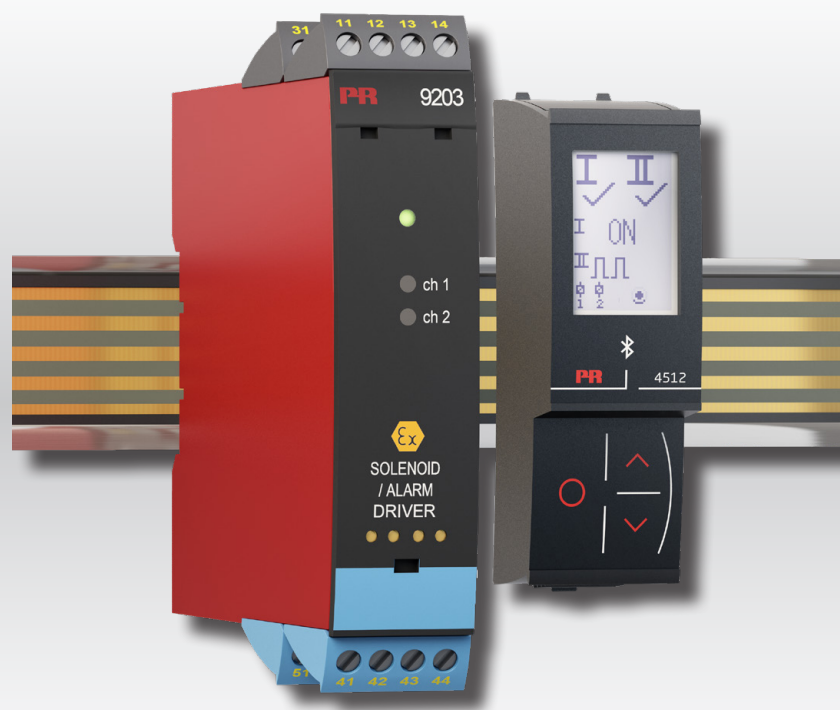


PERFORMANCE
MADE
SMARTER

产品手册

9203

电磁阀/警报灯驱动器



Segurança
INMETRO



温度

安全栅

通讯接口

多功能

隔离器

数显表

No. 9203V111-CN
产品版本：9203-003

PR
electronics

6 大特色产品

满足您的一切需求

单品出色·组合无敌

凭借创新型专利技术·信号调节更加简单·智能·产品组合由六大产品类组成·具备多种模拟量和数字量模块·涵盖上千种工业自动化应用·所有产品都符合甚至高于行业的最高标准·这可确保产品即便在最恶劣的环境条件下仍能可靠运行·5 年产品保修期·让您使用更安心·



Temperature

温度变送器和温度传感器系列产品·提供从温度测量点到系统控制一站式信号解决方案·从而在最大程度上保证信号的完整性·仅需一套点对点解决方案·您就可以在任何环境中将工业过程中的温度信号转换为模拟量信号·总线信号或数字通讯信号·该方案具备响应时间短·自动校准·传感器故障检测·低漂移和卓越 EMC 性能等诸多优点·



I.S. Interface

我们采用最严格的安全标准来检验产品·以期提供最安全的信号·秉承创新精神·我们已经在 SIL 2 全面评估本质安全型接口方面取得了开创性成就·其既高效又经济·效果卓著·成效斐然·模拟量和数字量本质安全栅种类齐全·同时提供多种输入输出·这使得 PR 标准成为一项易于实施的现场检验标准·在大型项目安装过程中·新背板方案大大简化安装和布线·且能与标准 DCS 系统无缝集成·



Communication

我们提供经济实惠·使用方便·面向未来的通讯接口·以便您能够访问所安装的 PR 产品·所有接口均可拆卸·并带有屏幕和按钮·可以显示过程值/诊断值和对参数进行配置·产品特定功能包括通过 Modbus 和蓝牙进行通讯·以及使用我们的便携式设备主管 (PPS) 应用程序进行远程访问·可用于 iOS 和 Android·



Multifunction

单品为多功能系列产品·可涵盖大量现场应用·可轻而易举按照您的现场标准进行配置·此种单品可适用多种应用方式·既节省安装和培训时间·又大大简化库存备件管理·该设备专为长期信号精度高·功耗低·抗电噪声优异·编程简单而设计·



Isolation

基于微处理器技术研发的 6 mm 隔离器·小巧精致·响应迅速·品质一流·以极低的总拥有成本为专用应用提供卓越性能和抗电磁干扰·可水平或垂直安装·装置间无需间隙·



Display

数显表系列以其灵活性和稳定性著称·该设备系列几乎满足过程信号读数显示的所有需求·并具有通用的输入和供电能力·无论哪种行业·无论环境条件何其苛刻·该设备均能实时测量过程值并提供用户友好型界面和值得信赖的继电器信号·

电磁阀/警报灯驱动器

9203

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警告



仅允许在符合 ESD 安全条件下，对断电设备执行以下操作：
一般安装、线缆连接与断开。
对设备进行故障排除。

设备维修和熔断器更换仅可由 PR electronics A/S 完成。

警告



切勿打开设备前面板，因为这样会损坏用来连接显示/配置面板 PR 4500 的连接器。
该设备不包含 DIP 拨码开关或跳线。

符号含义



带有感叹号的三角形：请在安装和调试设备前阅读手册，以免可能导致人身伤害或机械损坏的事故。警告/要求。潜在致命的情况。



CE 标志证明设备符合相关指令的基本要求。



UKCA 标志证明设备符合英国技术规范的基本要求。



双重绝缘符号表明设备受到双重或加强绝缘保护。



防爆设备已获得符合 ATEX 指令要求的认证，可用于连接安装于爆炸区域内的其他设备。参见附录中的安装图。

安全须知

定义

危险电压的范围定义为：75...1500 V DC 和 50...1000 V AC

技术人员指经过相关学习或培训的合格专业人员，能根据安全规定正确安装、操作和排除技术故障。

操作人员指熟悉本手册内容，在正常运行期间调节和操作旋钮或电位器的人。

收货和拆箱

打开设备包装，切勿损坏设备，检查设备型号是否与订购的设备型号相符。包装应始终随附设备，直至永久安装该设备。

环境

避免阳光直射、灰尘、高温、机械振动和冲击、雨水和严重潮湿环境。如有必要，应通过通风方式避免加热超过环境温度规定限值。

该设备必须安装在污染等级 2 或更优的环境中。

该设备设计为至少在 2000 米海拔以下是安全的。

该设备仅供室内使用。

安装

只有熟悉手册中的技术术语、警告和说明以及在操作时能够遵循该手册的技术人员才能连接设备。若对于设备的正确操作方法存有疑问，请与当地经销商联系；或直接联系

PR electronics A/S
www.prelectronics.com

除非电线配有电缆头，否则不得将绞线用于电源布线。

绞线应使用长度为 5 mm 的绝缘带或通过合适的绝缘端子 (例如线鼻子) 安装。

输入/输出和电源连接的说明显示在方框图中和设备侧面标签上。

该设备配有现场接线端子，需由具有双重/加强绝缘的电源模块供电。电源开关应易于接近并靠近设备。电源开关应标记为设备的断电装置。

针对在电源导轨 9400 上的安装，电源由电源控制装置 9410 供电。

设备制造年份由序列号的前两位数字指示。

校准和调整

在校准和调整期间，必须根据本手册的规范执行外部电压的测量和连接。技术人员必须使用安全可靠的工具和仪器。

常规操作

操作人员只能调整和操作安全固定在盘柜等装置中的设备，从而避免人身伤害和设备损坏。这意味着不存在触电危险，且设备易于接近。

清洁

断开连接后，可用浸有蒸馏水的布清洁设备。

责任

若未严格遵守本手册中的说明，则客户不能根据已签订的销售协议对 PR electronics A/S 提出索赔要求。

9203B1B SN: 123456789 TAG: Tag1234	
PR electronics A/S, Lerbakken 10, 8410 Roende pr@prelectronics.com, www.prelectronics.com Phone +45 8637 2877, Denmark.	
41: Output ch1 Ex GND 42: Output ch1 Ex 1+ 43: Output ch1 Ex 2+ 44: Output ch1 Ex 3+	31: Supply - 19.2 to 31.2 VDC 32: Supply + max. 3.5 W 33: Status Relay N.C. 34: Status Relay
51: Output ch2 Ex GND 52: Output ch2 Ex 1+ 53: Output ch2 Ex 2+ 54: Output ch2 Ex 3+	11: Input ch1 In - 12: Input ch1 In + 13: Input ch2 In - 14: Input ch2 In +
<input type="checkbox"/> (I) G Ex ia Gd IICIB/IIA DEKRA 21UKEX0181X <input type="checkbox"/> (I) G Ex ia Gd IIC DEKRA 07ATEX 0147 X <input type="checkbox"/> (M) Ex ia Mb I <input type="checkbox"/> nG Ex ec nC IIC T4 Gc DEKRA 21UKEX018EX <input type="checkbox"/> nG Ex ec nC IIC T4 Gc DEKRA 07ATEX 0147 X	<input type="checkbox"/> Ex ia Gd IICIB/IIA <input type="checkbox"/> Ex ia Gd IIC <input type="checkbox"/> Ex ia Mb I <input type="checkbox"/> Ex ec nC IIC T4 Gc <input type="checkbox"/> IECEx KEM 08.0001 X
Install in CL I, DIV2 GP A2 T4 Provides 10 circuits to CL I+II DIV 10 GP A-G or CL I2+2 ATEXEx nA nC IIC IIC T4 Gc Install: 9203QF01	Attention! Read manual before installation / operation. Lire manuel avant installation / operation.
Seurussuoritus Ex ia Gd IICIB/IIA Ex nA nC IIC T4 Gc Ex ia Gd IIC Ex ia Mb I DEKRA 16.0005X Install: 9203QB01	Ex ENEC Ex ia Gd IICIB/IIA ver Ex nA nC IIC T4 Gc X Ver: 9203-003
UK CA CE DNV 8505 0344	ClassNK APPROVED
SOLENOID / ALARM DRIVER 9203	

标志

当本产品安装为 Ex ia 或 ec 时，请在标签相应的框中使用永久性标记来指明安装类型。

如何拆卸 9000 系列产品

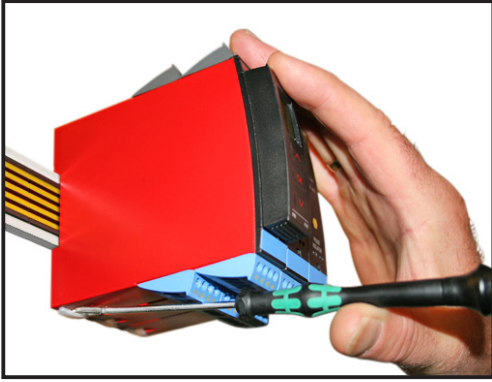


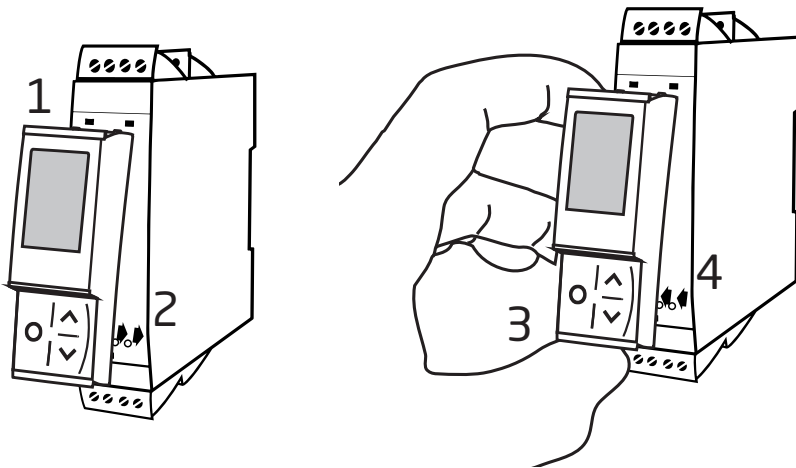
图 1：
通过提起底部锁定装置，可将设备从 DIN 导轨上拆下。

安装 PR 4500

- 1: 将 PR 4500 上部的卡舌插入设备顶部的孔内。
- 2: 以上部卡舌为支点，将 PR 4500 缓慢靠近设备前面板，直至其卡入到位。

拆卸 PR 4500

- 3: 按下 PR 4500 底部的释放按钮，释放并以上部卡舌为支点，缓慢提起 PR 4500。
- 4: 取出 PR 4500 之后，将其从设备顶部的孔中移除。



电磁阀/警报灯驱动器 9203

- 危险区域电磁阀·警报 LED 灯/喇叭驱动安全栅
- 扩展的自我诊断
- 单/双通道版本
- 允许独立供电或电源导轨供电·例如 PR 9400
- 通过全面评估的 SIL 2 认证

