purelogic
research & development

INSTRUCTION MANUAL

Ohmic workpiece search sensor PLL-R2

01. General information

The PLL-R2 set is designed for metal workpiece surface search in CNC plasma cutting devices.
The set consists of two devices: power supply unit PLL-R2P and measuring unit PLL-R2S. The measuring unit is to be installed next to the torch on the Z axis, and the PLLR2P power supply unit is to be installed onto the control panel of the CNC system. The units are connected via cable (Fig. 7).
The sensor allows to adjust the sensitivity. PLL-R2 is equipped with trigger indicators, as well as an opto-isolated interface for connecting to a CNC machine controller.
The sensor provides with measurements when cutting parts are located under water (the response threshold is selected individually by the sensor response sensitivity adjusting).
The measuring unit PLL-R2S has the international protection class IP50 (protection against dust penetration in quantities, that do not affect the performance of the product).

02. Delivery set

- PLL-R2P device – 1 pc.
- PLL-R2S device – 1 pc.
- Connecting cable – 1 pc.
- Instruction manual – 1 pc.
- Mating connectors – 6 pcs.
- Sensor with cable – 1 pc.

03. Technical data

PLL-R2 supply voltage	230 VAC
PLL-R2 input power	6 W
Measured resistance, approximately	<1 Mohm
Measured voltage	40 V
Insulation resistance	500 M ohm
Working temperature	0...60 °C
Overall dimensions of PLL-R2P (W x H x D)	161 x 60 x 70 mm
Overall dimensions of PLL-R2S (W x H x D)	138 x 66 x 95 mm
Protection class	IP50
Weight with packaging	1.5 kg

ALL CONNECTIONS SHALL ONLY BE PROVIDED IN DEENERGISED STATE!

