

DK ADVARSEL
 Dette modul er beregnet for tilslutning til livsfarlige elektriske spændinger. Hvis denne advarsel ignoreres, kan det føre til alvorlig legemsbeskadigelse eller mekanisk ødelæggelse.
 For at undgå faren for elektriske stød og brand skal sikkerhedsreglerne overholdes, og vejledningerne skal følges.
 Specifikationer 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.

DK ADVARSEL
 Der må ikke tilsluttes farlig spænding til modulet, før dette er fastmonteret, og følgende operationer bør kun udføres på modulet i spændingsløs tilstand og under ESD-sikre forhold:
 Installation, ledningsmontage og -demontage.
 Fejlfinding på modulet.
 Reparation af modulet og udskiftning af sikringer må kun foretages af PR electronics A/S.

DK ADVARSEL
 For at overholde sikkerhedsafstande må der ikke tilsluttes både farlig og ikke-farlig spænding på modulets relekontakt. SYSTEM 5000 skal monteres på DIN-skinne efter DIN 46277.
 Kommunikationsstikket i SYSTEM 5000 har forbindelse til indgangsklemmer, hvor der kan forekomme farlige spændinger, og det må kun tilsluttes programmeringsenheden Loop Link ved det medfælgende kabel. Ved forbindelse af SYSTEM 5000 til Loop Link skal anvisningerne for egensikker installation følges.

DK SIKKERHEDSREGLER
Montage og opbakning
 Udpak modulet uden at beskadige det. Kontrollér ved modtagelsen, at modultypen svarer til den bestilte. Indpakningen bør følge modulet, indtil dette er monteret på blivende plads.
Miljøforhold
 Undgå direkte sollys, kraftigt støv eller varme, mekaniske rystelser og stød, og udsæt ikke modulet for regn eller kraftig fugt. Om nødvendigt skal opvarmning, ud over de opgivne grænser for omgivelsestemperatur, forhindres ved hjælp af ventilation.
 Alle moduler hører til Installationskategori II, Forureningsgrad 1 og Isolationsklasse II.

DK 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 henvendelse til den lokale forhandler eller alternativt direkte til PR electronics A/S.
 Installation og tilslutning af modulet skal følge lændens gældende regler for installation af elektrisk materiel bl.a. med hensyn til ledningsværnsnit, for-sikring og placering.

DK Beskrivelse af indgang / udgang og forsyningsforbindelse
 findes i produktmanualen og på sideskiltet.
 For moduler, som er permanent tilsluttet farlig spænding, gælder: Forsikringens maksimale størrelse 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.

DK UL-installationskrav
 Brug kun 60/75°C kobberledninger.
 Må kun anvendes i forureningsgrad 2 eller bedre.
 Max. ledningskvadrat 1 x 2,5 mm²
 UL fil-nummer..... E231911

DK Kalibrering og justering
 Under kalibrering og justering skal måling og tilslutning af eksterne spændinger udføres i henhold til denne installationsvejledning, og teknikeren skal benytte sikkerhedsmæssigt korrekte værktøjer og instrumenter.
DK Rengøring
 Modulet må, i spændingsløs tilstand, rengøres med en klud let fugtet med destilleret vand.

DK DIP-switch programmering af 5104, 5105 & 5202
 Husk først at demontere tilslutningsklemmerne med farlig spænding.
 1) McCullet frigøres fra DIN-skinne ved at løfte i den nederste lås (se billede 2).
 2) Printet udtages derefter ved at løfte i den øverste lås og samtidig trække ud i frontpladen. Nu kan switche og jumbere ændres (se billede 3).
DK PC-programmering af SYSTEM 5000
 Modulet konfigureres til den aktuelle opgave ved hjælp af en PC og PR electronics A/S kommunikationsinterface Loop Link. Det er muligt at konfigurere modulet både med og uden tilsluttet forsyningsspænding, idet kommunikationsinterface leverer nødvendig forsyning til oplysningerne. Kommunikationsinterface er galvanisk isoleret, så PC's port er optimalt beskyttet. Kommunikationen er 2-vejs, så modulets oplysninger kan hentes ind i PC'en, og oplysningerne i PC'en kan sendes til modulet. For de brugere, der ikke selv vil foretage oplysning, kan modulet leveres konfigureret efter oplyst specifikation: indgangstype, måleområde, følerfejlsdetektering og udgangssignal.