高级功能

- 9203Bxxxx 具有三个内置防爆安全栅。
- 两种不同输出规格可选·低电流 (35 mA) 和高电流 (60 mA) 输出。
- 通过可拆卸显示面板调节和显示过程参数 (PR 4500)。
- 每个通道都可通过 PR 4500 选择直接或者反转输出·同时降低输入危险区域的电流·适应防爆要求。
- 通过选配 PR 4500 显示面板监控输出到危险区域的电流。
- 通过电源导轨 (可选) 和直接供电实现电源冗余。

应用

- 9203A xxxx 可以安装于未分类区域或 Zone 2 / Cl.1, Div. 2, Group A, B, C, D。
- 9203B xxxx 可以安装于安全区域或 zone 2 和 Cl. 1 / Div 2 区域·并将信号传输到 zone 0, 1, 2 和 zone 20, 21, 22 包括 M1 mining / Class I/II/III, Div. 1, Gr. A-G 区域信号。
- 设备用于控制安装在安全或危险区域中的电磁阀·声音警报器和 LED 指示灯的开/关。
- 通过独立状态继电器或电源导轨指示产品和传感器故障报警。
- 9203 根据 IEC 61508 要求设计·开发和认证·符合 SIL 2 应用要求。
- 适用于符合 ISO-13849 标准的性能等级 (PL) 为 “d” 的系统。

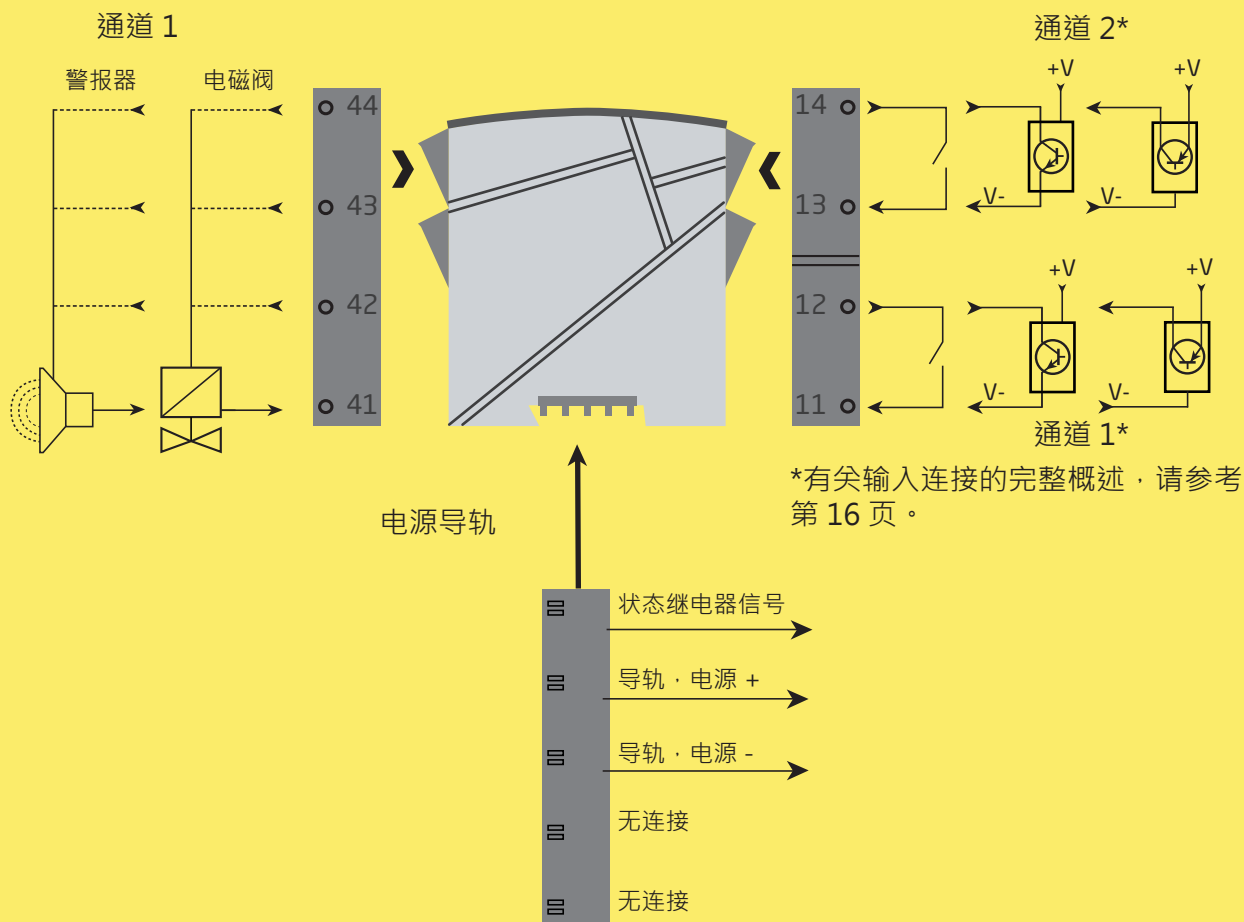
技术特点

- 1个绿色和2个黄色/红色前端 LED 灯指示正常运行和故障状态。
- 2,6 kVAC 电气隔离 (输入/输出/电源端口)。

应用 - 9203Axxxx

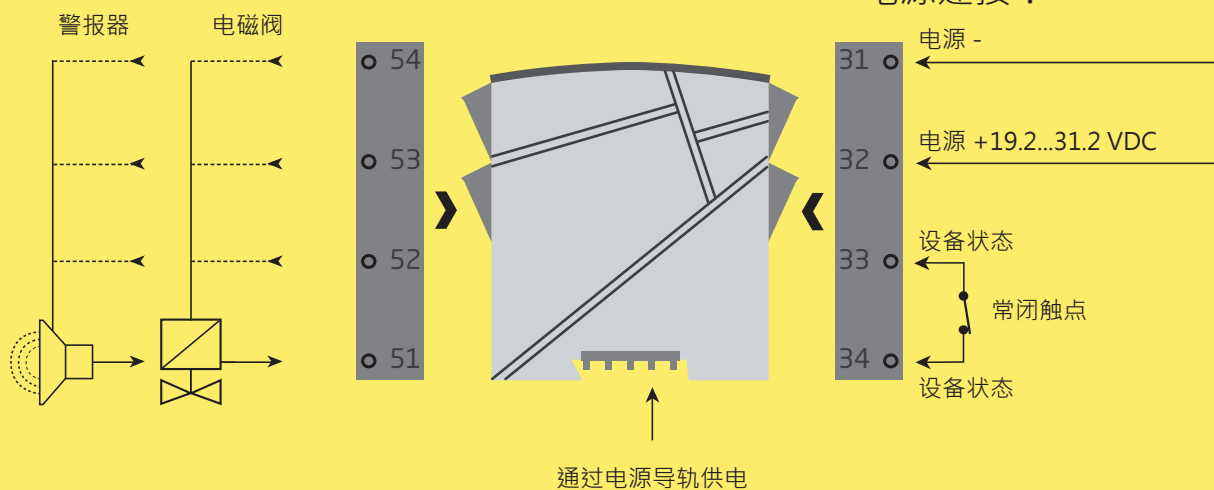
输出信号：

输入信号：



通道 2

电源连接：

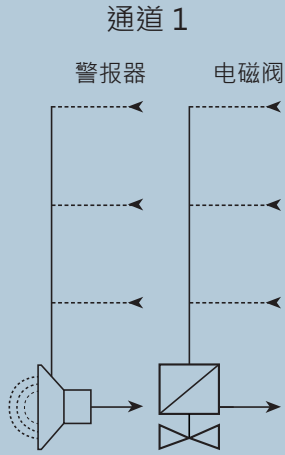


Zone 2 和 Cl.1, Div. 2, gr. A-D 或安全区域

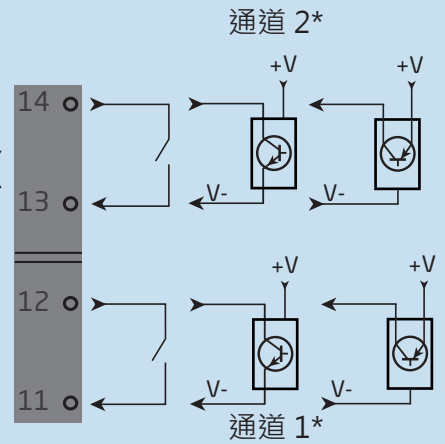


应用 - 9203Bxxxx

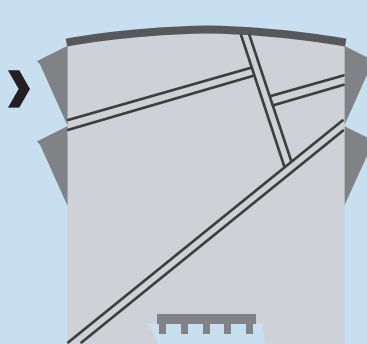
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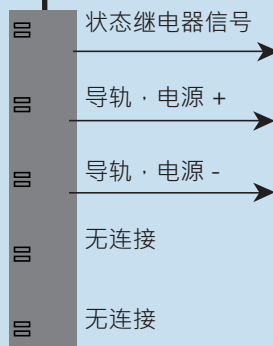
输入信号：



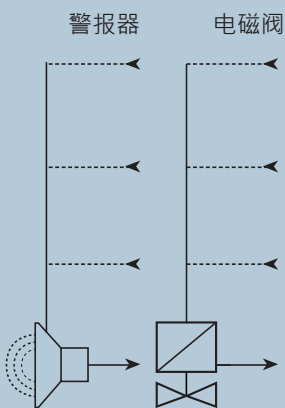
*有关输入连接的完整概述，请参考第 16 页。



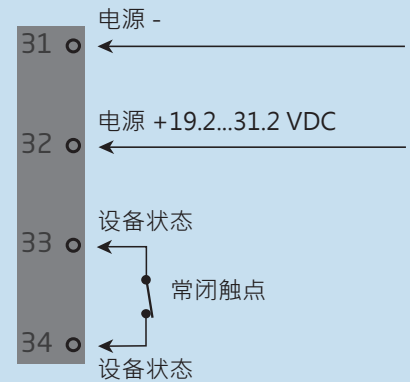
电源导轨



通道 2



电源连接：



Zone 0 · 1 · 2 ·
20 · 21 · 22 · M1 &
Cl.I/II/III · Div. 1
gr. A-G

通过电源导轨供电

Zone 2 和 Cl.1, Div. 2, gr. A-D
或安全区域

订购

型号	相关设备	输出	通道	输入	本质安全/防爆认证
9203	否 : A	低电流 : 1	单 : A	Opto / 开关 : -	ATEX, IECEx, FM, : - INMETRO, CCC, EAC-Ex, UKEX
	是 : B		双 : B	PNP : 1	
		高电流 : 2	单 : A	NPN : 2	UL 913, ATEX, IECEx, FM, : -U9 INMETRO, CCC, EAC-Ex, UKEX KCs, ATEX, IECEx, FM, : -KCs INMETRO, CCC, EAC-Ex, UKEX

示例 : 9203B2B2

输入类型选择器

	9203xxx-x	9203xxx1x	9203xxx2x
NPN 集电极开路	x		x
PNP 集电极开路	x	x	
开关	x	x	x
有源信号		x	x

附件

- 4510 = 显示/配置面板
- 4511 = 总线通讯面板
- 4512 = 蓝牙通讯面板
- 9400 = 电源导轨
- 9404 = 导轨截止端子
- 9410 = 电源控制装置
- 9421 = 电源模块 24 V - Ex ec nC

技术参数

环境条件

规格温度范围	-20°C 至 +60°C
存储温度	-20°C 至 +85°C
标定温度	20...28°C
相对湿度	< 95% RH (无冷凝)
防护等级	IP20
安装条件	污染等级 2 和过压类别 II。

机械规格

结构尺寸 (高x宽x深)	109 x 23.5 x 104 mm
PR 4500 的结构尺寸 (高x宽x深)	109 x 23.5 x 131 mm
重量 (大约)	170 g
DIN 导轨类型	DIN EN 60715 - 35 mm
导线规格	0.13...2.08 mm ² / AWG 26...14 绞线
螺丝端子力矩	0.5 Nm
抗振规格	IEC 60068-2-6
2...13.2 Hz	±1 mm
13.2...100 Hz	±0.7 g

