

PR



9410 Модуль контроля питания по силовой шине Power Rail

Руководство по эксплуатации

Архангельск (8182)63-90-72
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Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
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- DK ►** PR electronics A/S tilbyder et bredt program af analoge og digitale signalbehandlingsmoduler til industriel automation. Programmet består af Isolatorer, Displays, Ex-barrierer, Temperaturtransmittere, Universaltransmittere mfl. Vi har modulerne, du kan stole på i selv barske miljøer med elektrisk støj, vibrationer og temperaturudsving, og alle produkter opfylder de strengeste internationale standarder. Vores motto »Signals the Best« er indbegrebet af denne filosofi – og din garanti for kvalitet.
- UK ►** PR electronics A/S offers a wide range of analogue and digital signal conditioning devices for industrial automation. The product range includes Isolators, Displays, Ex Interfaces, Temperature Transmitters, and Universal Devices. You can trust our products in the most extreme environments with electrical noise, vibrations and temperature fluctuations, and all products comply with the most exacting international standards. »Signals the Best« is the epitome of our philosophy – and your guarantee for quality.
- FR ►** PR electronics A/S offre une large gamme de produits pour le traitement des signaux analogiques et numériques dans tous les domaines industriels. La gamme de produits s'étend des transmetteurs de température aux afficheurs, des isolateurs aux interfaces SI, jusqu'aux modules universels. Vous pouvez compter sur nos produits même dans les conditions d'utilisation sévères, p.ex. bruit électrique, vibrations et fluctuations de température. Tous nos produits sont conformes aux normes internationales les plus strictes. Notre devise »SIGNALS the BEST« c'est notre ligne de conduite - et pour vous l'assurance de la meilleure qualité.
- DE ►** PR electronics A/S verfügt über ein breites Produktprogramm an analogen und digitalen Signalverarbeitungsmodulen für die industrielle Automatisierung. Dieses Programm umfasst Displays, Temperaturtransmitter, Ex- und galvanische Signaltrenner, und Universalgeräte. Sie können unsere Geräte auch unter extremen Einsatzbedingungen wie elektrisches Rauschen, Erschütterungen und Temperaturschwingungen vertrauen, und alle Produkte von PR electronics werden in Übereinstimmung mit den strengsten internationalen Normen produziert. »Signals the Best« ist Ihre Garantie für Qualität!

POWER CONTROL UNIT

9410

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WARNING

The following operations should only be carried out on a disconnected module and under ESD-safe conditions:

General mounting, connection and disconnection of wires.
Troubleshooting the module.

Repair of the module and replacement of circuit breakers must be done by PR electronics A/S only.

SYMBOL IDENTIFICATION



Triangle with an exclamation mark: Read the manual before installation and commissioning of the module in order to avoid incidents that could lead to personal injury or mechanical damage.



The CE mark proves the compliance of the module with the essential requirements of the directives.



The **double insulation symbol** shows that the module is protected by double or reinforced insulation.



Ex modules have been approved according to the ATEX directive for use in connection with installations in explosive areas.

SAFETY INSTRUCTIONS

DEFINITIONS:

Hazardous voltages have been defined as the ranges: 75...1500 Volt DC, and 50...1000 Volt AC.

Technicians are qualified persons educated or trained to mount, operate, and also troubleshoot technically correct and in accordance with safety regulations.

Operators, being familiar with the contents of this manual, adjust and operate the knobs or potentiometers during normal operation.

RECEIPT AND UNPACKING:

Unpack the module without damaging it and check whether the module type corresponds to the one ordered. The packing should always follow the module until this has been permanently mounted.

ENVIRONMENT:

Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock, as well as rain and heavy moisture. If necessary, heating in excess of the stated limits for ambient temperatures should be avoided by way of ventilation.

The module must be installed in pollution degree 2 or better.

The module is designed to be safe at least under an altitude up to 2 000 m.

MOUNTING:

Only technicians who are familiar with the technical terms, warnings, and instructions in the manual and who are able to follow these should connect the module.