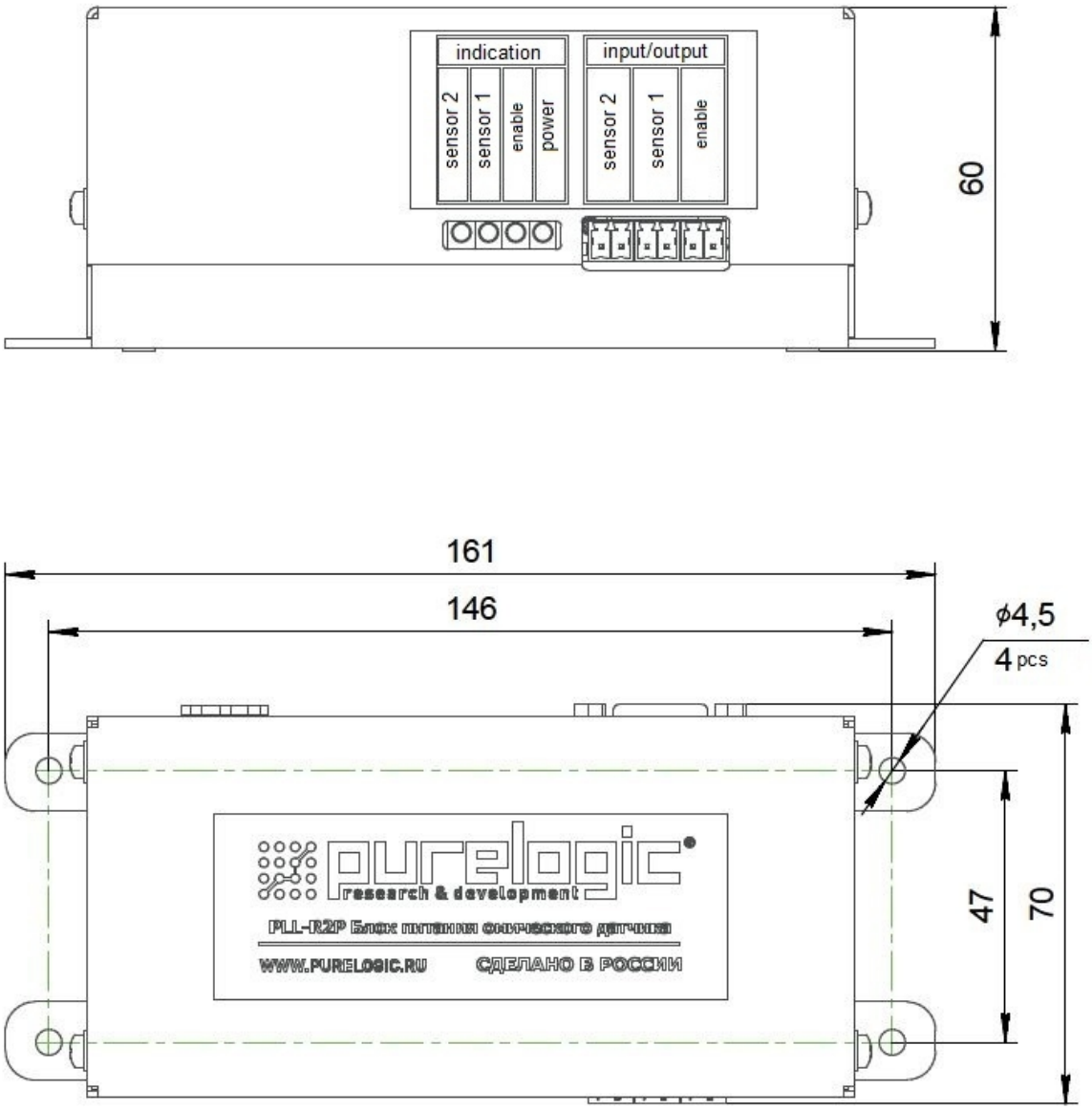


Fig. 1. PLL-R2P device dimensions

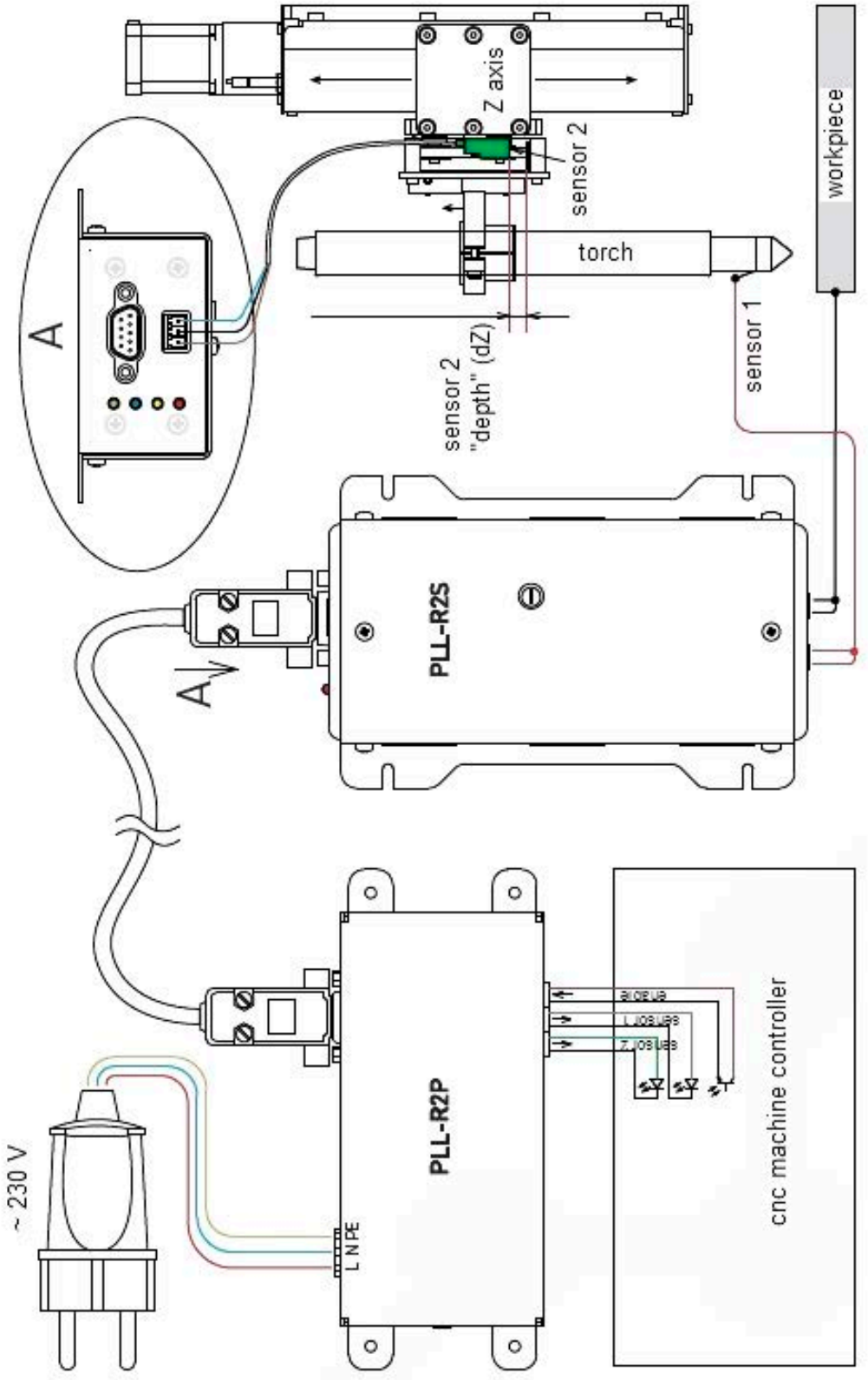
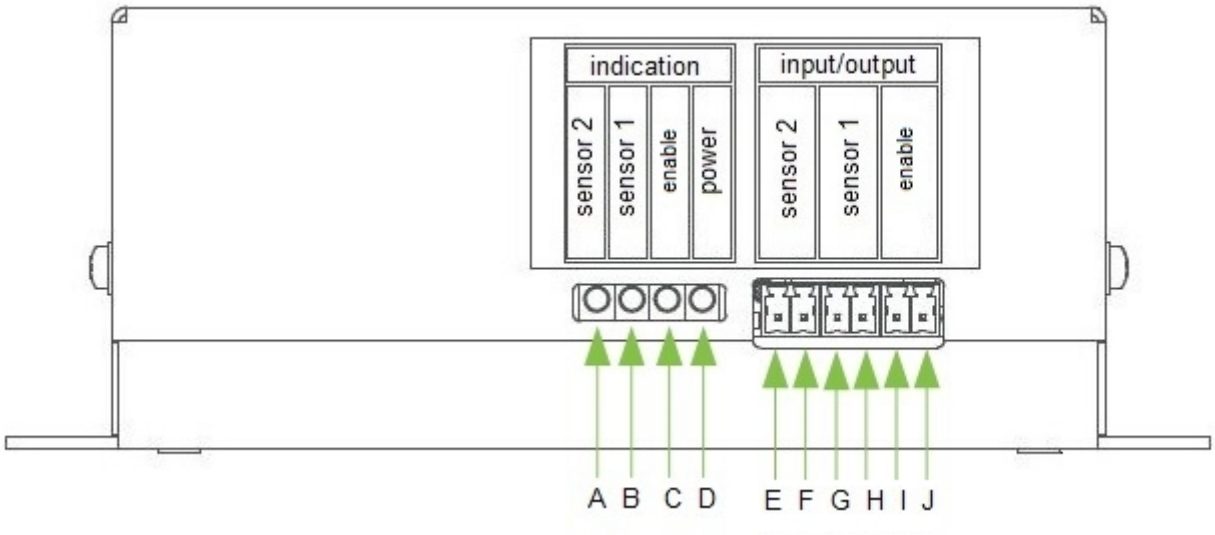


Fig. 2. PLL-R2S device dimensions

04. Controls, indication and connection



Indication	Input/ Output
A: Sensor 2	F: Sensor 2 (output)
B: Sensor 1	H: Sensor 1 (output)
C: Enable	J: Enable
D: Power	E, G, I: common