常用电气规格

电源电压	19.2...31.2 VDC
熔断器	1.25 A SB/250 VAC

型号	说明	最大功率耗散	最大需用功率
9203x1A-x	单通道·低电流	≤ 1.1 W	≤ 1.9 W
9203x1A1x	单通道·低电流	≤ 1.1 W	≤ 1.9 W
9203x1A2x	单通道·低电流	≤ 1.1 W	≤ 1.9 W
9203x1B-x	双通道·低电流	≤ 2.0 W	≤ 3.1 W
9203x1B1x	双通道·低电流	≤ 2.0 W	≤ 3.1 W
9203x1B2x	双通道·低电流	≤ 2.0 W	≤ 3.1 W
9203x2A-x	单通道·高电流	≤ 1.7 W	≤ 2.5 W
9203x2A1x	单通道·高电流	≤ 1.7 W	≤ 2.5 W
9203x2A2x	单通道·高电流	≤ 1.7 W	≤ 2.5 W

最大需用功率是指端子 31 和 32 所需的最大功率。

最大功率耗散是指设备的最大功率消耗。

如果 9203 搭配 PR 4500 使用，则分别添加 40 mW 和 70 mW 到配有 PR 4500 的每个设备的最大功率耗散和最大需用功率。

隔离 - 测试/工作：

输入/输出/电源	2.6 kVAC/250 VAC 加强绝缘
输出 1 和输出 2 之间	1.5 kVAC / 150 VAC 加强绝缘
状态继电器和电源之间	1.5 kVAC / 150 VAC 加强绝缘
参数配置方式	PR 4500

EMC – 抗扰性影响	< ±0.5% 所设量程
扩展的 EMC 电磁兼容：	
NAMUR NE 21, A criterion, burst.	< ±1% 所设量程

9203xxx-x NPN 集电极开路 and 机械开关

低电平触发标准	≤ 2.0 VDC
高电平触发标准	≥ 4.0 VDC
最大外接电压	28 VDC
输入阻抗	3.5 kΩ
输入开路电压	6.0 VDC

9203xxx-x PNP 集电极开路

低电平触发标准	≤ 8.0 VDC
高电平触发标准	≥ 10.0 VDC
最大外接电压	28 VDC
输入阻抗	3.5 kΩ
输入开路电压	6.0 VDC

9203xxx1x 带有下拉电阻的 PNP

低电平触发标准	≤ 8.0 VDC
高电平触发标准	≥ 10.0 VDC
最大外接电压	28 VDC
输入阻抗	3.5 kΩ
输入开路电压	6.5 VDC

9203xxx2x 带有上拉电阻的 NPN

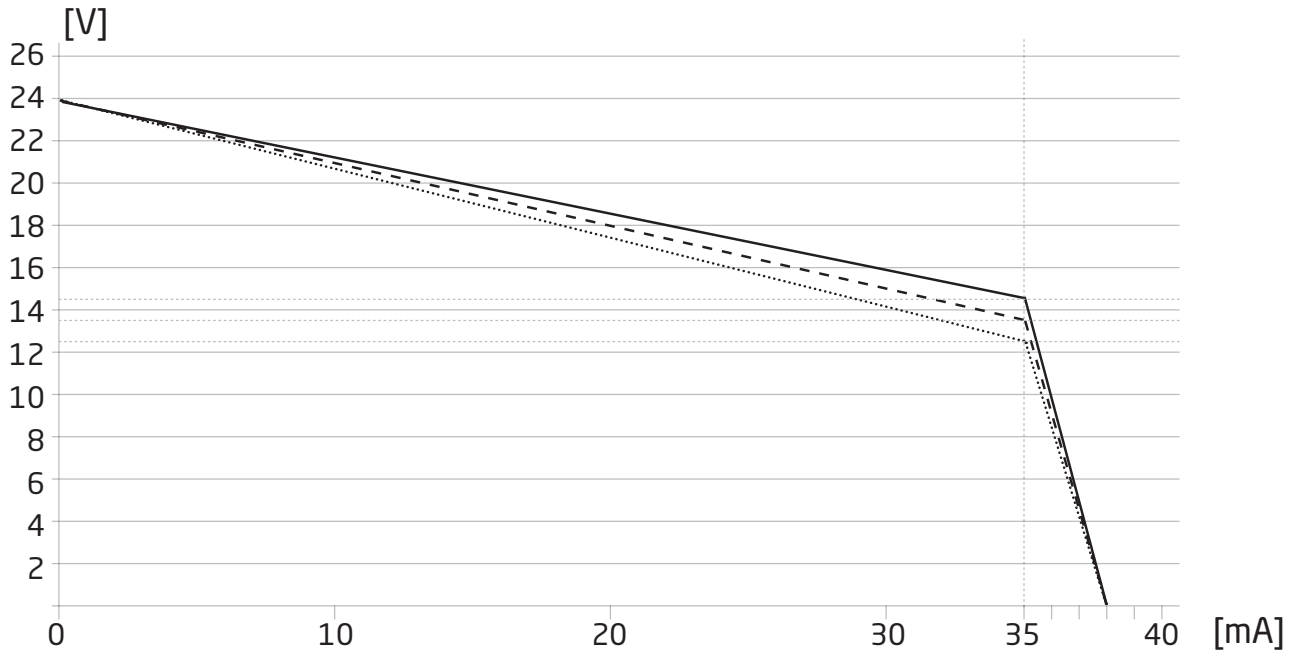
低电平触发标准	≤ 2.0 VDC
高电平触发标准	≥ 4.0 VDC
最大外接电压	28 VDC
输入阻抗	3.5 kΩ
输入开路电压	6.0 VDC

输出

输出波纹	< 40 mV RMS
----------------	-------------

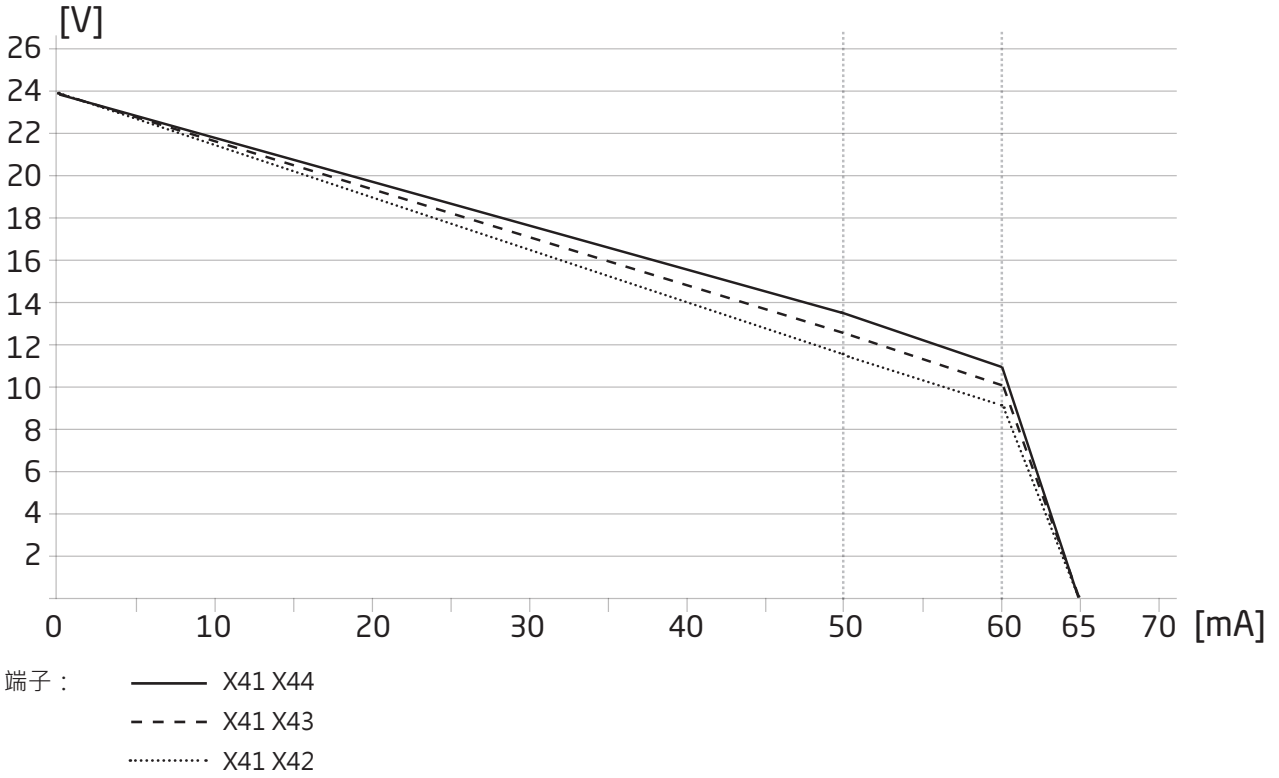
输出负载

端子	9203x1Axx (单通道) / 9203x1Bxx (双通道)		
	41-42 / 51-52	41-43 / 51-53	41-44 / 51-54
无负载输出电压	最小 24 V	最小 24 V	最小 24 V
带负载输出电压	最小 12.5 V	最小 13.5 V	最小 14.5 V
最大输出电流	35 mA	35 mA	35 mA



端子：
 ——— X41 X44
 - - - - X41 X43
 X41 X42

端子	9203x2Axx(单通道)					
	41-42		41-43		41-44	
无负载输出电压	最小 24 V		最小 24 V		最小 24 V	
带负载输出电压	最小 11.5 V	最小 9 V	最小 12.5 V	最小 10 V	最小 13.5 V	最小 11 V
最大输出电流	50 mA	60 mA	50 mA	60 mA	50 mA	60 mA



继电器输出

安全区域中的状态继电器：

最大电压	125 VAC / 110 VDC
最大电流	0.5 A AC / 0.3 A DC
最大功率	62.5 VA / 32 W

遵守主机要求

EMC	2014/30/EU & UK SI 2016/1091
ATEX	2014/34/EU & UK SI 2016/1107
LVD	2014/35/EU & UK SI 2016/1101
RoHS	2011/65/EU & UK SI 2012/3032

认证

DNV, Ships & Offshore	TAA00000JD
ClassNK	TA24034M
c UL us · UL 61010-1	E314307
EAC	TR-CU 020/2011
EAC LVD	TR-CU 004/2011
EAC Ex	TR-CU 012/2011

本质安全/防爆

ATEX	KEMA 07ATEX0147 X
IECEX	IECEX KEM 09.0001X
UKEX	DEKRA 21UKEX0181 X / DEKRA *22UKEXYYYY X
c FM us	FM19US0057X / FM19CA0030X
INMETRO	DEKRA 16.0006 X
c UL us · UL 913 (仅限 9203xxxx-U9)	E233311
CCC	2020322304003423
KCs (仅限 9203xxxx-KCs)	21-AV4BO-0182X / 21-AV4BO-0183X / 21-AV4BO-0184X
EAC Ex	RU C-DK.HA65.B.00355/19

功能安全

SIL2 认证 & 全面评估符合 IEC 61508

* 待定

软/硬件故障在 PR 4500 中的显示

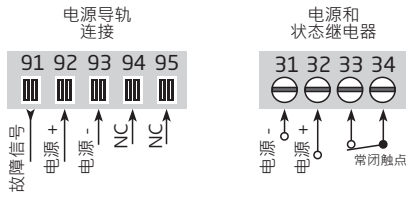
硬件故障读数		
故障检查	读数	原因
检查测试 PR 4500 与 9203 之间的通讯	NO.CO	连接错误
EEprom 错误 - 检查配置	FL.ER	配置错误或 CRC 不匹配 · 恢复配置已加载
硬件故障	DE.ER	设备中的恢复配置无效
硬件故障	FC.ER	PR 4500 中的代码校验和无效
EEprom 错误 - 检查配置	CO.ER	无效配置 (CRC 或数据)
硬件故障	CA.ER	工厂校准故障
硬件故障	HW.ER	硬件设置 - 配置不匹配
硬件故障	OC.ER	主要输出控制器通讯故障
硬件故障	MS.ER	主要内部电源超出限制范围
硬件故障	MI.ER	主要初始化自检失败
硬件故障	MC.ER	主要闪存或 RAM 自检失败

! 屏幕上的所有故障指示每秒闪烁一次。帮助文本对故障加以解释。

影响两个通道的故障显示为通道 1 的故障 - 显示通道 2 的行为空白。

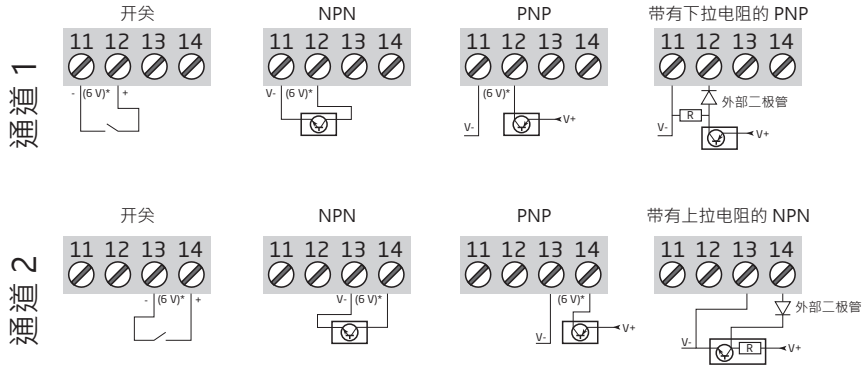
发生硬件故障时，可通过以下两种方式进行重置。逐步操作菜单 (如果另一个通道将继续运行) 或重启设备。