Should there be any doubt as to the correct handling of the module, please contact your local distributor or, alternatively,

PR electronics A/S

Mounting and connection of the module should comply with national legislation for mounting of electric materials, i.a. wire cross section, protective fuse, and location.

The use of stranded wires is not permitted for mains wiring except when wires are fitted with cable ends.

Descriptions of input / output and supply connections are shown in the block diagram and on the side label.

The module is provided with field wiring terminals and shall be supplied from a Power Supply having double / reinforced insulation. A power switch shall be easily accessible and close to the module. The power switch shall be marked as the disconnecting device for the module.

Year of manufacture can be taken from the first two digits in the serial number.

CALIBRATION AND ADJUSTMENT:

During calibration and adjustment, the measuring and connection of external voltages must be carried out according to the specifications of this manual. The technician must use tools and instruments that are safe to use.

NORMAL OPERATION:

Operators are only allowed to adjust and operate modules that are safely fixed in panels, etc., thus avoiding the danger of personal injury and damage. This means there is no electrical shock hazard, and the module is easily accessible.

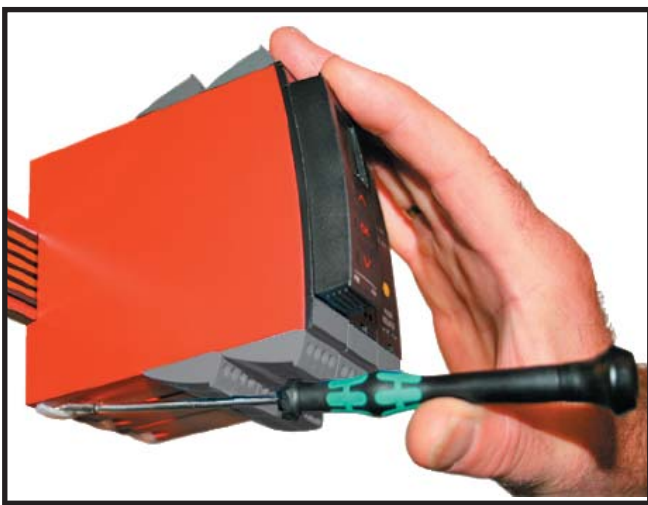
CLEANING:

When disconnected, the module may be cleaned with a cloth moistened with distilled water.

LIABILITY:

To the extent the instructions in this manual are not strictly observed, the customer cannot advance a demand against PR electronics A/S that would otherwise exist according to the concluded sales agreement.

HOW TO DISMANTLE SYSTEM 9000

**Picture 1:**

By lifting the bottom lock, the module is detached from the DIN rail.

EC DECLARATION OF CONFORMITY

As manufacturer

PR electronics A/S

hereby declares that the following product:

Type: 9410

Name: Power Control Unit

is in conformity with the following directives and standards:

The EMC Directive 2004/108/EC and later amendments

EN 61326-1 : 2006

For specification of the acceptable EMC performance level, refer to the electrical specifications for the module.

The Low Voltage Directive 2006/95/EC and later amendments

EN 61010-1 : 2001

The ATEX Directive 94/9/EC and later amendments

EN 60079-0 : 2006 and EN 60079-15 : 2005

ATEX certificate: KEMA 07ATEX0152 X

No changes are required to enable compliance with the replacement standards:

EN 60079-0 : 2009

Notified body

KEMA Quality B.V. (0344)



Kim Rasmussen
Manufacture's signature

POWER CONTROL UNIT

9410

- *Distributes supply voltage to the power rail*
- *Optional connection of backup supply*
- *Approved for installation in Ex zone 2 / Div. 2*
- *Optional redundant supply for the power rail*
- *Must be installed on power rail, PR type 9400*

Application and advanced features

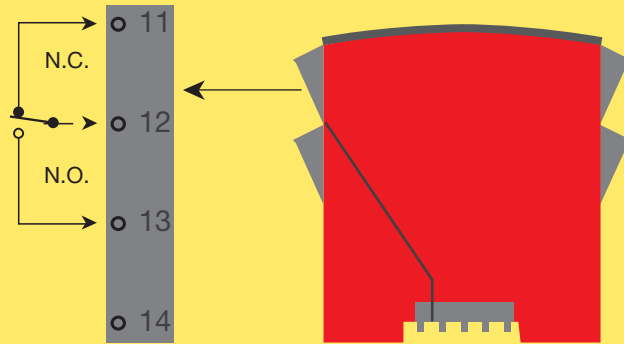
- The power control unit detects errors from any of the modules mounted on the power rail and transmits a collective alarm to the control system via the internal status relay.
- Optional connection of two power supplies - a primary supply and a backup supply.
- Redundant supply for the power rail can be obtained by mounting two 9410 modules connected to 2 separate power supplies (e.g. PR 9420).

