2 - 10 V)	→ black	yellow	
• Pin 5	→ PLC - Output	→ grey	grey	

## \*\*XA100 Supply connection



Enclosure HAN 3A, EMI-type metrical 7-pin insert and PE		
Pin 1	+24 VDC	
Pin 2	GND	
Pin 3	Teach-In	
Pin 4	2-Sheet	Weld Seam detected (Threshold upper limit)
Pin 5	1-Sheet	Base material detected
Pin 6	0-Sheet	Weld Seam detected (Threshold lower limit)
Pin 7	+24 VDC f. I / O	
Pin 8	PE	

## Order information:

Order information	Comment
<b>Control unit</b>	
<b>XA100-S</b>	Control unit in aluminum enclosure, operating voltage 20 ... 28 VDC
<b>Sensors</b>	
<b>NS9N-AAD40X8-SC</b>	Weld Seam Sensor
<b>Sensor cables</b>	
<b>C5M12S-G</b>	Sensor cable, for connecting the sensor to the PLC
<b>SC5M12S-GG</b>	Sensor cable, for connecting the sensor to the XA100-S
<b>Accessory</b>	
<b>S0003515</b>	Harting connector, complete

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