Fig. 3. Front view of the PLL-R2P device

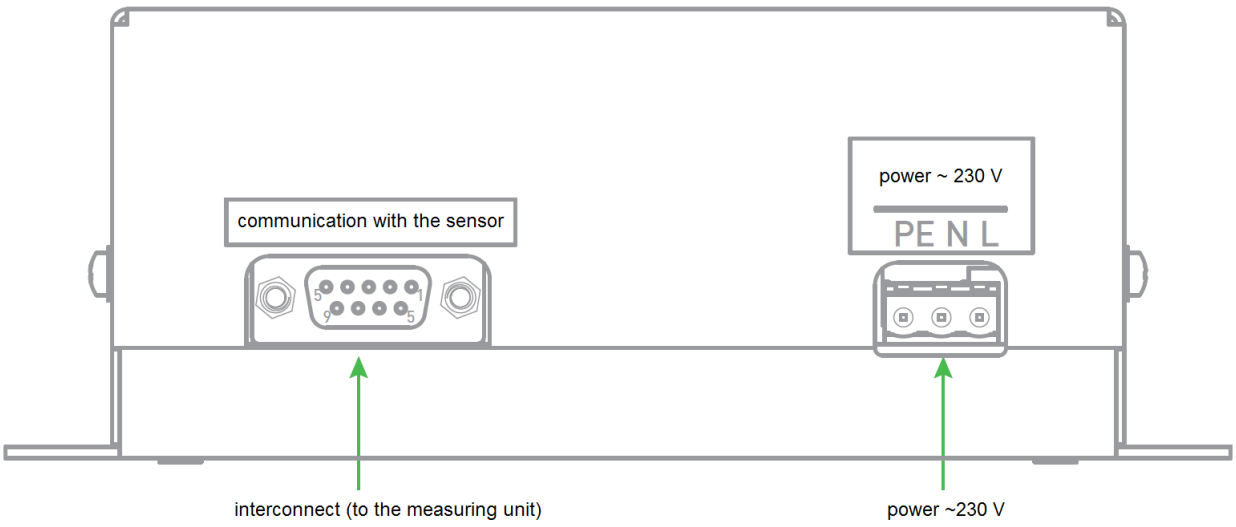


Fig. 4. Rear view of the PLL-R2P device

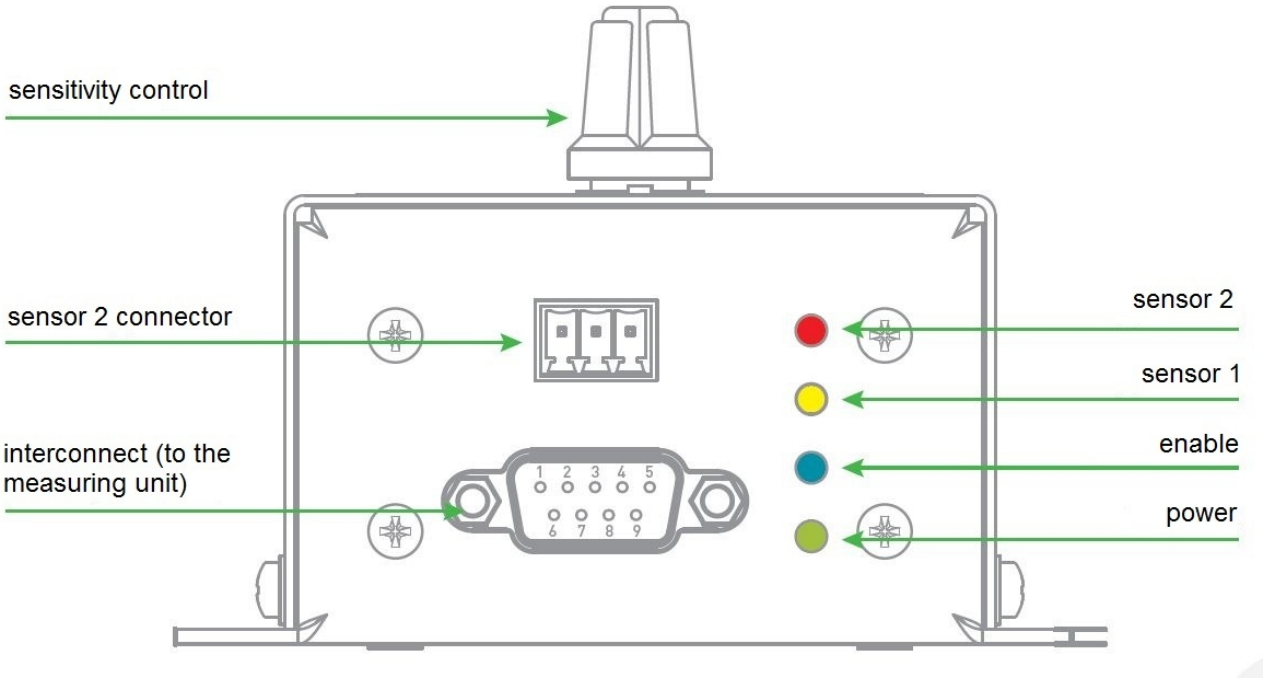


Fig. 5. Front view of the PLL-R2S device

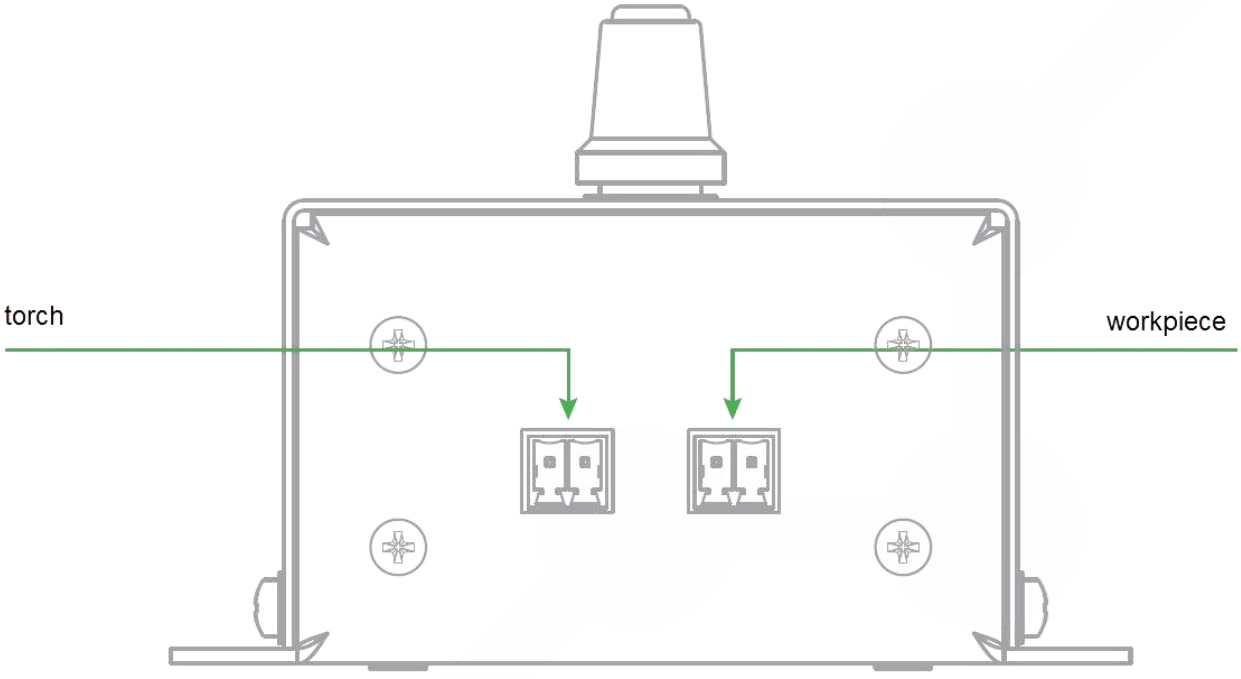


Fig. 6. Rear view of the PLL-R2S device

Fig. 7. Interconnecting cable diagram

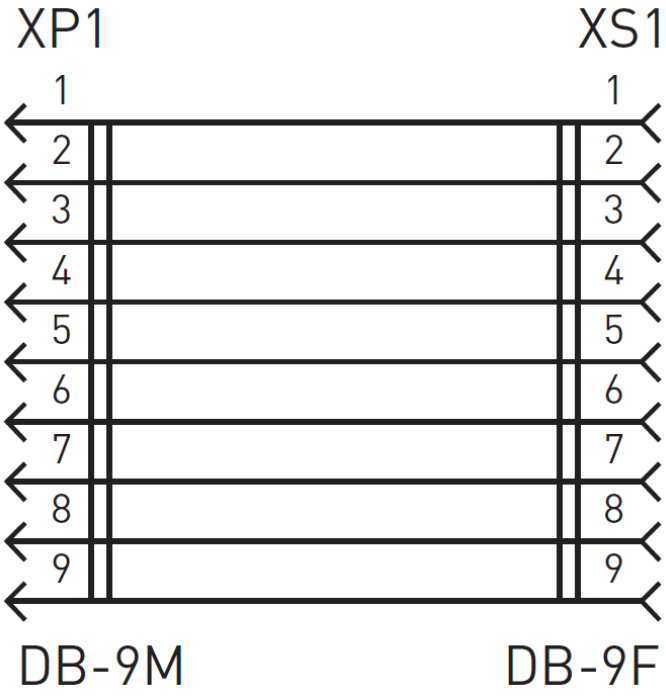


Fig. 8. Interconnecting cable diagram

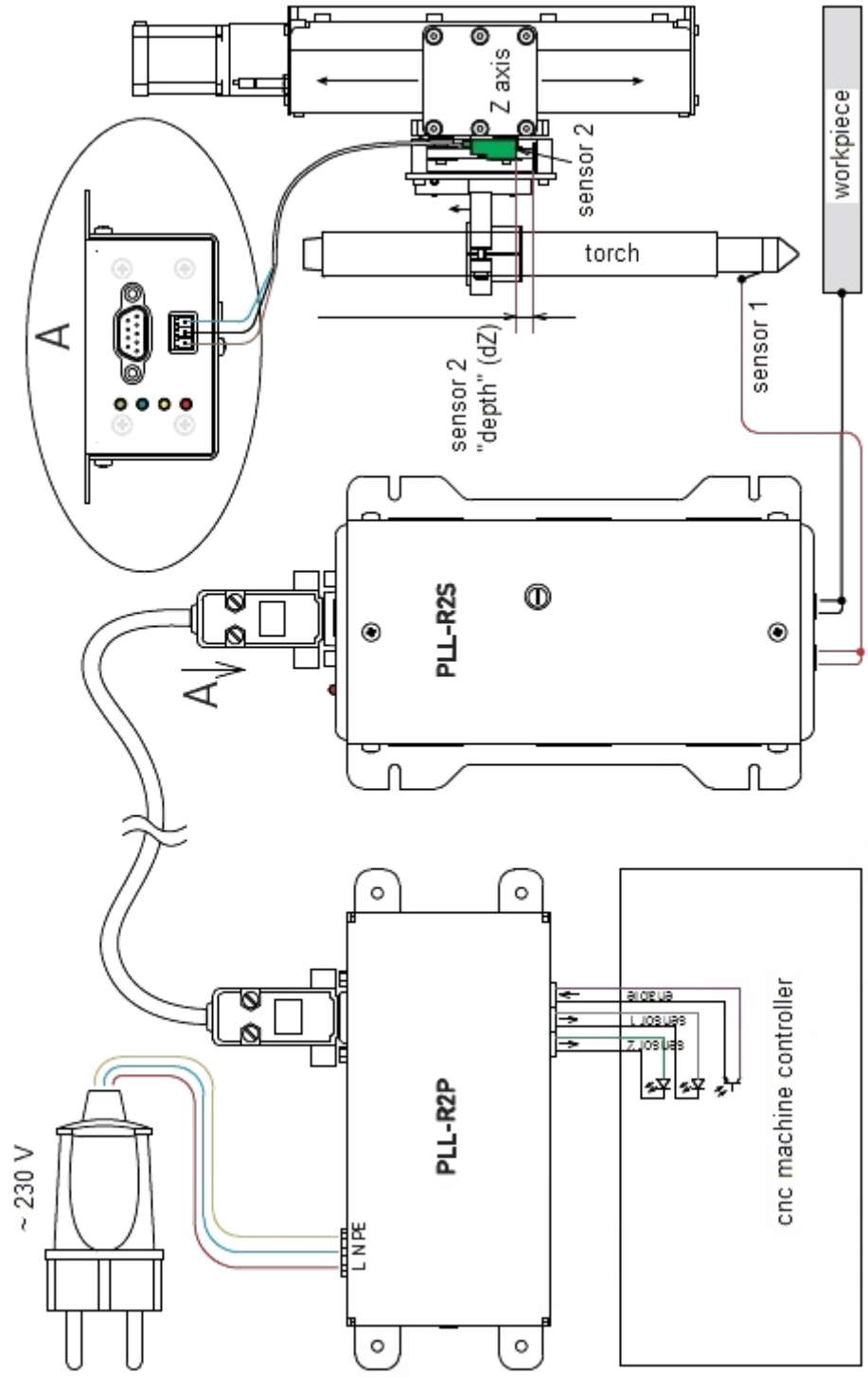


Fig. 9. Sensor connection to a CNC plasma system

05. Description of sensor operation

An ohmic sensor allows to detect the workpiece surface when the torch moves down. When the torch cap touches the workpiece, the “Sensor 1” signal appears. If for any reason the first sensor does not work and the Z axis continues moving down, then dZ mm (Fig. 9) will trigger sensor 2 and two signals will immediately appear at the output: “Sensor 1” and “Sensor 2”. In this case, to obtain the torch height above the workpiece surface, it is necessary to correct the Z coordinates by the distance dZ.