接线方式

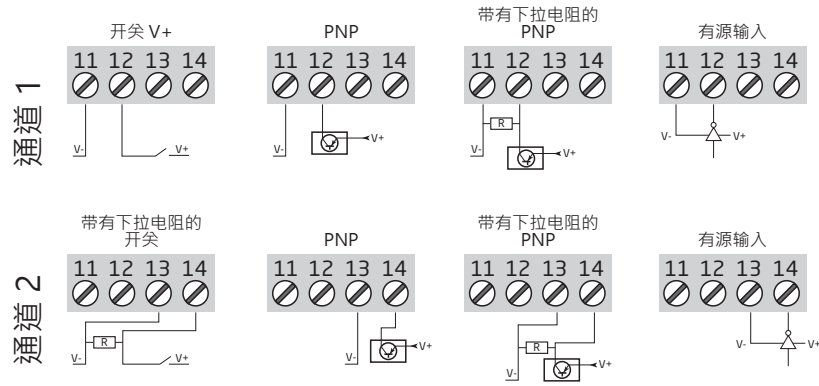


NC = 无连接

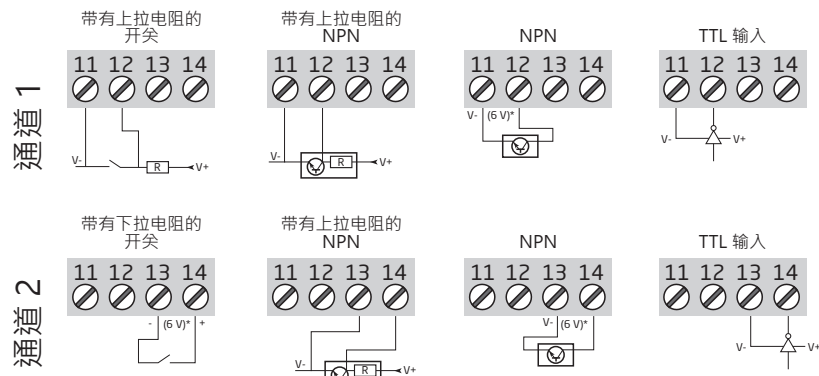
输入 - 9203xxx-x :



输入 - 9203xxx1x :

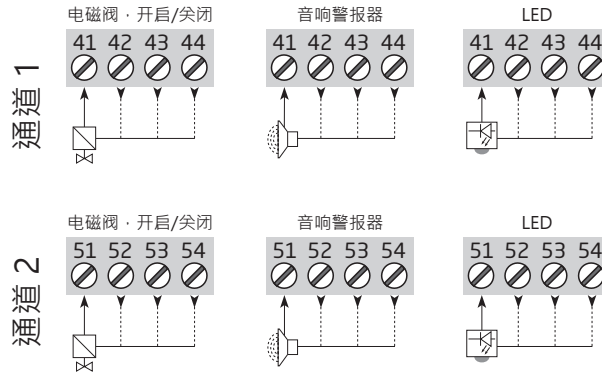


输入 - 9203xxx2x :

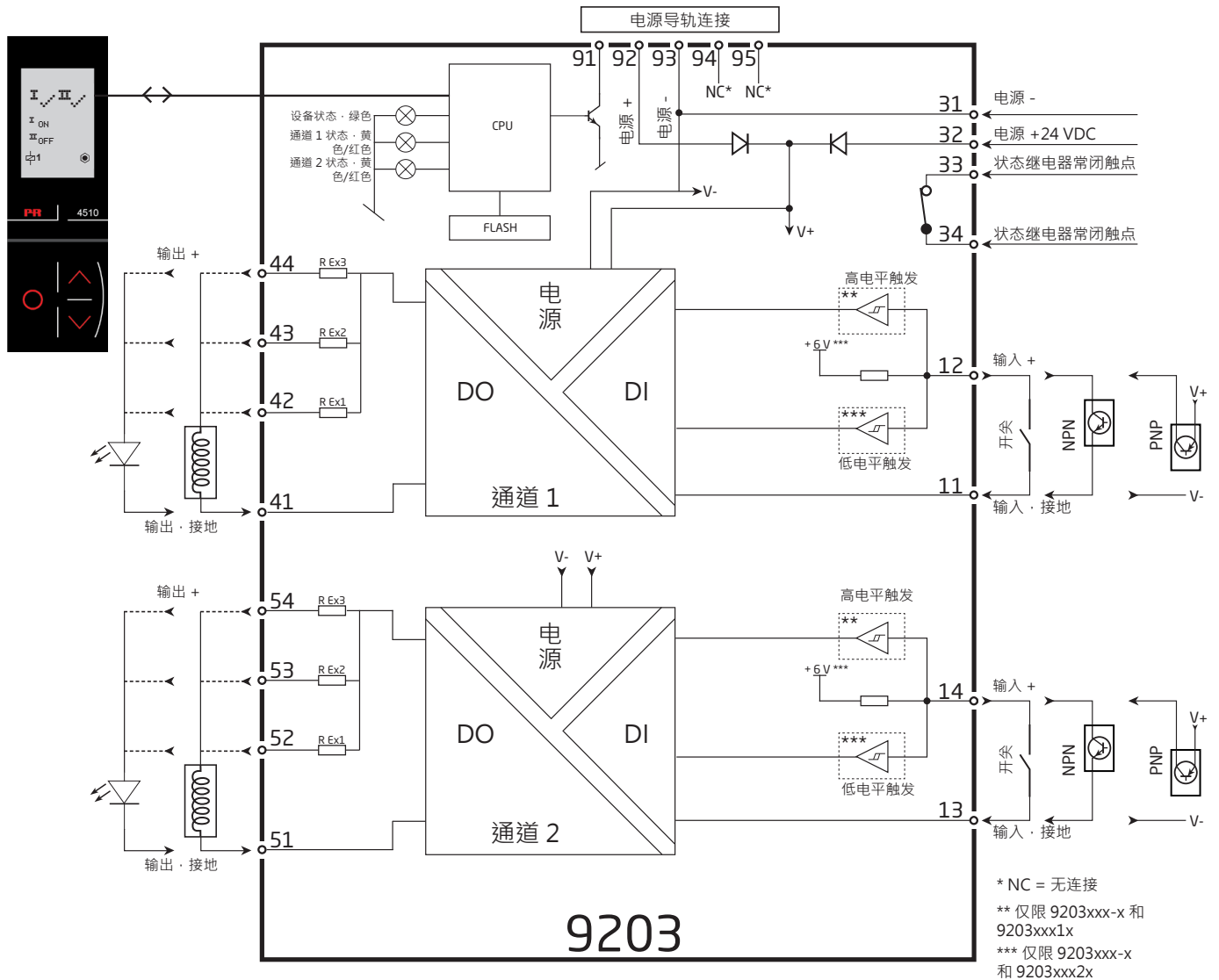


* 6 V (断开状态)

输出 - 9203xxxxx :



方框图



无显示面板时信号故障状态指示

LED 和故障信号指示列表					
状态	绿色 LED	通道 1: 黄色/红色	通道 2: 黄色/红色	状态继电器·常闭触点	电源导轨 信号状态
设备正常	闪烁			得电	关
无电源	关	关	OFF	失电	开
设备故障	关	红色	红色	失电	开
通道 1·输出开启	闪烁	黄色		得电	关
通道 1·输出关闭	闪烁	关		得电	关
通道 2·输出开启	闪烁		黄色	得电	关
通道 2·输出关闭	闪烁		关	得电	关

配置/操作功能键

程式图文档。

概述

配置 9203 时，菜单会引导您浏览所有核心参数，选择并配置适用于相关应用的设置。每个菜单均有一个滚动显示的帮助文本，自动在屏幕的第 3 行中显示。

执行配置时可使用以下 3 个功能键：

- ⏪ 可增加数值或选择下一个参数
- ⏩ 可减少数值或选择上一个参数
- ⏹ 保存所选值并进入下一个菜单

完成配置后，显示将回到默认状态 1.0。按下并按住 ⏹ 将返回到上一个菜单或默认状态 (1.0)，且不对更改后的数值或参数进行保存。

若 1 分钟内均未激活任何按键，则显示将返回到默认状态 (1.0)，且不对更改后的数值或参数进行保存。

进一步说明

密码保护：通过分配密码可阻止配置访问。密码保存在设备之中，可高效防止他人未经授权修改配置。如果忘记了当初配置的密码，请联系 PR electronics 支持人员 - www.prelectronics.com/cn/contact。

通过显示面板 PR 4500 指示信号和传感器故障

可对显示面板进行配置，以显示两个通道的输出状态、输出电流 (负载) 或 TAG 号码。在选择“ALT”时，读数会在数字量输出与 TAG 号码之间进行切换。在硬件故障时，会显示说明故障原因的帮助文本。

高级功能

在点“ADV.SET”菜单时回答“YES”，可获准配置装置的多个高级功能。

显示设置：在此，您可以调整亮度对比度和背光强度。设置带有 5 个字母数字的 TAG 号码。选择显示屏第 2 行和第 3 行的显示内容 - 选择输出状态、输出电流 (负载) 或 TAG 号码的读数。在选择“ALT”时，读数会在各显示选项之间进行切换。

密码：在此，您可选择 0000 至 9999 之间的密码，以防止他人未经授权修改装置配置。装置以默认状态交付，未设密码。

语言：在“LANG”菜单中，您可选择 7 种不同语言版本的帮助文本。您可选择英语、德语、法语、意大利语、西班牙语、瑞典语和丹麦语。

安全完整性等级 (SIL)：请查看安全手册了解更多详情。



菜单流程图

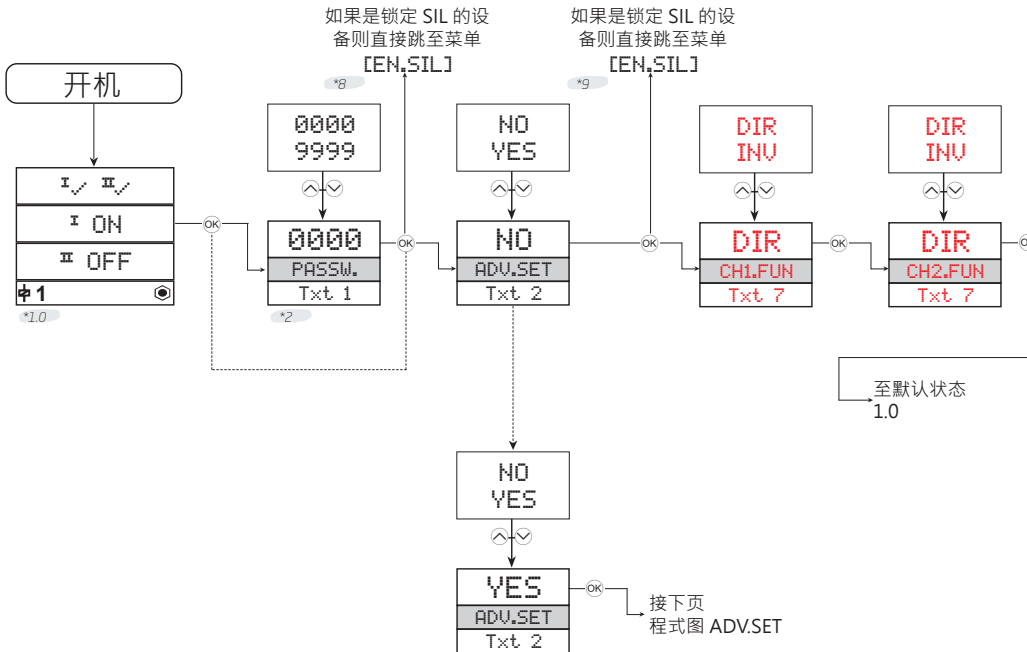
若 1 分钟内未激活任何按键，则屏幕将返回到默认状态 1.0，且不对更改配置进行保存。

⬆ 增加值/选择下一个参数

⬇ 减少值/选择上一个参数

OK 保存所选值并进入下一个菜单

按住 OK 可返回上一个菜单/返回到菜单 1.0 且不进行保存。



*1.0 默认状态。
第 1 行显示通道 1 和通道 2 的状态。
第 2 行显示通道 1 的输出状态、输出电流或 TAG 号码。
第 3 行显示通道 2 的输出状态、输出电流或 TAG 号码。
第 4 行显示设备是否已锁定 SIL。