Technical characteristics

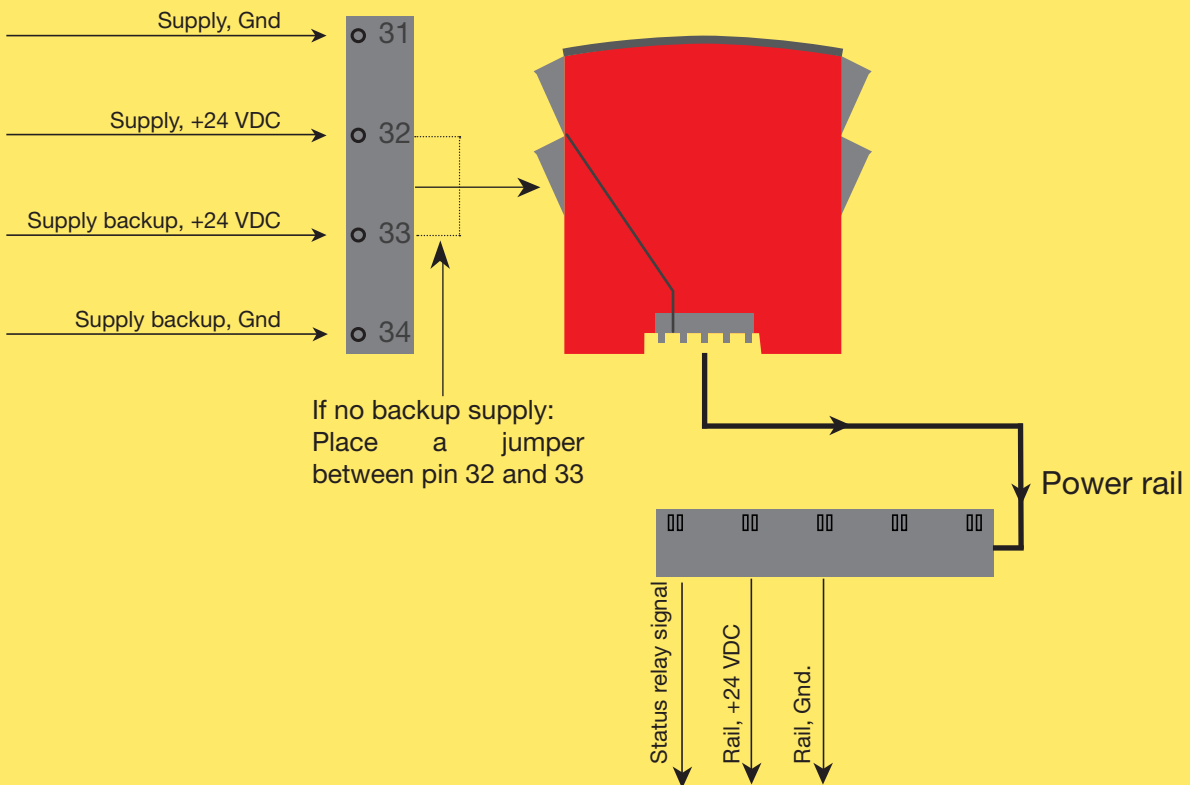
- The status relay will be energised when the following three conditions are met:
 1. Supply voltage is present on pin 31 and 32.
 2. Backup supply voltage is present on pin 34 and 33. (If the backup supply is not in use, a jumper must be placed between pins 32 and 33 - the jumper is delivered with the module).
 3. There are no error signals from the modules connected to the power rail.
- When a collective alarm is activated via the power rail, the status relay in the 9410 will be de-energised (pins 11, 12 and 13).
- Two green front LEDs indicate connection of supply and backup.
- A red LED indicates error status.

