

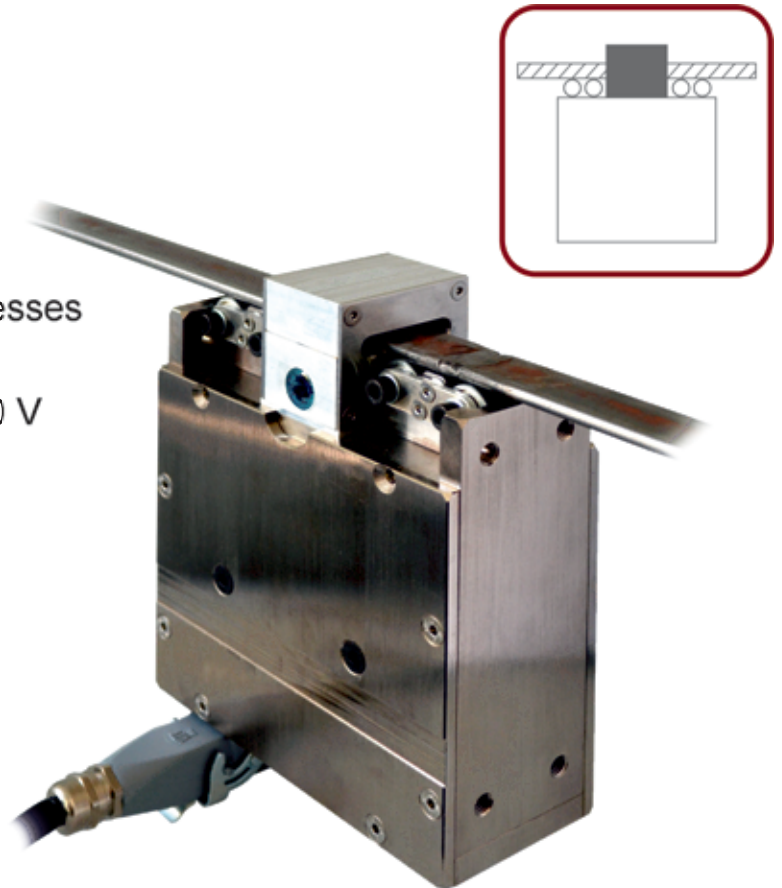
Weld Seam Detection Sensor NS9N-AAD-SC

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

- 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.

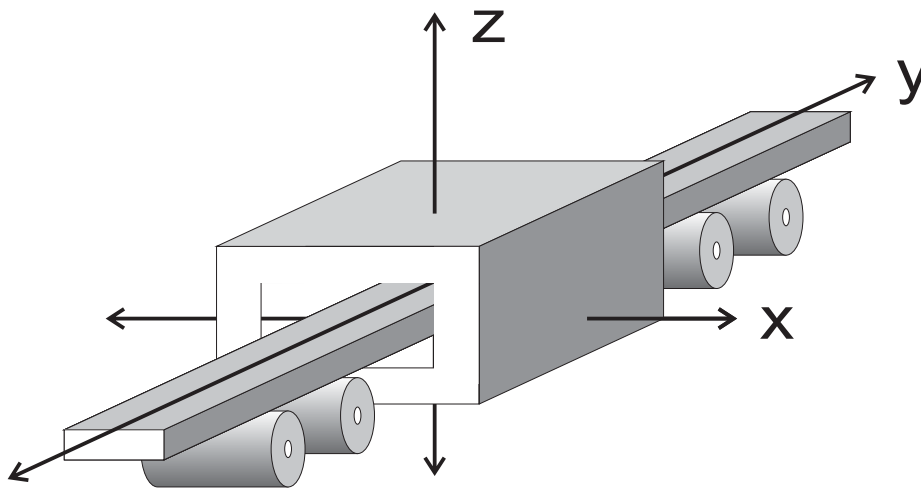


Description

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 (eg, 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 figure). The lateral guide rollers must be provided by the customer.



WELD SEAM DETECTION SENSOR NS9N-AAD-SC

The key data of the new systems are:

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)	
Complete weight:	7 kg (15 lbs)	
IP rating:	IP 53	
Environmental temperature:	+10°C to +40°C (+50°F to +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.