*2 仅在设置了密码保护时。

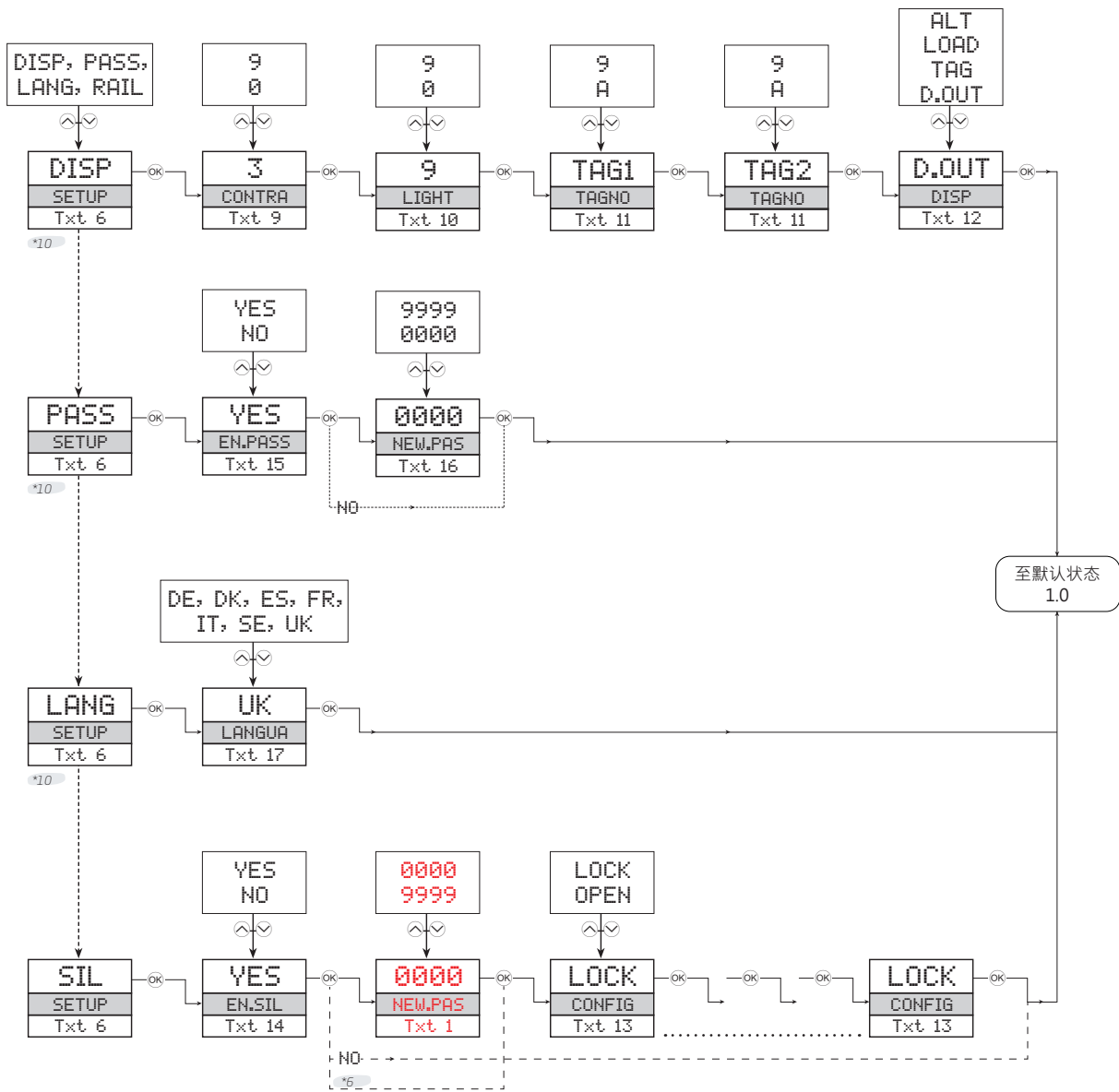
*8 从此分支到 SIL，对以下设备有效：
所有的 4510 设备。
序列号低于 211001001 的 4511 设备。
序列号低于 211065001 的 4512 设备。

第 1 行符号：
✓ = 正常。闪烁的 ✘ = 故障。
第 2 行和第 3 行符号：
I ON = 通道 1 开启
II OFF = 通道 2 关闭
第 4 行符号：
静态的圆点 = 已锁定 SIL
闪烁的圆点 = 未锁定 SIL
⊕ = 输出为有源

红色文本表示
SIL 配置中的安全参数。
请查看安全手册了解更多详情

*9 从此分支到 SIL，对以下设备有效：
序列号高于 211001000 的 4511 设备。
序列号高于 211065000 的 4512 设备。

菜单流程图·高级设置 (ADV.SET)



*6 如果已设定密码。

*10 如果 SIL 已锁定，则无法在 PR 4500 上使用。
仅适用于序列号从 211065001 开始的 4512 设备，以及序列号从 211001001 开始的 4511 设备。

帮助文本概述

- [01] 设置正确密码
- [02] 进入高级设置?
- [06] 进入语言设置
 - 进入密码设置
 - 进入显示设置
 - 进入 SIL 设置
- [07] 选择直接输出通道功能
 - 选择反向输出通道功能
- [09] 调整 LCD 对比度
- [10] 调整 LCD 背光强度
- [11] 写入 5 字符通道 TAG
- [12] 屏幕显示输出状态
 - 屏幕显示输出负载
 - 屏幕显示 TAG
 - 屏幕交替显示所有信息
- [13] 配置 SIL 状态 (开启/锁定)
- [14] 启用 SIL 配置锁定
- [15] 是否启用密码保护?
- [16] 设置新密码
- [17] 选择语言
- [20] 无通讯 - 检查连接
- [21] EEprom 错误 - 检查配置
- [22] 硬件故障

IECEX Installation drawing



For safe installation of 9203 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.



For Installation in Zone 2 / Division 2 the following must be observed.

The 4501 programming module is to be used solely with PRelectronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

IECEX Certificate: IECEX KEM 09.0001X

Marking 9203Bxxx [Ex ia Ga] IIC/IIB/IIA
[Ex ia Da] IIIC
[Ex ia Ma] I

Marking 9203Bxxx , 9203Axxx Ex ec nC IIC T4 Gc

Standards IEC60079-0:2017, IEC60079-11:2011,
IEC60079-15:2017, IEC60079-7:2015+A1:2017

Type	Installation	Current Output	Channels	Input
9203	Non Ex / Zone 2 :A	Low current :1	Single :A	Standard :-
			Double :B	PNP : 1
	Ex-Barrier / Zone 2 :B	High current :2	Single :A	NPN : 2

Installation notes.

Install in pollution degree 2, overvoltage category II as defined in IEC60664-1.

Do not separate connectors when energized and an explosive gas mixture is present.

Do not mount or remove modules from the Power Rail when an explosive gas mixture is present.

Disconnect power before servicing.

The wiring of unused terminals is not allowed.

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

For installation in Zone 2, the module shall be installed in an enclosure in type of protection Ex e, providing a degree of protection of at least IP54. Cable entry devices and blanking elements shall fulfill the same requirements.

For installation on Power Rail in Zone 2, only Power Rail type 9400 supplied by Power Control Unit type 9410 (IECEX Certificate of Conformity IECEX KEM 08.0025X) is allowed.

Max. screw terminal torque 0.5 Nm.

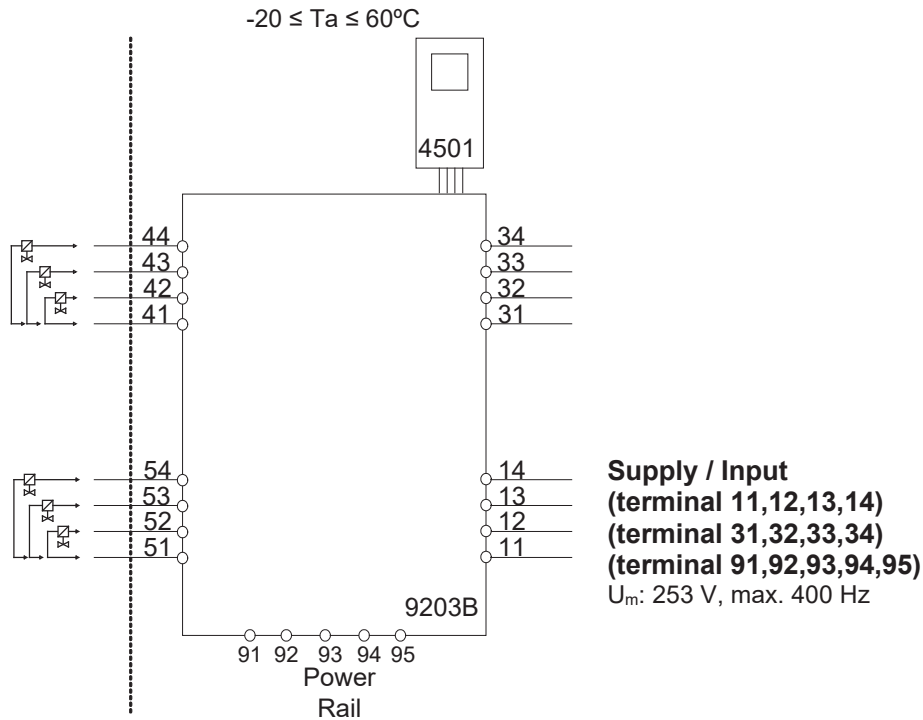
Stranded wire should be installed with an insulation stripping length of 5 mm or via a suitable insulated terminal such as a bootlace ferrule.

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9203Bxxx Installation:

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

Non Hazardous area
or Zone 2



Terminal (31,32)

Supply:

Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

Terminal (11,12 and 13,14)

Input:

Voltage Max. 28 VDC
Trig: NPN Low < 2 V, High > 4 V
Trig: PNP Low < 8 V, High > 10 V

Terminal (33,34)

Status Relay:

Non Hazardous location
Voltage max. 125 VAC / 110 VDC
Power max. 62.5 VA / 32 W
Current max. 0.5 AAC / 0.3 ADC

Zone 2 installation

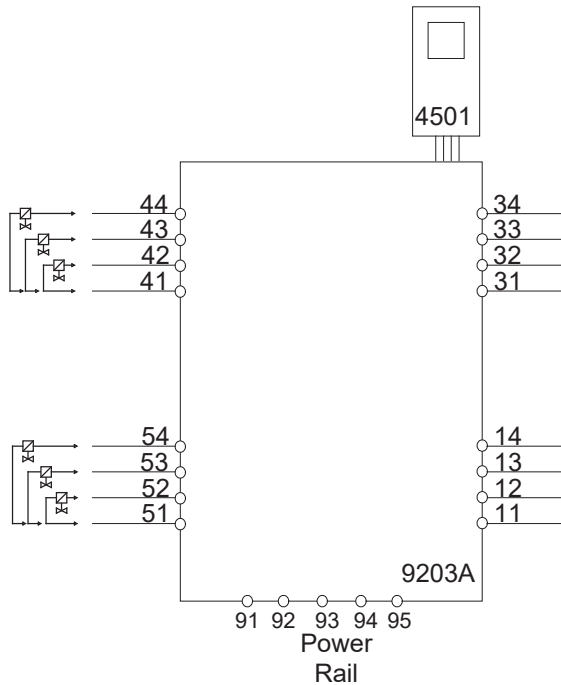
32 VAC / 32 VDC
16 VA / 32 W
0.5 AAC / 1 ADC

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9203B1A, 9203B1B Terminal 41-42/51-52			Co	Lo	Lo/Ro	9203B2A Terminal 41-42			Co	Lo	Lo/Ro
U _o	28V	IIC	80nF	4.2mH	54μH/Ω	U _o	28V	IIC	80nF	2.69mH	44μH/Ω
I _o	93 mA	IIB	640nF	16.8mH	218μH/Ω	I _o	115mA	IIB	640nF	10.8mH	176μH/Ω
P _o	0.65W	IIA	2.1μF	32.6mH	436μH/Ω	P _o	0.81W	IIA	2.1μF	20.8mH	353μH/Ω
		I	3.76μF	32.6mH	436μH/Ω			I	3.76μF	20.8mH	353μH/Ω
9203B1A, 9203B1B Terminal 41-43/51-53			Co	Lo	Lo/Ro	9203B2A Terminal 41-43			Co	Lo	Lo/Ro
U _o	28V	IIC	80nF	3.5mH	54μH/Ω	U _o	28V	IIC			
I _o	100mA	IIB	640nF	14.2mH	218μH/Ω	I _o	125mA	IIB	640nF	9.1mH	163μH/Ω
P _o	0.70W	IIA	2.1μF	27.6mH	436μH/Ω	P _o	0.88W	IIA	2.1μF	17.6mH	327μH/Ω
		I	3.76μF	27.6mH	436μH/Ω			I	3.76μF	17.6mH	327μH/Ω
9203B1A,9203B1B Terminal 41-44/51-54			Co	Lo	Lo/Ro	9203B2A Terminal 41-44			Co	Lo	Lo/Ro
U _o	28V	IIC	80nF	2.9mH	46μH/Ω	U _o	28V	IIC			
I _o	110mA	IIB	640nF	11.8mH	184μH/Ω	I _o	135mA	IIB	640nF	7.8mH	150μH/Ω
P _o	0.77W	IIA	2.1μF	22.8mH	369μH/Ω	P _o	0.95W	IIA	2.1μF	15.1mH	301μH/Ω
		I	3.76μF	22.8mH	369μH/Ω			I	3.76μF	15.1mH	301μH/Ω

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9203Axxx Installation
Non Classified area or Zone 2



**Terminal (31,32)
Supply:**

Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

**Terminal (11,12 and 13,14)
Input:**

Voltage Max. 28 VDC
Trig: NPN Low < 2 V, High > 4 V
Trig: PNP Low < 8 V, High > 10 V

Terminal (33,34)

Status Relay:

Non Hazardous location
Voltage max. 125 VAC / 110 VDC
Power max. 62.5 VA / 32 W
Current max. 0.5 AAC / 0.3 ADC

Zone 2 installation

32 VAC / 32 VDC
16 VA / 32 W
0.5 AAC / 1 ADC

Terminal (41..44 / 51..54)

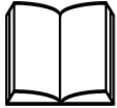
Umax 28 V
Imax 135 mA
Pmax 0.95 W

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ATEX/UKEX Installation drawing



For safe installation of 9203 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.