Applications

Module status relay from power rail



Power connection



Ex Zone 2 / FM Cl. 1, div. 2 or safe area

ORDER

9410 = Power Control Unit

Electrical specifications

Specifications range. -20°C to +60°C

Storage temperature -20°C to +85°C

Common specifications:

Max. consumption..... 96 W

Efficiency > 97,9%

Max. internal consumption. 2 W

Wire size (min. / max.). 0.13...2.08 mm² / AWG 26...14
.....stranded wire

Screw terminal torque..... 0.5 Nm

Relative humidity < 95% RH (non-cond.)

Dimensions (HxBxD) 109 x 23.5 x 104 mm

Protection degree..... IP20

Weight 140 g

Input:

Supply voltage,

double / reinforced isolation 21.6...26.4 VDC

Backup supply 21.6...26.4 VDC

Trig levels for voltage surveillance Error < 21 VDC

Output:

Output voltage @ 4 A Input voltage - 0.5 VDC

Output power, max..... 96 W

Output current, max.. 4 A

Output ripple Same as input ripple

Status relay in safe area:

Max. voltage. 250 VAC / 30 VDC

Max. current 2 AAC / 2 ADC

Max. AC power 500 VA / 60 W

Marine approval:

Det Norske Veritas, Ships & Offshore Stand. f. Certific. No. 2.4

GOST R approval:

VNIIM

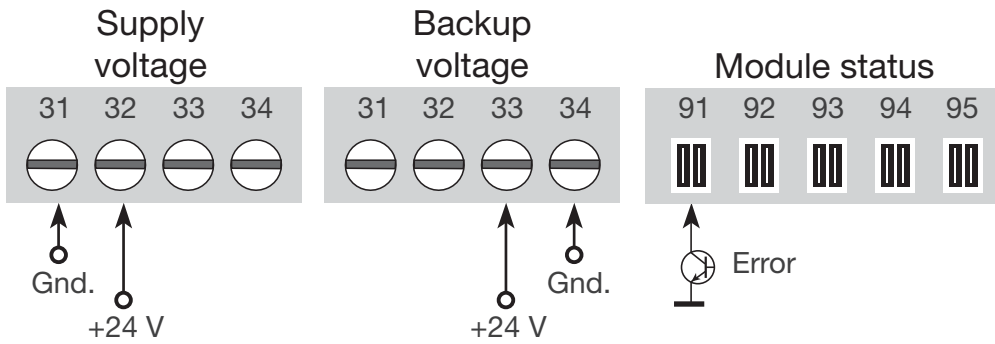
Observed authority requirements:

Standard:

EMC 2004/108/EC	EN 61326-1
LVD 2006/95/EC.....	EN 61010-1
ATEX 94/9/EC.....	EN 60079-0, EN 60079-15
IEC.....	IEC60079-0, IEC60079-15
FM	3600, 3611, 3810
UL, Standard for Safety	UL 61010-1

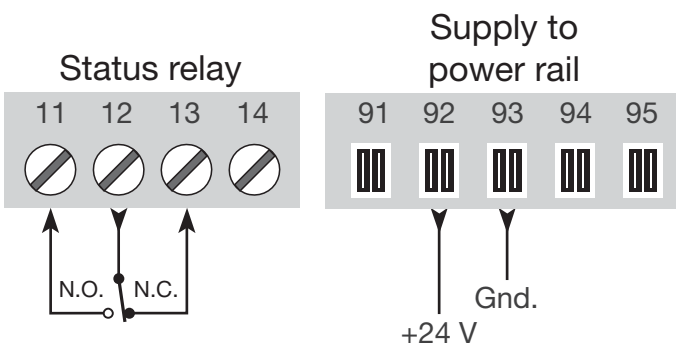
CONNECTIONS

Inputs:

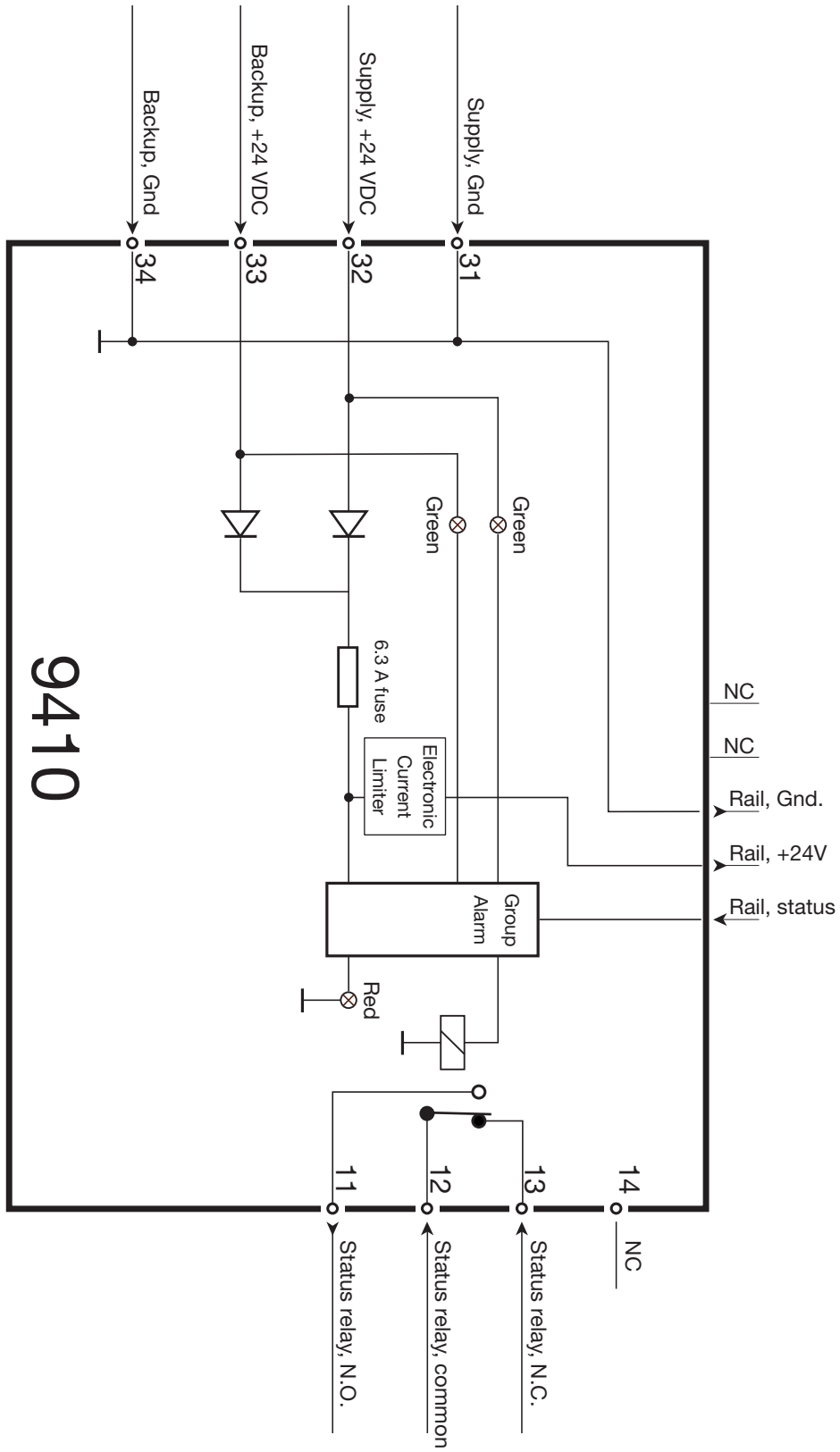


If no backup supply:
Place a jumper between
pin 32 and 33

Outputs:



BLOCK DIAGRAM



9410

NC = no connection

По вопросам продажи и поддержки обращайтесь:

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Единый адрес для всех регионов: pcn@nt-rt.ru || www.prelectronics.nt-rt.ru

