

DK**ADVARSEL**

Dette modul er beregnet for tilslutning til livsfarlige elektriske spændinger. Hvis denne advarsel ignoreres, kan det føre til alvorlig legemæssig skade eller teknisk ødelæggelse.

Før at undgå fare for elektriske stød og brand skal sikkerhedsreglerne overholdes, og vejledningerne skal følges.

Specifikationerne må ikke overskrides, og modulet må kun benyttes som beskrevet i det følgende.

Installationsvejledningen skal studeres omhyggeligt, før modulet tages i brug. Kun kvalificeret personale (teknikere) må installere dette modul. Hvis modulet ikke benyttes som beskrevet i denne installationsvejledning, så forringes modulets beskyttelsesforanstaltninger.

ADVARSEL

Der må ikke tilsluttes farlig spænding til modulet, før dette er fastmonteret, og følgende operationer bør kun udføres på modulet i spændingslös tilstand og under ESD-sikre forhold:

- Installation, ledningsmontage og -demontage.
- Fejlfinding på modulet.
- Reparation af modulet og udskiftning af skringer må kun foretages af PR electronics A/S.

ADVARSEL

Før at overholde sikkerhedsafstanden må der ikke tilsluttes både farlig og ikke-farlig spænding på modulets relækontakter. SYSTEM 5000 skal monteres på DIN-skinnerne fra DIN 46277.

Kommunikationsklemmer i SYSTEM 5000 har forbindelse til indgangsklemmer, hvori der kan forekomme farlige spændinger, og det må kun tilsluttes programmeringen-heden Loop Link via det medfølgende kabel.

SIKKERHEDSREGLER

Modtagelse og udpakning
Udpak modulet uden at beskadige det. Kontrollér ved modtagelsen, at modulene svarer til den bestilte. Indpakningen bør følge modulet, indtil dette er monteret på blivende plads.

Miljøhold
Undgå direkte sollys, kraftigt stov eller varme, mekaniske styrrelser og stød, og udsæt ikke modulet for regn eller kraftig fugt. Om nødvendigt skal opvarmning, ud over de opgivne grænser for omgivelstes temperatur, forhindres ved hjælp af ventilation.

Alle moduler hører til installationskategori II, forureningsgrad 2 og isolations-klasse II.

Installation
Modulet må kun tilsluttes af kvalificerede teknikere, som er bekendte med de tekniske udtryk, advarsler og instruktioner i installationsvejledningen, og som vil følge disse.

Hvis der er tvivl om modulets rette håndtering, skal der rettes henvedelse til den lokale forhandler eller alternativt direkte til PR electronics A/S.

Installation og tilslutning af modulene skal følge landets gældende regler for installation af elektrisk materiel bl.a. med hensyn til ledningstværn, for-skring og placering.

Beskrivelse af indgang / udgang og forsyningssforbindelser findes i produktmanuallen og på sideskiltet.

For moduler, som er permanent tilsluttet farlig spænding, gælder: For-skringens maksimale strømstørrelse er 10 A, og den skal sammen med en afbryder placeres let tilgængeligt og tæt ved modulet. Afbryderen skal mærkes således, at der ikke er tvivl om, at den afbryder spændingen til modulet.

UL-installasjonskrav

Brug kun 60/75°C kobberledninger.

Må kun anvendes i forureningsgrad 2 eller bedre.

Max. omgivelstes temperatur 60°C

Max. ledningskvadrat AWG 26-14

UL file number E231911

Kalibrering og justering

Under kalibrering og justering skal måling og tilslutning af eksterne spændinger udføres i henhold til denne installationsvejledning, og teknikeren skal benytte sikkerheds-måttet korrekte værktøj og instrumenter.

Rengøring

Modulet må i spændingslös tilstand, rengøres med en klud let fugtet med destilleret vand.

PC-programmering af SYSTEM 5000

Modul konfigureres til den aktuelle opgave ved hjælp af en PC og PR electronics A/S' kommunikationsinterface Loop Link. Kommunikationsinterfacet er galvanisk isoleret, så PC'en port er optimalt beskyttet.