The sensitivity control is designed to reduce the sensor sensitivity in the case of strong interference, which can cause false activation, or to increase the sensitivity in the case of contaminated workpiece.

06. Warranty

Warranty service life is 12 months from the purchase date.
The warranty is only preserved if operation and scheduled maintenance conditions are observed.
1. General provisions
1.1. If the goods is purchased as component parts, Seller shall guarantee operability of each component part individually, but is not responsible for the quality of their joint operation (incorrect selection of component parts. In case of any questions you can consult the company’s specialists).
1.2. Seller does not provide any warranty for compatibility of the purchased goods and the goods possessed by Buyer, or purchased by them from any third parties.
1.3. Specifications and configuration of the product can be changed by manufacturer without prior notice due to continuous technical improvement of the products.
2. Conditions for access to warranty service
2.1. The goods is accepted for warranty service in the same configuration in which it was purchased.
3. Warranty service procedure
3.1. The warranty service is carried out by testing (checking for) the declared malfunction of the product.
3.2. The warranty service is carried out if the malfunction is confirmed.
4.The warranty does not cover glass, electric lamps, starters and consumable materials, and:
4.1. any goods damaged due to improper transportation and storage conditions, incorrect connection, offdesign operation, or in conditions not stipulated by the manufacturer (including temperature and humidity beyond recommended range), damaged due to effect of exterior circumstances (power supply voltage surges, natural disasters, etc.), and mechanically or thermally
damaged goods.
4.2. Goods with traces of effect and (or) ingress of foreign objects, substances (including dust), liquids, insects and those with extraneous texts.
4.3. Goods with traces of unauthorized tampering and (or) repair (tampering signs, primitive soldering, traces of component replacement, etc.).
4.4. The goods having self-diagnostic means indicating improper operation conditions.

4.5. Highly technical Goods in respect of which installation and assembly works were carried out neither by Seller's specialists, nor by organizations recommended by Seller, except cases directly stipulated in the goods documentation.
4.6. The Goods operated in conditions where power supply did not comply with manufacturer's requirements, and if the electrical network and equipment protection devices are unavailable.
4.7. The Goods which was re-sold by the initial buyer to third-party persons.
4.8. The Goods damaged due to use of low-quality or outdated spare parts, consumable materials,
accessories and if spare parts, consumable materials and accessories not recommended by the manufacturer were used.

This product was manufactured and accepted in accordance with mandatory requirements of the applicable technical documentation and deemed ready for operations.

Batch No: QCD:

We draw your attention to the fact that changes are possible in the operation manual due to constant technical improvement of products. You can always download the latest versions on our website www.purelogic.ru

www.purelogic.ru

Contacts:

+7 (495) 505-63-74 - Moscow
+7 (473) 204-51-56 - Voronezh

www.purelogic.ru

160, Leninsky avenue, Voronezh,
Russia, 394033

Monday – Thursday: 8.00–17:00
Friday: 8.00–16.00

info@purelogic.ru