DK Cleaning
 When disconnected, the device may be cleaned with a cloth moistened with distilled water.
DK DIP-switch programming of 5104, 5105 & 5202
 First, remember to demount the connectors with hazardous voltages.
 1) By lifting the bottom lock, the module is detached from the DIN rail (see picture 2).
 2) Then, by lifting the upper lock and pulling the front plate simultaneously, the PCB is removed. Switches and jumpers can now be adjusted (see picture 3).
DK PC programming of SYSTEM 5000
 The device is configured to the present task by way of a PC and PR electronics A/S communications interface Loop Link. The device can be configured with or without a connected supply voltage as the communications interface supplies the necessary voltage to the set-up. The communications interface is galvanically isolated to protect the PC port. Communication is 2-way to allow the retrieval of the device set-up into the PC and to allow the transmission of the PC set-up to the device. For users who do not wish to do the set-up themselves, the device can be delivered configured according to customer specifications: input type, measurement range, sensor error detection, and output signal.

DK Relæudgang - 5116, 5202, 5223, 5225 & 5420
 Max. spænding 250 VRMS
 Max. strøm 2 A / AC
 Max. AC-effekt 100 VA
 Max. AC-effekt - 5223 & 5225 500 VA
 Max. belastning ved 24 VDC 1 A

DK Godkendelser
 EAC-godkendelse Ja
 EMC 2004/108/EF EN 61326-1
 LVD 2006/95/EF EN 61010-1
 *Det Norske Veritas, Ships & Offshore Stand. f. Certific. No. 2.4
 **UL Standard for Safety UL 508
 ***PELV/SELV IEC 364-4-41 and EN 60742
 ****ATEX 94/9/CE EN 50014, EN 50020 og EN 50281-1-1
 *****EAC Ex godkendelse Ja

DK Elektriske specifikationer
 Specifikationsområde -20°C til +60°C
 Forsyningsspænding, universel 21,6...253 VAC eller 19,2...300 VDC
 Forsyningsspænding - 5102 & 5225 19,2...28,8 VDC
 Forsyningsspænding - 5131 7,5...35 VDC
 *Isolationsspænding, test/drift 3,75 kVAC / 250 VAC
 Gælder ikke 5102
 Kalibreringstemperatur 20...28°C
 EMC-immunitet < +0,5% af span
 Relativ luftfugtighed < 95% RH (ikke-kond.)
 Mål (HxBxD) 109 x 23,5 x 130 mm
 Kapslingsklasse IP20

DK Electrical specifications
 Specifications range -20°C to +60°C
 Supply voltage, universal 21,6...253 VAC or 19,2...300 VDC
 Supply voltage - 5102 & 5225 19,2...28,8 VDC
 Supply voltage - 5131 7,5...35 VDC
 *Isolation voltage, test / operation 3,75 kVAC / 250 VAC
 **Does not apply to 5102
 Temperature of étalonnage 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
 Degree of protection IP20
Relay output - 5116, 5202, 5223, 5225 & 5420
 Max. voltage 250 VRMS
 Max. current 2 A / AC
 Max. AC power 100 VA
 Max. AC power - 5223 & 5225 500 VA
 Max. load at 24 VDC 1 A

DK Approvals
 EAC approval Yes
 EMC 2004/108/EC EN 61326-1
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DK Approbations
 Approbation EAC Oui
 CEM 2004/108/CE EN 61326-1
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 *****Approbation EAC Ex Oui

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 *** Applc. pour 5104B, 5105B, 5106B, 5107B, 5202B & 5203B
 **** Does not apply to 5102
 ***** Only applies to 5xxx B version (I, S.)

DK Applc. pour 5104A/B, 5105B, 5114A/B, 5115A/B, 5116A/B, 5116A/B, 5106B, 5107B, 5202B & 5203B
 **** Uniquement applicable pour 5xxx version B (S.)