Kommunikationen er 2-vejs, så modulene opsætning kan hentes ind i PC'en, og opsætningen i PC'en kan sendes til modulet. For de brugere, der ikke selv vil foretage opsætning, kan modulet leveres konfigureret efter oplyst specifikation: indgangstype, måleområde, fejlersædte og udgangssignal.

Loop Link må ikke benyttes til kommunikation med moduler, der er installeret i, modtager signaler fra eller sender signaler til Ex-område

Electriske specifikationer

Specifikationsområde -20°C til +60°C

Forsyningsspænding, universel 21,6...253 VAC

eller 19,2...300 VDC

Isolationsspænding - 5131 7,5...35 VDC

Max. forbrug 1 / 2 kanaler 2,1 W / 2,8 W

5114 2,4 W / -

5116 0,8 W / 1,6 W

5121 3,75 kVAC / 250 VAC

PEL/SELV IEC 61140

Kalibrerings-temperatur 20...28°C

EMC-immunitet < ±0,5% af span

Relativ luftfugtighed < 95% RH (rik-kond.)

Mål (HxDxW) 109 x 23,5 x 130 mm

Kapslingsklasse IP20

Relæudgang - 5116

Maks. spænding 250 VAC / VDC

Maks. strøm 2 A

Maks. AC-effekt 500 VA

Maks. DC-strøm, belastningsmodstand:

@ Urelas ≤ 30 VDC 2 ADC

@ Urelas > 30 VDC [1380xU_{relas}²x1.0085]² ADC

Godkendelser

* DNV, Ships & Offshore TAA0000101

** c UL us, UL 50B E231911

Overholte myndighedskrav

EMC 2014/30/EU

LVD 2014/35/EU

***ATEX 2014/34/EU

RoHS 2011/65/EU

EAC TR-CU 020/2011

***EAC Ex TR-CU 012/2011

* Gælder ikke 5131A/B

** Gælder kun 5116A/B

*** Gælder kun 5xxx B-version (Ex.)

Electrical specifications

Specifications range -20°C to +60°C

Supply voltage, universal 21,6...253 VAC

or 19,2...300 VDC

Supply voltage - 5131 7,5...35 VDC

Max. required power, 1 ch. 2 ch: 2,1 W / 2,8 W

5114 & 5115 2,4 W / -

5116 0,8 W / 1,6 W

5121 3,75 kVAC / 250 VAC

PEL/SELV IEC 61140

Calibration temperature 20...28°C

EMC immunity influence < ±0,5% of span

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

Dimensions (HxWxD) 109 x 23,5 x 130 mm

Protection degree IP20

Relay output - 5116

Max. voltage 250 VAC / VDC

Max. AC current 2 A

Max. AC power 500 VA

Max. DC current, resistive load:

@ Urelas ≤ 30 VDC 2 ADC

@ Urelas > 30 VDC [1380xU_{relas}²x1.0085]² ADC

Approvals

* DNV, Ships & Offshore TAA0000101

** c UL us, UL 50B E231911

Observed authority requirements

EMC 2014/30/EU

LVD 2014/35/EU

***ATEX 2014/34/EU

RoHS 2011/65/EU

EAC TR-CU 020/2011

***EAC Ex TR-CU 012/2011

* Does not apply to 5131A/B

** Only applies to 5116A/B

*** Only applies to 5xxx B-version (Ex.)

Spécifications

Plage de température -20°C à +60°C

Tension d'alimentation 21,6...253 Vca

ou 19,2...300 Vdc

Tension d'alimentation - 5131 7,5...35 VDC

Max. puissance requise, 1 / 2 ch: 2,1 W / 2,8 W

5114 & 5115 2,4 W / -

5116 0,8 W / 1,6 W

5121 3,75 kVca / 250 Vca

PEL/SELV IEC 61140

Calibration temperature 20...28°C

EMC immunity influence < ±0,5% of the EEC

Humidity relative < 95% RH (non cond.)