For Installation in Zone 2 / Division 2 the following must be observed.
The 4501 programming module is to be used solely with PR electronics' modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

ATEX Certificate
UKEX Certificate, 9203Bxxx
UKEX Certificate, 9203Axxx, Bxxx

KEMA 07ATEX 0147 X
DEKRA 22UKEXYYYY X - *Pending*
DEKRA 21UKEX0181 X

Marking 9203Bxx



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

Marking 9203Bxx, 9203Axx

II 3G Ex ec nC IIC T4 Gc

Standards

EN 60079-0 : 2018, EN 60079-11 : 2012,
EN 60079-15 : 2019, EN60079-7:2015+A1:2018

Special Conditions of Use

Install in pollution degree 2, overvoltage category II as defined in EN60664-1.

Do not separate connectors when energized and an explosive gas mixture is present.
Do not mount or remove modules from the Power Rail when an explosive gas mixture is present.
Disconnect power before servicing.
The wiring of unused terminals is not allowed.

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

For installation in Zone 2, the module shall be installed in an enclosure in type of protection Ex e, providing a degree of protection of at least IP54. Cable entry devices and blanking elements shall fulfill the same requirements.

For installation on Power Rail in Zone 2, only Power Rail type 9400 supplied by Power Control Unit type 9410 (Type Examination Certificate KEMA 07ATEX0152 X, DEKRA 21UKEX0169 X) is allowed.

Max. screw terminal torque 0.5 Nm.

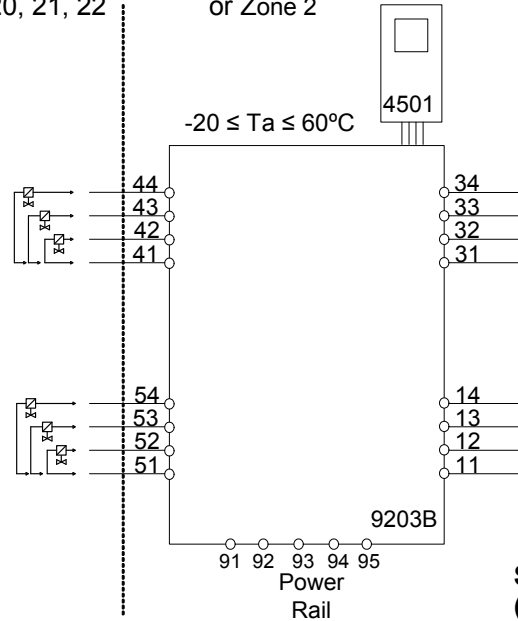
Stranded wire should be installed with an insulation stripping length of 5 mm or via a suitable insulated terminal such as a bootlace ferrule.

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9203Bxxx Installation:

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

Non Hazardous Area
or Zone 2



Supply / Input
(terminal 11,12,13,14)
(terminal 31,32,33,34)
(terminal 91,92,93,94,95)
U_m: 253 V, max. 400 Hz

Terminal (31,32)

Supply:
Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

Terminal (11,12 and 13,14)

Input:
Voltage max 28 VDC
Trig: NPN Low < 2 V, High > 4 V
Trig: PNP Low < 8 V, High > 10 V

Terminal (33,34)

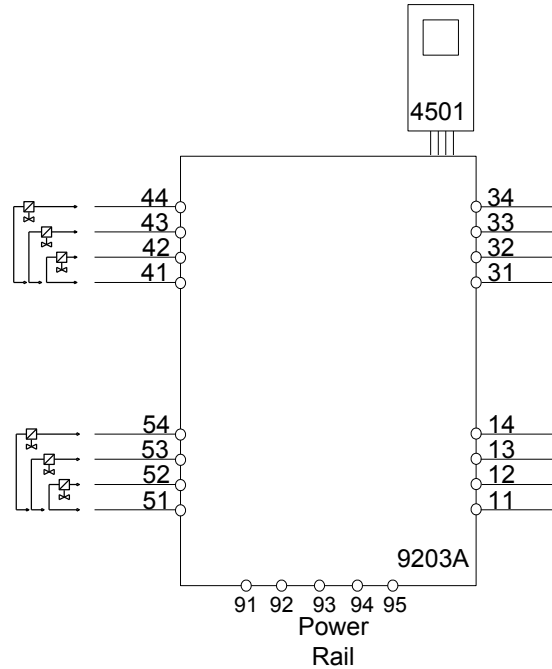
Status Relay:	Non Hazardous location	Zone 2 installation
Voltage max.	125 VAC / 110 VDC	32 VAC / 32 VDC
Power max.	62.5 VA / 32 W	16 VA / 32 W
Current max.	0.5 AAC / 0.3 ADC	0.5 AAC / 1 ADC

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9203B1A, 9203B1B Terminal 41-42/51-52			Co	Lo	Lo/Ro	9203B2A Terminal 41-42			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	4.2mH	54μH/Ω	Uo	28V	IIC	80nF	2.69mH	44μH/Ω
Io	93 mA	IIB	640nF	16.8mH	218μH/Ω	Io	115mA	IIB	640nF	10.8mH	176μH/Ω
Po	0.65W	IIA	2.1μF	32.6mH	436μH/Ω	Po	0.81W	IIA	2.1μF	20.8mH	353μH/Ω
		I	3.76μF	32.6mH	436μH/Ω			I	3.76μF	20.8mH	353μH/Ω
9203B1A, 9203B1B Terminal 41-43/51-53			Co	Lo	Lo/Ro	9203B2A Terminal 41-43			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	3.5mH	54μH/Ω	Uo	28V	IIC			
Io	100mA	IIB	640nF	14.2mH	218μH/Ω	Io	125mA	IIB	640nF	9.1mH	163μH/Ω
Po	0.70W	IIA	2.1μF	27.6mH	436μH/Ω	Po	0.88W	IIA	2.1μF	17.6mH	327μH/Ω
		I	3.76μF	27.6mH	436μH/Ω			I	3.76μF	17.6mH	327μH/Ω
9203B1A, 9203B1B Terminal 41-44/51-54			Co	Lo	Lo/Ro	9203B2A Terminal 41-44			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	2.9mH	46μH/Ω	Uo	28V	IIC			
Io	110mA	IIB	640nF	11.8mH	184μH/Ω	Io	135mA	IIB	640nF	7.8mH	150μH/Ω
Po	0.77W	IIA	2.1μF	22.8mH	369μH/Ω	Po	0.95W	IIA	2.1μF	15.1mH	301μH/Ω
		I	3.76μF	22.8mH	369μH/Ω			I	3.76μF	15.1mH	301μH/Ω

LERBAKKEN 10, 8410 RØNDE DENMARK

9203Axxx Installation:
Non Classified area or Zone 2



Terminal (31,32)

Supply:

Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

Terminal (11,12 and 13,14)

Input:

Voltage max 28 VDC
Trig: NPN Low < 2 V, High > 4 V
Trig: PNP Low < 8 V, High > 10 V

Terminal (33,34)

Status Relay:

Voltage max. 125 VAC / 110 VDC
Power max. 62.5 VA / 32 W
Current max. 0.5 AAC / 0.3 ADC

Non Hazardous location

Zone 2 installation

32 VAC / 32 VDC
16 VA / 32 W
0.5 AAC / 1 ADC

Terminal (41..44 / 51..54)

Umax 28 V
Imax 135 mA
Pmax 0.95 W

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FM Installation drawing



For safe installation of 9203 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.



For Installation in Zone 2 / Division 2 the following must be observed.

The 4501 programming module is to be used solely with PRelectronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

Type	Installation	Current Output	Channels	Input
9203	Non Ex / Zone 2 :A	Low current :1	Single :A	Standard :-
	Ex-Barrier / Zone 2 :B		Double :B	PNP : 1
			High current :2	Single :A

Installation notes:

In Class I, Division 2 installations, the subject equipment shall be mounted within a too-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or the Canadian Electrical Code (C22.1).

In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or the Canadian Electrical Code (C22.1). Where installed in outdoor or potentially wet locations, the enclosure shall, at a minimum, meet the requirements of IP54.

In Class I, Zone 2 installations, the installer shall ensure protection of supply terminals against transient voltages exceeding 140% of the rated supply voltage.

Install in environments rated Pollution Degree 2 or better; overvoltage category I or II.

The module must be supplied from a Power Supply having double or reinforced insulation.

The use of stranded wires is not permitted for mains wiring except when wires are fitted with cable ends. For installation on the 9400 Power Rail the power must be supplied from Power Control Module Unit 9410.

The module is galvanically isolated and does not require grounding.

Use 60 / 75 °C copper conductors with wire size AWG: (26-14).

The maximum internal Power dissipation for adjacent modules is assumed to be max. 2W each.

Warning: Substitution of components may impair intrinsic safety and / or suitability for Div. 2 / Zone 2.

Warning: To prevent ignition of explosive atmospheres, disconnect power before servicing and do not separate connectors when energized and an explosive gas mixture is present.

Warning: Do not mount or remove modules from the Power Rail when an explosive gas mixture is present.

Revision date:
2019-04-04

Version Revision
V7R0

Prepared by:
PB

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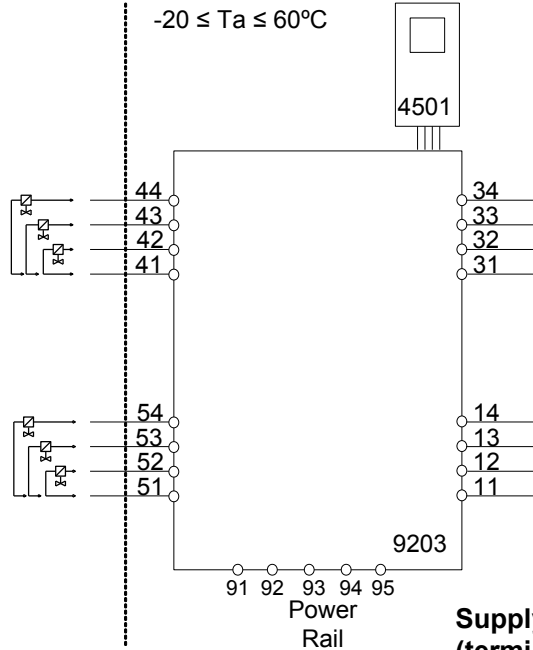
LERBAKKEN 10, 8410 RØNDE DENMARK

9203Bxxx Installation:

Hazardous Classified Location

 Class I/II/III, Division 1, Group A,B,C,D,E,F,G
 or Class I, Zone 0/1 Group IIC, [AEx ia] IIC
 or Group IIC, [Ex ia Ga] IIC Gc

Unclassified Location or
Hazardous Classified Location
 Class I, Division 2, Group A,B,C,D T4
 or Class I Zone 2 Group IIC T4 Gc

 Simple Apparatus or
 Intrinsically safe apparatus
 with entity parameters:
 $V_{max}(U_i) \geq V_t(U_o)$
 $I_{max}(I_i) \geq I_t(I_o)$
 $P_i \geq P_t(P_o)$
 $C_a(C_o) \geq C_{cable} + C_i$
 $L_a(L_o) \geq L_{cable} + L_i$

Supply / Input
(terminal 11,12,13,14)
(terminal 31,32,33,34)
(terminal 91,92,93,94,95)
 $U_m: 253V, \text{max. } 400\text{Hz}$
Terminal (31,32)
Supply:

 Voltage 19.2 – 31.2 VDC
 Power max. 3.5 W

Terminal (11,12 and 13,14)
Input:

 Voltage max 28VDC
 Trig: NPN Low < 2V, High > 4V
 Trig: PNP Low < 8V, High > 10V

Terminal (33,34)
Status Relay:

 Voltage max. 125 VAC / 110 VDC
 Power max. 62.5 VA / 32 W
 Current max. 0.5 AAC / 0.3 ADC

Non Hazardous location:
Division 2 or Zone 2 installation:

 32 VAC / 32VDC
 16 VA / 32 W
 0.5 AAC / 1 ADC

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Module 9203B1A & 9203B1B Terminal 41-42 / 51-52		Co/Ca	Lo/La	Lo/Ro or La/Ra
Uo/Voc	28 V	IIC or A,B	80 nF	4.2 mH
Io/Isc	93 mA	IIB or C,E,F	640 nF	16.8 mH
Po	0.65 W	IIA or D,G	2.1 μF	436 μH/Ω

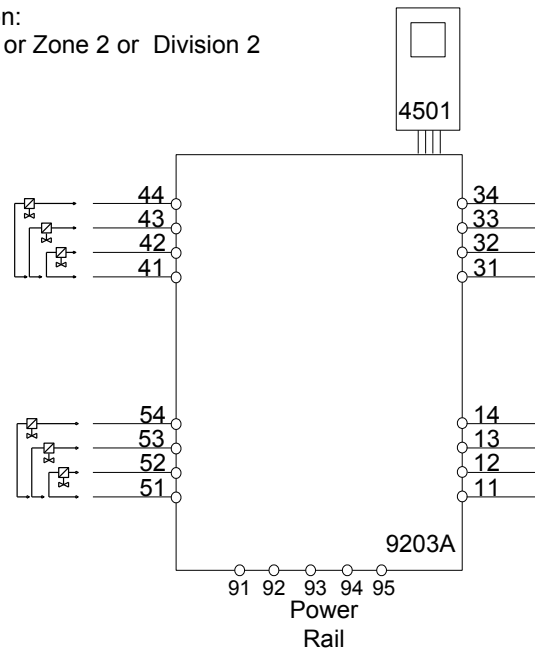
Module 9203B2A Terminal 41-42		Co/Ca	Lo/La	Lo/Ro or La/Ra
Uo/Voc	28 V	IIC or A,B	80 nF	2.69 mH
Io/Isc	115 mA	IIB or C,E,F	640 nF	10.8 mH
Po	0.81 W	IIA or D,G	2.1 μF	20.8 mH

Module 9203B1A & 9203B1B Terminal 41-43 / 51-53		Co/Ca	Lo/La	Lo/Ro or La/Ra
Uo/Voc	28 V	IIC or A,B	80 nF	3.5 mH
Io/Isc	100 mA	IIB or C,E,F	640 nF	14.2 mH
Po	0.70 W	IIA or D,G	2.1 μF	402 μH/Ω

Module 9203B2A Terminal 41-43		Co/Ca	Lo/La	Lo/Ro or La/Ra
Uo/Voc	28 V	IIC or A,B		
Io/Isc	125 mA	IIB or C,E,F	640 nF	9.1 mH
Po	0.88 W	IIA or D,G	2.1 μF	17.6 mH

Module 9203B1A & 9203B1B Terminal 41-44 / 51-54		Co/Ca	Lo/La	Lo/Ro or La/Ra
Uo/Voc	28 V	IIC or A,B	80 nF	2.9 mH
Io/Isc	110 mA	IIB or C,E,F	640 nF	11.8 mH
Po	0.77 W	IIA or D,G	2.1 μF	369 μH/Ω

Module 9203B2A Terminal 41-44		Co/Ca	Lo/La	Lo/Ro or La/Ra
Uo/Voc	28 V	IIC or A,B		
Io/Isc	135 mA	IIB or C,E,F	640 nF	7.8 mH
Po	0.95 W	IIA or D,G	2.1 μF	15.1 mH

9203Axxx Installation:
Non Classified area or Zone 2 or Division 2

Terminal (31,32)
Supply:

Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

Terminal (11,12 and 13,14)
Input:

Voltage max 28VDC
Trig: NPN Low < 2V, High > 4V
Trig: PNP Low < 8V, High > 10V

Terminal (33,34)
Status Relay:

Voltage max. 125 VAC / 110 VDC
Power max. 62.5 VA / 32 W
Current max. 0.5 AAC / 0.3 ADC

Zone 2 installation

32 VAC / 32 VDC
16 VA / 32 W
0.5 AAC / 1 ADC

Revision date:
2019-04-04

Version Revision
V7R0

Prepared by:
PB

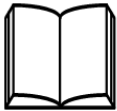
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UL Installation drawing



For safe installation of the Process Control Equipment (Associated Apparatus) 9203 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.



For Installation in DIV2/Zone2 the following must be observed. The 4501 programming module is to be used solely with PR electronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed

Model: 9203abcd-U9 Solenoid / alarm driver
 a: A or B See below
 b: 1=Low current, 2=High current
 c: A= One Channel, B= Two Channel
 d: blank = Standard, 1=PNP, 2=NPN

Marking:



Proc. Cont. Eq. for Use in Haz. Loc.
 Install in CL I DIV2 GP A-D T4 provide
 IS circuits to CL I-III DIV 1 GP A-G
 or CL I Zn2 Gp IIC T4 provides IS
 E233311 circuits for CL I Zn0 Gp IIC/Zn20 Gp IIIC
 Um=253V [Exia] Installation Drawing: 9203QU01

The 9203Bxxx-U9 is galvanically isolating associated apparatus intended for installation in non-hazardous locations or Class I, Division 2, Groups A – D hazardous locations with intrinsically safe connections to Class I, II and III hazardous locations.



Proc. Cont. Eq. for Use in Haz. Loc.
 Install in CL I DIV2 GP A-D T4
 or CL I Zn2 Gp IIC T4
 E233311 Installation Drawing: 9203QU01

The 9203Axxx-U9 equipment is intended for installation in non-hazardous locations or Class I, Division 2, Groups A – D or Zone 2 Group IIC hazardous locations.

Standards:

- UL 121201 NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I AND II, DIVISION 2 AND CLASS III, DIVISIONS 1 AND 2 HAZARDOUS (CLASSIFIED) LOCATIONS Edition 9 - Revision Date 2018/08/31
- CSA C22.2 NO. 213 NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I AND II, DIVISION 2 AND CLASS III, DIVISIONS 1 AND 2 HAZARDOUS (CLASSIFIED) LOCATIONS- Edition 3 - Issue Date 2017/09/01
- UL 913 STANDARD FOR INTRINSICALLY SAFE APPARATUS AND ASSOCIATED APPARATUS FOR USE IN CLASS I, II, III, DIVISION 1, HAZARDOUS (CLASSIFIED) LOCATIONS- Edition 8 - Revision Date 2015/10/16
- CSA C22.2 NO. 60079-0 EXPLOSIVE ATMOSPHERES — PART 0: EQUIPMENT — GENERAL REQUIREMENTS- Edition 3 - Issue Date 2015/10/01
- CSA C22.2 NO. 60079-11:14 EXPLOSIVE ATMOSPHERES — PART 11: EQUIPMENT PROTECTION BY INTRINSIC SAFETY “I”- Edition 2 - Issue Date 2014/02/01

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2019-11-21

Version Revision
V1 R0

Prepared by:
PB

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Installation notes 9203Axxx-U9 and 9203Bxxx-U9

The module must be installed in a tool-secured enclosure suitable for the application in accordance with the National Electrical Code (ANSI/NFPA 70) for installation in the United States, the Canadian Electrical Code for installations in Canada, or other local codes, as applicable.

The module is galvanically isolated and does not require grounding.

Terminal 41, 42, 43, 44 are internally connected to CH1.

Terminal 51, 52, 53, 54 are internally connected to CH2.

Install in pollution degree 2, overvoltage category II in accordance with IEC 60664-1.

Use minimum 75 °C copper conductors with wire size AWG: (26-14)

Warning: Substitution of components may impair intrinsic safety.

Avertissement : La substitution des composants peut nuire à la sécurité intrinsèque'.

There are no serviceable parts in the equipment and no component substitution is permitted

Warning: To prevent ignition of the explosive atmospheres, disconnect power before servicing and do not separate connectors, install or remove module from Power Rail when energized and an explosive gas mixture is present.

Avertissement : Pour éviter l'inflammation d'atmosphères explosibles, déconnectez l'alimentation avant les opérations d'entretien. Ne montez pas ou n'enlevez pas les connecteurs quand le module est sous tension et en présence d'un mélange de gaz. Ne montez pas ou n'enlevez pas les modules du rail d'alimentation en présence d'un mélange de gaz.

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Installation notes 9203Bxxx-U9:

Associated Equipment /Appareillage Associé [Ex ia]

The Ex output current of this associated apparatus is limited by a resistor such that the output voltage-current plot is a straight line drawn between open-circuit voltage and short-circuit current.

Selected intrinsically safe equipment must be third party listed as intrinsically safe for the application, and have intrinsically safe entity parameters conforming with Table 1 below.

TABLE 1:

<u>I.S. Equipment</u>		<u>Associated Apparatus</u>
V max (or Ui)	≥	Voc or Vt (or Uo)
I max (or Ii)	≥	Isc or It (or Io)
P max, Pi	≥	Po
Ci + Ccable	≤	Ca (or Co)
Li + Lcable	≤	La (or Lo)

The module may also be connected to a simple apparatus as defined in Article 504.2 and installed and temperature classified in accordance with Article 504.10(D) of the National Electrical Code (ANSI/NFPA 70), or other local codes, as applicable.

Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations as shown in Table 1. Cable capacitance, Ccable, plus intrinsically safe equipment capacitance, Ci must be less than the marked capacitance, Ca (or Co), shown on any associated apparatus used. The same applies for inductance (Lcable, Li and La or Lo, respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60 pF/ft., Lcable = 0.2 μH/ft.

Where multiple circuits extend from the same piece of associated apparatus, they must be installed in separate cables or in one cable having suitable insulation. Refer to Article 504.30(B) of the National Electrical Code (ANSI/NFPA 70) and Instrument Society of America Recommended Practice ISA RP12.06 for installing intrinsically safe equipment.

Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 of the National Electrical Code (ANSI/NFPA 70) or other local codes, as applicable.

The module has not been evaluated for use in combination with another associated apparatus.

For installations in which both the Ci and Li of the intrinsically safe apparatus exceeds 1% of the Ca (or Co) and La (or Lo) parameters of the associated apparatus (excluding the cable), then 50% of Ca (or Co) and La (or Lo) parameters are applicable and shall not be exceeded. The reduced capacitance shall not be greater than 1 μF for Groups C and/or D, and 600 nF for Groups A and B. The values of Ca (or Co) and La (or Lo) determined by this method shall not be exceeded by the sum of all of Ci plus cable capacitances and the sum of all of the Li plus cable inductances in the circuit respectively.