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UL CONTROL DRAWING 5104QU01

Hazardous (Classified) Location

Class I, Division 1, Group A,B,C,D
Class I, Zone 0 and 1, Group IIC
Class II, Division 1 Group E, F, G

Nonhazardous

Associated apparatus
Galvanically Isolated

Intrinsically safe apparatus
entity parameters:

$$V_{max}(U_i) \geq V_t(U_o)$$

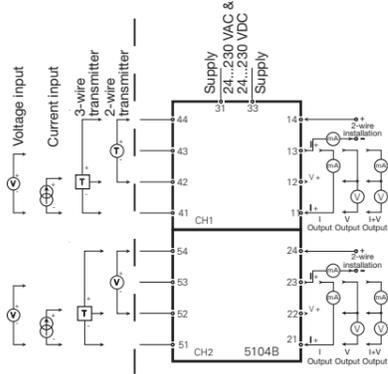
$$I_{max}(I_i) \geq I_t(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



5104B Associated apparatus parameters			
CH1	Terminals 41 to 44		
CH2	Terminals 51 to 54		
Vt (Uo)	28 V		
It (Io)	93 mA		
Po	0.65 W		
	IIC / grp. A,B	IIB / grp. C	IIA / grp.D
Ca (Co)	0.052 μF	0.44 μF	1.45 μF
La (Lo)	2.4 mH	12 mH	20 mH

Installation notes:

- The maximum nonhazardous location voltage is 250VAC/DC.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- The terminals of the two individual channels shall not be interconnected in any way.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C copper conductors with wire size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.

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UL CONTROL DRAWING 5105QU01

Hazardous (Classified) Location

Class I, Division 1, Group A,B,C,D
Class I, Zone 0 and 1, Group IIC
Class II, Division 1 Group E, F, G

Nonhazardous

Associated apparatus
Galvanically isolated

Intrinsically safe apparatus
entity parameters:

$$V_{max}(U_i) \geq V_{oc}(U_o)$$

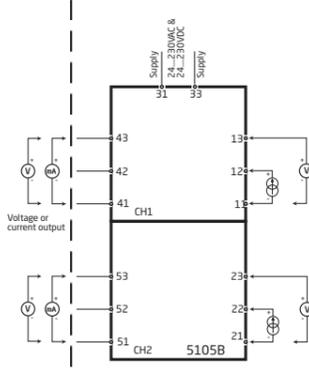
$$I_{max}(I_i) \geq I_{sc}(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



5105B Associated apparatus parameters			
CH1	Terminals 41 to 43		
CH2	Terminals 51 to 53		
Voc (Uo)	28 V		
Isc (Io)	93 mA		
Po	0.65 W		
	IIC / grp. A,B	IIB / grp. C	IIA / grp.D
Ca (Co)	0.052 μF	0.44 μF	1.45 μF
La (Lo)	2.4 mH	12 mH	20 mH

Installation notes:

- The maximum nonhazardous location voltage is 250 VAC/DC.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- The terminals of the two individual channels shall not be interconnected in any way.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C copper conductors with wire size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.

Rev. AA 2003-02-12

UL CONTROL DRAWING 5106QU01

Hazardous (Classified) Location

Class I, Division 1, Group A,B,C,D
Class I, Zone 0 and 1, Group IIC
Class II, Division 1 Group E, F, G

Nonhazardous

Associated apparatus
Galvanically Isolated

Intrinsically safe apparatus
entity parameters:

$$V_{max}(U_i) \geq V_t(U_o)$$

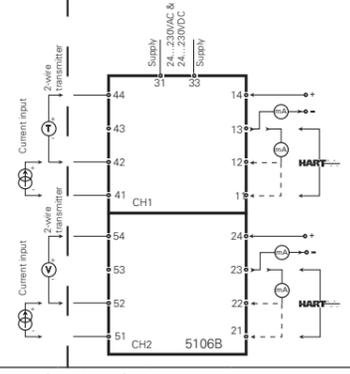
$$I_{max}(I_i) \geq I_t(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