Dimensions (HxWxD) 109 x 23,5 x 130 mm

Degré de protection IP20

Sortie relais - 5116

Tension max 250 Vca / Vcc

Courant max 2 A

Puissance ca max 500 VA

Courant cc max, charge résistive:

@ Urelas ≤ 30 Vcc 2 Acc

@ Urelas > 30 Vcc [1380xU_{relas}²x1.0085]² ADC

Approvals

* DNV, Ships & Offshore TAA0000101

** c UL us, UL 50B E231911

Observed authority requirements

EMC 2014/30/EU

LVD 2014/35/EU

***ATEX 2014/34/EU

RoHS 2011/65/EU

EAC TR-CU 020/2011

***EAC Ex TR-CU 012/2011

* Does not apply to 5131A/B

** Only applies to 5116A/B

*** Only applies to 5xxx B-version (Ex.)

Spécifications

Plage de température -20°C à +60°C

Tension d'alimentation 21,6...253 Vca

ou 19,2...300 Vdc

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EU DECLARATION OF CONFORMITY
(5114Doc_102)



As manufacturer
PR electronics A/S, Lerbakken 10, DK-8410 Rønde
hereby declares that the following products:
Type: 5114
Name: Programmable transmitter
From serial no.: 161966001

is in conformity with the following directives and standards:

The EMC Directive 2014/30/EU and later amendments
EN 61326-1 : 2013

Immunity test requirements for equipment intended to be used in an industrial electromagnetic environment. For specification of the acceptable EMC performance level, refer to the electrical specifications for the device.

The Low Voltage Directive 2014/35/EU and later amendments
EN 61010-1 : 2010

The ATEX Directive 2014/34/EU and later amendments
EN 50014 : 1997 E incl. A1+A2, EN 50020 : 2002 E
and EN 50281-1-1 : 1998 incl. A1
ATEX certificate: DEMKO 99ATEX124571 (5114B)

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

EN 60079-0 : 2012 + A11 : 2013 and EN 60079-11 : 2012

ATEX notified body (type approval)
UL International Demko A/S
Borupvang 5
DK-2750 Ballerup

The RoHS2 Directive 2011/65/EU and later amendments
EN 50581 : 2012

Notified body 0344
DEKRA Certification B.V.
Meander 1051, 6825 MJ Arnhem
P.O. Box 5185, 6802 ED Arnhem
The Netherlands

Stig Lindemann, CTO
Manufacturer's signature

Rønde, 16 March 2018

EU DECLARATION OF CONFORMITY
(5115Doc_102)



As manufacturer
PR electronics A/S, Lerbakken 10, DK-8410 Rønde
hereby declares that the following products:
Type: 5115
Name: Signal calculator
From serial no.: 161966001

is in conformity with the following directives and standards:

The EMC Directive 2014/30/EU and later amendments
EN 61326-1 : 2013

Immunity test requirements for equipment intended to be used in an industrial electromagnetic environment. For specification of the acceptable EMC performance level, refer to the electrical specifications for the device.

The Low Voltage Directive 2014/35/EU and later amendments
EN 61010-1 : 2010

The ATEX Directive 2014/34/EU and later amendments
EN 50014 : 1997 E incl. A1+A2, EN 50020 : 2002 E
and EN 50281-1-1 : 1998 incl. A1
ATEX certificate: DEMKO 99ATEX124571 (5115B)

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

EN 60079-0 : 2012 + A11 : 2013 and EN 60079-11 : 2012

ATEX notified body (type approval)
UL International Demko A/S
Borupvang 5
DK-2750 Ballerup

The RoHS2 Directive 2011/65/EU and later amendments
EN 50581 : 2012

Notified body 0344
DEKRA Certification B.V.
Meander 1051, 6825 MJ Arnhem
P.O. Box 5185, 6802 ED Arnhem
The Netherlands

Stig Lindemann, CTO
Manufacturer's signature

Rønde, 16 March 2018

EU DECLARATION OF CONFORMITY
(5116Doc_104)



As manufacturer
PR electronics A/S, Lerbakken 10, DK-8410 Rønde
hereby declares that the following products:
Type: 5116
Name: Programmable transmitter
From serial no.: 201864001

is in conformity with the following directives and standards:

The EMC Directive 2014/30/EU and later amendments
EN 61326-1 : 2013

Immunity test requirements for equipment intended to be used in an industrial electromagnetic environment. For specification of the acceptable EMC performance level, refer to the electrical specifications for the device.