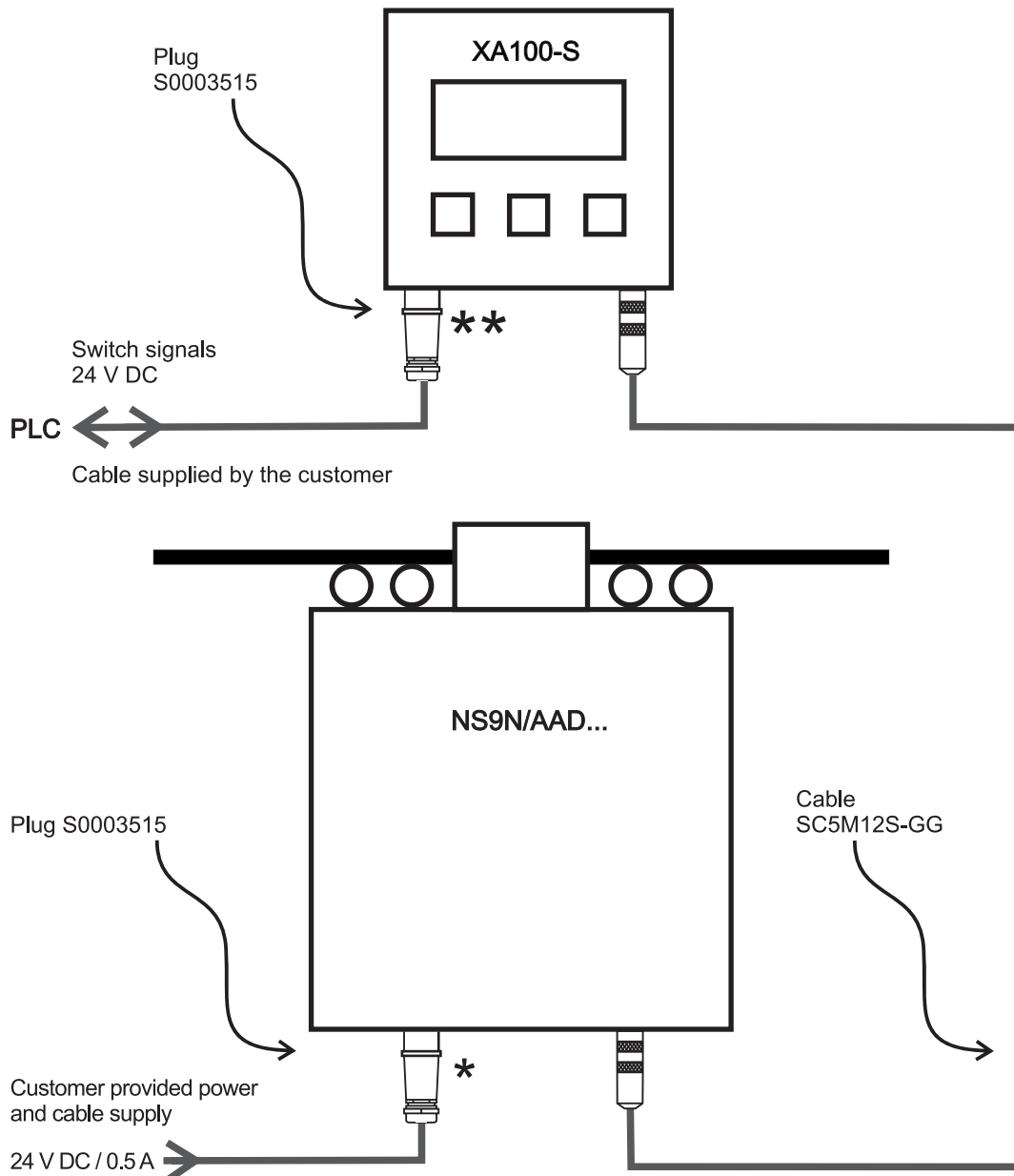
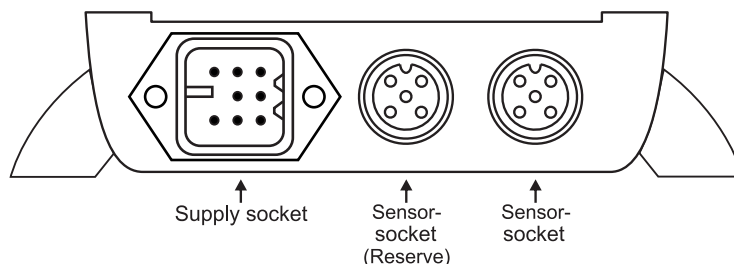
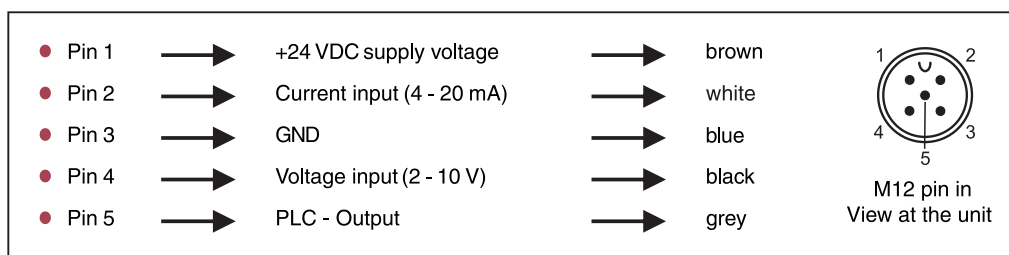


Illustration: Wiring with control unit XA100

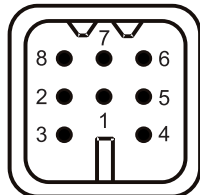
Connections at XA100- S



Connector M12 Supply voltage / signal at the control unit



XA100-S 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. E / A	
Pin 8	PE	

Order information:

Control Unit

XA100-S

Control unit in aluminum enclosure, operating voltage 20 ... 28 VDC

Sensors

NS9N-AAD40X8-SC Weld seam detection sensor

Sensor cable

KNS9S

Sensor cable, for connecting the sensor to the power supply 24 V DC

C5M12S-G

Sensor cable, for connecting the sensor to the PLC

SC5M12S-GG

Sensor cable, for connecting the sensor to the XA100-S

Accessories

S0003515

Harting connector, complete

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