5106B Associated apparatus parameters			
CH1	Terminals 44 to 41,42		Terminals 41 to 42
CH2	Terminals 54 to 51,52		Terminals 51 to 52
Vt (Uo)	28 V		10V
It (Io)	93 mA		2 mA
Po	0.65 W		5 mW
	IIC / grp. A, B	IIB / grp. C	IIA / grp.D
Ca (Co)	0.06 μF	0.52 μF	1.72 μF
La (Lo)	2.4 mH	12 mH	20 mH
	IIC / grp. A, B	IIB / grp. C	IIA / grp.D
	0.06 μF	0.52 μF	1.72 μF
	2.4 mH	12 mH	20 mH

Installation notes:

- The maximum nonhazardous location voltage is 250VAC/DC.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- The terminals of the two individual channels shall not be interconnected in any way.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C copper conductors with wire size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.

UL CONTROL DRAWING 5107QU01

Hazardous (Classified) Location

Class I, Division 1, Group A,B,C,D
Class I, Zone 0 and 1, Group IIC
Class II, Division 1 Group E, F, G

Nonhazardous

Associated apparatus
Galvanically isolated

Intrinsically safe apparatus
entity parameters:

$$V_{max}(U_i) \geq V_{oc}(U_o)$$

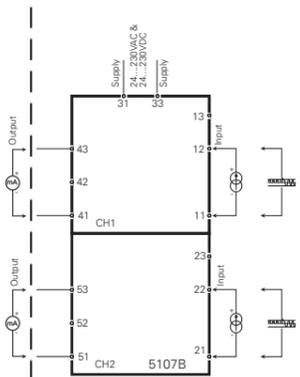
$$I_{max}(I_i) \geq I_{sc}(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



5107B Associated apparatus parameters			
CH1	Terminals 41 to 43		
CH2	Terminals 51 to 53		
Voc (Uo)	28 V		
Isc (Io)	93 mA		
Po	0.65 W		
	IIC / grp. A,B	IIB / grp. C	IIA / grp.D
Ca (Co)	0.06 μF	0.52 μF	1.72 μF
La (Lo)	2.4 mH	12 mH	20 mH

Installation notes:

- The maximum nonhazardous location voltage is 250 VAC/DC.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- The terminals of the two individual channels shall not be interconnected in any way.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C copper conductors with wire size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.

Rev. AA 2003-01-22

UL CONTROL DRAWING 5202QU01

Hazardous (Classified) Location

Class I, Division 1, Group A,B,C,D
Class I, Zone 0 and 1, Group IIC
Class II, Division 1 Group E, F, G

Nonhazardous

Associated apparatus
Galvanic Isolated

Intrinsically safe apparatus
entity parameters:

$$V_{max}(U_i) \geq V_t(U_o)$$

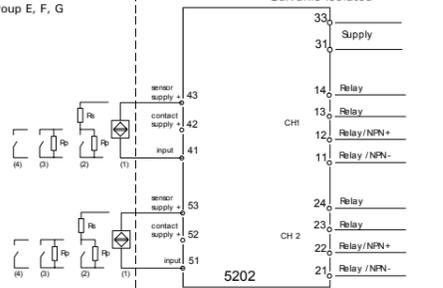
$$I_{max}(I_i) \geq I_t(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



5202B Associated apparatus parameters			
CH1	Terminals 41 to 43		
CH2	Terminals 51 to 53		
Vt (Uo)	10.6 V		
It (Io)	13.8 mA		
Po	0.038 W		
	IIC / grp. A, B	IIB / grp. C	IIA / grp.D
Ca (Co)	1.9 μF	4.0 μF	50 μF
La (Lo)	160 mH	600 mH	1 H
Relay output 11 - 14 , 21 - 24			
Voltage	250V AC, 100 VA		
Current	2 A AC, 100 VA		
24VDC	1 A DC		
Pilot Duty	120/240 V AC, 100V AC		
NPN output 11 - 12, 21 - 22			
General purpose	30V DC, 80 mA		
Pilot duty	30V DC, 80 mA		

Installation notes:

- The maximum nonhazardous location voltage is 250VAC/dc.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- The terminals of the two individual channels shall not be interconnected in any way.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C Copper Conductors with Wire Size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.
- If cable parameters are unknown C_{cable} may be set to 60pF/ft and L_{cable} may be set to 0.20 μH/ft

Rev. AA 2003-09-19

UL CONTROL DRAWING 5203QU01

Hazardous (Classified) Location

Class I, Division 1, Group A,B,C,D
Class I, Zone 0 and 1, Group IIC
Class II, Division 1 Group E, F, G

Nonhazardous

Associated apparatus
Galvanic Isolated

Intrinsically safe apparatus
entity parameters:

$$V_{max}(U_i) \geq V_t(U_o)$$

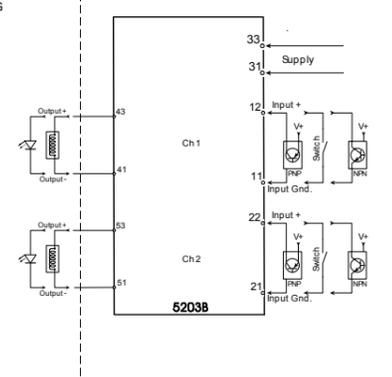
$$I_{max}(I_i) \geq I_t(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



5203B Associated apparatus parameters									
Type	F			H			I		
Vt (Uo)	28 V			28 V			28 V		
It (Io)	115 mA			110 mA			93 mA		
Po	0.81 W			0.77 W			0.65 W		
Group	A,B and IIC	C and IIB	D and IIA	A,B and IIC	C and IIB	D and IIA	A,B and IIC	C and IIB	D and IIA
La (Lo)	1.6 mH	5.0 mH	16mH	2.0 mH	8 mH	20 mH	2.4 mH	9 mH	25 mH
Ca (Co)	0.06 μF	0.52 μF	1.7 μF	0.06 μF	0.52 μF	1.7 μF	0.06 μF	0.52 μF	1.7 μF

Installation notes:

- The maximum nonhazardous location voltage is 250VAC/dc.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- The terminals of the two individual channels shall not be interconnected in any way.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C Copper Conductors with Wire Size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.
- If cable parameters are unknown C_{cable} may be set to 60pF/ft and L_{cable} may be set to 0.20 μH/ft

Rev. AA 2003-09-19

FM CONTROL DRAWING NO. 5116QF01

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

Unclassified Location

or

Hazardous (Classified) Location
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:

$$V_{max}(U_i) \geq V_t(U_o)$$

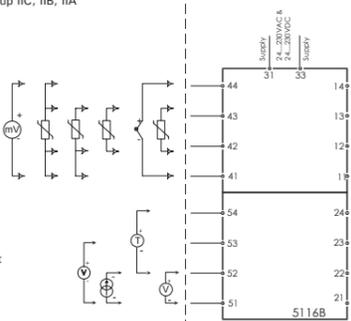
$$I_{max}(I_i) \geq I_t(I_o)$$

$$P_i \geq P_o$$

$$C_a \geq C_{cable} + C_i$$

$$L_a \geq L_{cable} + L_i$$

The sum of capacitance and inductance of cable and intrinsic safe equipment must be less or equal to C_a and L_a



Terminal	Voc (V)	Isc (mA)	Po (mW)	La (mH)			Ca (μF)		
				A,B	C,E	D,F,G	A,B	C,E	D,F,G
41,42,43,44	7.5	2.2	4.2	1000	1000	1000	6	36	445
51,52,53	7.5	2.2	4.2	1000	1000	1000	6	36	445
51,52,53,54	28	93.0	650	3	16	31	0.075	0.645	2

Installation notes:

- The maximum non hazardous location voltage is 250VAC/dc.
- The installation shall be in accordance with the National Electrical Code NFPA 70, Articles 504 and 505.
- 5116B is galvanic isolated and does not require grounding
- For Installation in Div 2 or Zone 2 the 5116B must be installed in an enclosure according to ANSI/ISA S82.
- Install in Pollution degree 2 or better
- Use 60 / 75 °C Copper Conductors with Wire Size AWG: (26 - 14).
- Warning: Substitution of components may impair intrinsic safety.

Rev. AA 2005-07-20