The Low Voltage Directive 2014/35/EU and later amendments
EN 61010-1 : 2010

The ATEX Directive 2014/34/EU and later amendments
EN IEC 60079-0 : 2018 and EN 60079-11 : 2012
ATEX certificate: KEMA 04ATEX1316 X (5116B)

ATEX notified body (type approval)
DEKRA Certification B.V.
Meander 1051, 6825 MJ Arnhem
P.O. Box 5185, 6802 ED Arnhem
The Netherlands

The RoHS2 Directive 2011/65/EU and later amendments
EN 50581 : 2012

Notified body 0344
DEKRA Certification B.V.
Meander 1051, 6825 MJ Arnhem
P.O. Box 5185, 6802 ED Arnhem
The Netherlands

Stig Lindemann, CTO
Manufacturer's signature

Rønde, 3 March 2021

EU DECLARATION OF CONFORMITY
(5131Doc_102)



As manufacturer
PR electronics A/S, Lerbakken 10, DK-8410 Rønde
hereby declares that the following products:
Type: 5131
Name: 2-wire programmable transmitter
From serial no.: 161966001

is in conformity with the following directives and standards:

The EMC Directive 2014/30/EU and later amendments
EN 61326-1 : 2013

Immunity test requirements for equipment intended to be used in an industrial electromagnetic environment. For specification of the acceptable EMC performance level, refer to the electrical specifications for the device.

The Low Voltage Directive 2014/35/EU and later amendments
EN 61010-1 : 2010

The ATEX Directive and later amendments

EN 50014 : 1997 E incl. A1+A2, EN 50020 : 2002 E

and EN 50281-1-1 : 1998 incl. A1

ATEX certificate: DEMKO 99ATEX124572 (5131B)

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

EN 60079-0 : 2012 + A11 : 2013 and EN 60079-11 : 2012

ATEX notified body (type approval)

UL International Demko A/S
Borupvang 5
DK-2750 Ballerup

The RoHS2 Directive 2011/65/EU and later amendments
EN 50581 : 2012

Notified body 0344
DEKRA Certification B.V.
Meander 1051, 6825 MJ Arnhem
P.O. Box 5185, 6802 ED Arnhem
The Netherlands

Stig Lindemann, CTO
Manufacturer's signature

Rønde, 16 March 2018

ATEX Installation drawing 5116QA01-V3R0



5116B

For safe installation of 5116B the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.

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

ATEX Certificate KEMA 04ATEX1316X

Marking



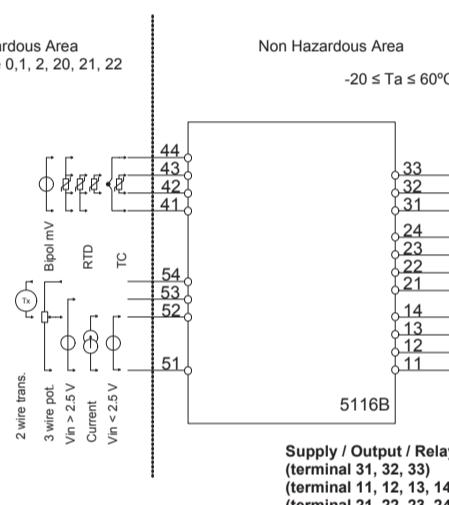
II (1) G [Ex ia Ga] IIC/IIB/IIA
II (1) D [Ex ia Da] IIIC

Standards EN 60079-0 : 2018, EN 60079-11 : 2012

Hazardous Area
Zone 0, 1, 2, 20, 21, 22

Non Hazardous Area

-20 ≤ Ta ≤ 60°C



Supply / Output / Relay
(terminal 31, 32, 33)
(terminal 11, 12, 13, 14)
(terminal 21, 22, 23, 24)

U_m: 253 VAC

Terminal	Uo	Io	Po	Lo			Co		
				IIC	IIB	IIA	IIC	IIB	IIA
41, 42, 44, 43	7.5 V	2.2 mA	4.2 mW	1 H	1 H	1 H	6 µF	6 µF	6 µF
51, 52, 53	7.5 V	2.2 mA	4.2 mW	1 H	1 H	1 H	6 µF	6 µF	6 µF
51, 52, 53, 54	28 V	93 mA	650 mW	3 mH	16 mH	31 mH	75 nF	645 nF	2 µF

Terminal (31, 33)

Supply:

AC Voltage 21.6 – 253 VAC
DC Voltage 19.2 – 300 VDC
Power max. 3.0 W

Terminal (11, 12, 13, 14)

Analog output:

Current 0/4 – 20 mA
Voltage 0 – 10 VDC

Terminal (21, 22) and (23, 24)

Relay 1 and 2:

Voltage max. 250 VAC / VDC
AC Power max. 500 VA
AC Current max. 2 AAC
DC Current @ ≤ 30VDC 2ADC
DC Current @ ≥ 30VDC 1380 * U² * 1.0085^U

Installation notes
The intrinsically safe circuits are galvanically connected to the communications interface unit.

The communications interface may only be connected temporally, under the condition that the connectors with terminal numbers 41..44 and 51..54 are disconnected on the 5116B.

When a higher ingress protection than IP20 is required, this has to be achieved by an additional enclosure which is suitable for the applicable environmental conditions.

In type of protection [Ex ia Da] the parameters for intrinsic safety for gas group IIIB are applicable

When two or more units are placed next to each other it has to be assured that all the terminal numbers 41..44 and 51..54 are placed on the same side and are separated from the non-intrinsically safe circuits of the units which could be mounted above or below it.

Each combination of circuits (to terminations 41..44 or to terminations 51..53 or to terminations 51..54) shall be connected via separated cables or if the combinations are in one cable shall be type A or B in accordance with EN60079-14.

Programming of the 5116B module is done by use of Loop Link 5909 outside hazardous area. If the module is installed in hazardous area programming is allowed only if the area is known to be safe.

FM CONTROL DRAWING NO. 5116QF01

Hazardous (Classified) Location

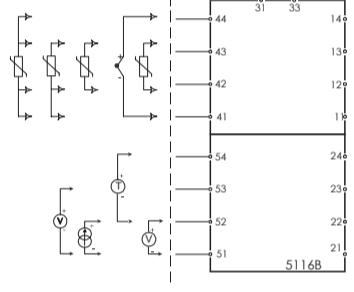
Unclassified Location or

Hazardous (Classified) Location
Class I, Division 1, Group A,B,C,D
Class II, Division 1 Group E, F, G
Class III, Division 1
Class I , Zone 0 and 1, Group IIC, IIB, IIA
Class II, Zone 20 and 21

Class I, Division 2, Group A,B,C,D
Class I , Zone 2, Group IIC, IIB, IIA

Simple Apparatus or
Intrinsically safe apparatus
with entity parameters:

Vmax (Ui) ≥ Vt (Uo)
Imax (Ii) ≥ It (Io)
Pi ≥ Po
Ca ≥ C_{able} + Ci
La ≥ L_{able} + Li
The sum of capacitance and
inductance of cable and
intrinsic safe equipment must
be less or equal to Ca and La



Terminal	Voc (V)	Isc (mA)	Po (mW)	La (mH)		Ca (µF)	
A,B	C,E	D,F,G	A,B	C,E			
<th