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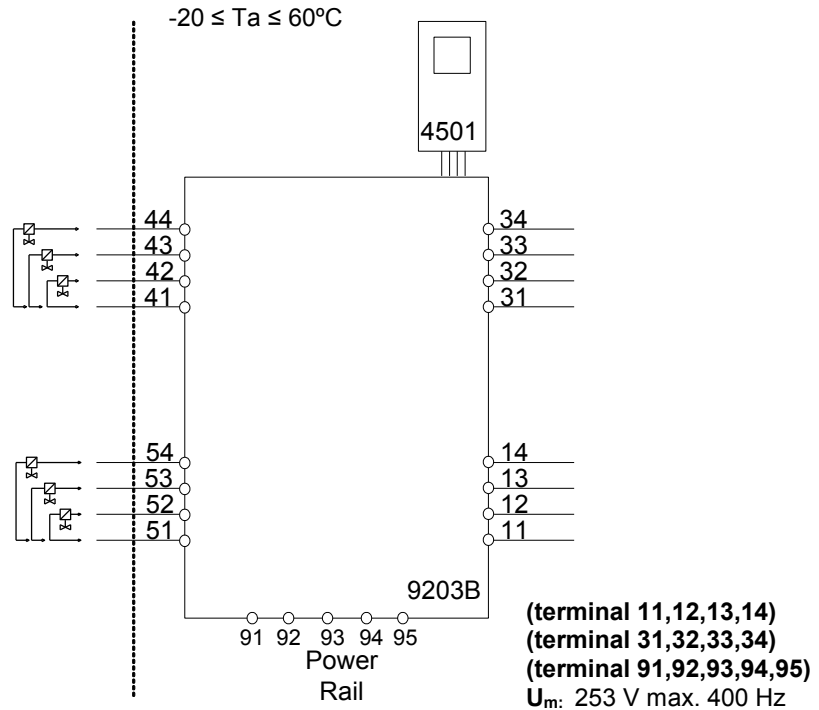
9203Bxxx-U9 Installation:

Hazardous Classified Location

Class I/II/III, Division 1, Group A,B,C,D,E,F,G
Zone 0,1, 2 Group IIC, IIB, IIA or
Zone 20, 21

**Unclassified Location or
Hazardous Classified Location**

Class I, Division 2, Group ABCD T4
Class I Zone 2 Group IIC T4



Terminal (31,32)

Supply:

Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

Terminal (11,12 and 13,14)

Input:

Voltage max 28VDC
Trig: NPN Low < 2V, High > 4V
Trig: PNP Low < 8V, High > 10V

Terminal (33,34)

Status Relay:

Voltage max. 125 Vac / 110 Vdc
Current max. 0.5 Aac / 0.3 Adc

Non Hazardous location

**Class I Division 2 or
Zone 2 installation:**

32 Vac / 32 Vdc
0.5 Aac / 0.3 Adc

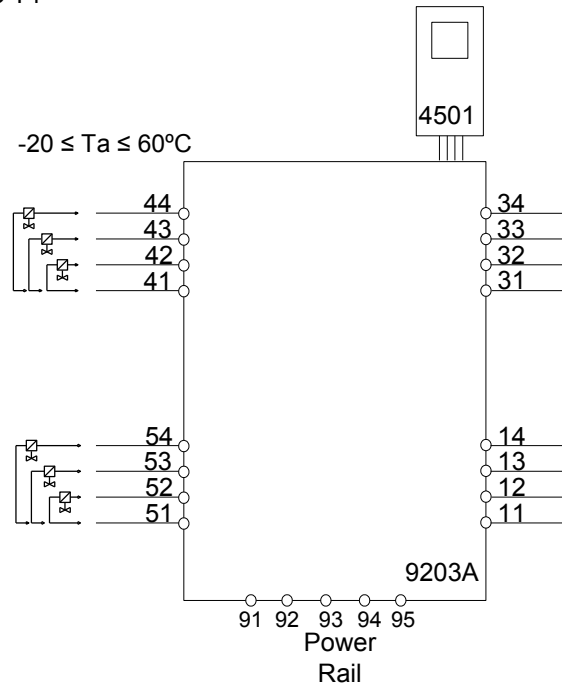
LERBAKKEN 10, 8410 RØNDE DENMARK

9203B1A-U9 9203B1B-U9 Terminal 41-42/51-52			Ca, Co	La, Lo	Lo/Ro	9203B2A-U9 Terminal 41-42			Ca, Co	La, Lo	Lo/Ro
Voc, Uo	28V	IIC or A,B	80nF	4.15mH	54μH/Ω	Voc, Uo	28V	IIC or A,B	80nF	2.69mH	44μH/Ω
Isc, Io	93 mA	IIB or C,E,F	640nF	16.6mH	218μH/Ω	Isc, Io	115mA	IIB or C,E,F	640nF	10.8mH	176μH/Ω
Po	0.65W	IIA or D,G	2.1μF	32.6mH	436μH/Ω	Po	0.81W	IIA or D,G	2.1μF	20.8mH	353μH/Ω
9203B1A-U9 9203B1B-U9 Terminal 41-43/51-53			Ca, Co	La, Lo	Lo/Ro	9203B2A-U9 Terminal 41-43			Ca, Co	La, Lo	Lo/Ro
Voc, Uo	28V	IIC or A,B	80nF	3.5mH	51μH/Ω	Voc, Uo	28V	IIC or A,B			
Isc, Io	100mA	IIB or C,E,F	640nF	14.2mH	204μH/Ω	Isc, Io	125mA	IIB or C,E,F	640nF	9.1mH	163μH/Ω
Po	0.70W	IIA or D,G	2.1μF	27.6mH	408μH/Ω	Po	0.88W	IIA or D,G	2.1μF	17.6mH	327μH/Ω
9203B1A-U9 9203B1B-U9 Terminal 41-44/51-54			Ca, Co	La, Lo	Lo/Ro	9203B2A-U9 Terminal 41-44			Ca, Co	La, Lo	Lo/Ro
Voc, Uo	28V	IIC or A,B	80nF	2.9mH	46μH/Ω	Voc, Uo	28V	IIC or A,B			
Isc, Io	110mA	IIB or C,E,F	640nF	11.8mH	184μH/Ω	Isc, Io	135mA	IIB or C,E,F	640nF	7.8mH	150μH/Ω
Po	0.77W	IIA or D,G	2.1μF	22.8mH	369μH/Ω	Po	0.95W	IIA or D,G	2.1μF	15.1mH	301μH/Ω

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9203Axxx-U9 and 9203Bxxx-U9 Installation:

Non Hazardous area or
Class I, Division 2, Group ABCD T4
or Zone 2 Group IIC T4



Terminal (31,32)

Supply:

Voltage 19.2 – 31.2 VDC
Power max. 3.5 W

Terminal (11,12 and 13,14)

Input:

Voltage max 28VDC
Trig: NPN Low < 2V, High > 4V
Trig: PNP Low < 8V, High > 10V

Terminal (33,34)

Status Relay: Non Hazardous location

Voltage max. 125 Vac / 110 Vdc
Current max. 0.5 Aac / 0.3 Adc

**Class I Division 2
Zone 2 installation**

32 Vac / 32 Vdc
0.5 Aac / 0.3 Adc

Terminal (41..44 / 51..54)

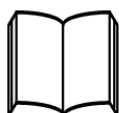
Umax 28 V
Imax 135 mA
Pmax 0.95 W

INMETRO Desenhos para Instalação



Para instalação segura do 9203B o manual seguinte deve ser observado. O módulo deve ser instalado somente por profissionais qualificados que estão familiarizados com as leis nacionais e internacionais, diretrizes e normas que se aplicam a esta área.

Ano de fabricação pode ser obtido a partir dos dois primeiros dígitos do número de série.



4501

Para a instalação na Zona 2 o seguinte deve ser observado. O módulo de programação de 4501, deve ser utilizado apenas com os módulos PRelectronics. É importante que o módulo esteja intacto e não tenha sido alterado ou modificado de qualquer maneira. Apenas os módulos 4501 livres de poeira e umidade devem ser instalados.

INMETRO Certificado DEKRA 16.0006X

Marcas 9203Bxxx

[Ex ia Ga] IIC/IIB/IIA
Ex nA nC IIC T4 Gc
[Ex ia Da] IIIC
[Ex ia Ma] I

Normas:

ABNT NBR IEC 60079-0:2013, ABNT NBR IEC60079-11:2013,
ABNT NBR IEC60079-15:2012

Type	Installation	Current Output	Channels	Input
9203	Ex-Barrier / Zone 2 :B	Low current :1	Single :A	Standard :-
			Double :B	PNP : 1
		High current :2	Single :A	NPN : 2

Notas de instalação:

Instalação em grau de poluição 2, categoria de sobretensão II conforme definido no IEC 60664-1. Os circuitos não intrinsecamente seguros só pode ser connectado para sobretensão limitado ao categoria I/II como definido na IEC 60664-1

Não separe conectores quando energizado ou quando uma mistura de gás explosivo estiver presente. Não monte ou remova módulos do trilho de alimentação quando uma mistura de gás explosivo estiver presente. Para o grupo I (minas), aplicam-se os parâmetros do grupo IIA. Desligue a alimentação antes da manutenção. A fiação de terminais sem uso não é permitida.

A fonte de Loop e terminais de entrada de corrente para o mesmo canal não deve ser aplicada ao mesmo tempo.

Em tipo de proteção [Ex ia Da] os parâmetros para a segurança intrínseca para grupo de gás IIB são aplicáveis.

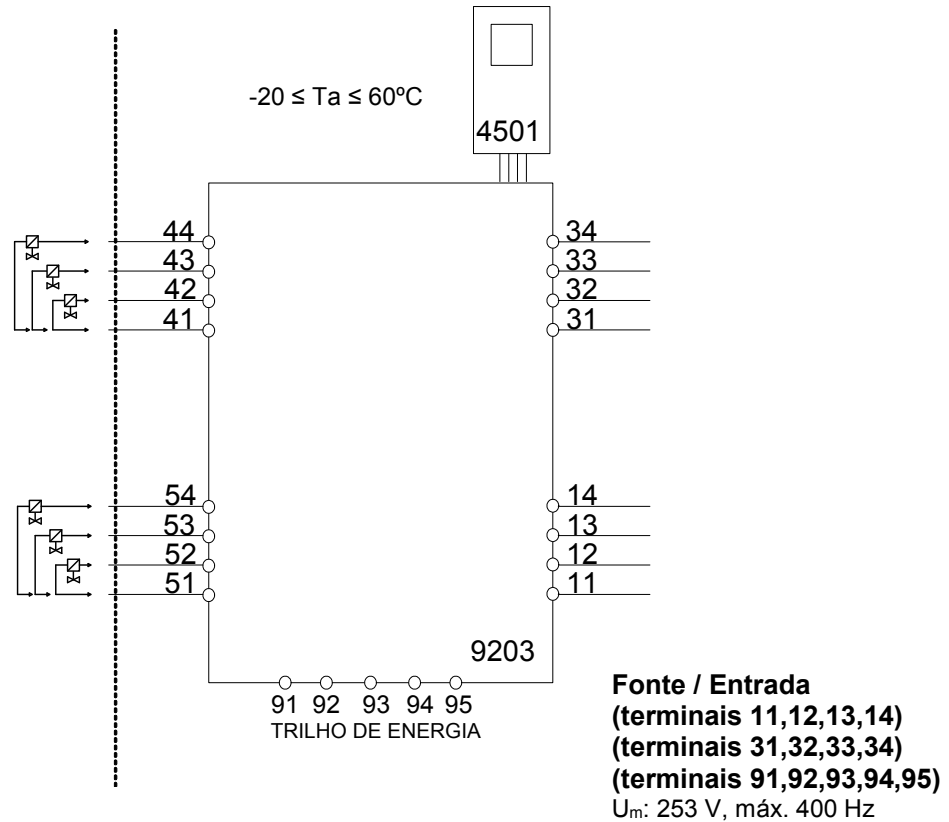
Para a instalação em Zona 2, o módulo deve ser instalado em um invólucro conformidade com o tipo de proteção 'Ex n' ou 'Ex e', fornecendo no mínimo grau de proteção IP54.

Dispositivos de entrada de cabo e elementos de vedação devem cumprir com os mesmos requisitos.

Para a instalação de trilho de energia na Zona 2, apenas o trilho de alimentação Rail 9400 fornecido pela Unidade de Controle de Potência 9410 é permitido.

Área de classificada
Zona 0, 1, 2, 20, 21 e 22

Área de não classificada
ou Zona 2



Terminal (31,32)

Fonte:

Voltagem 19,2 – 31,2 VDC
Potência máx. 3,5 W

Terminais (11,12 e 13,14)

Entrada:

Voltagem máx. 28,VDC
Gatilho: NPN Baixo < 2,V, Alto > 4,V
Gatilho: PNP Baixo < 8,V, Alto > 10,V

Terminais (33,34)

Relê de Estado:

Voltagem máx. 125 VAC / 110 VDC
Potência máx. 62,5 VA / 32 W
Corrente máx. 0,5 AAC / 0,3 ADC

Área de não classificada

Instalação Zona 2

32 VAC / 32 VDC
16 VA / 32 W
0,5 AAC / 1 ADC

LERBAKKEN 10, 8410 RØNDE DENMARK

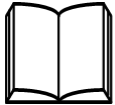
9203B1A, 9203B1B Terminais 41-42/51-52			Co	Lo	Lo/Ro	9203B2A Terminais 41-42			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	4.2mH	54μH/Ω	Uo	28V	IIC	80nF	2.69mH	44μH/Ω
Io	93 mA	IIB	640nF	16.8mH	218μH/Ω	Io	115mA	IIB	640nF	10.8mH	176μH/Ω
Po	0.65W	IIA	2.1μF	32.6mH	436μH/Ω	Po	0.81W	IIA	2.1μF	20.8mH	353μH/Ω
9203B1A, 9203B1B Terminais 41-43/51-53			Co	Lo	Lo/Ro	9203B2A Terminais 41-43			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	3.5mH	50μH/Ω	Uo	28V	IIC			
Io	100mA	IIB	640nF	14.2mH	201μH/Ω	Io	125mA	IIB	640nF	9.1mH	163μH/Ω
Po	0.70W	IIA	2.1μF	27.6mH	402μH/Ω	Po	0.88W	IIA	2.1μF	17.6mH	327μH/Ω
9203B1A, 9203B1B Terminais 41-44/51-54			Co	Lo	Lo/Ro	9203B2A Terminais 41-44			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	2.9mH	46μH/Ω	Uo	28V	IIC			
Io	110mA	IIB	640nF	11.8mH	184μH/Ω	Io	135mA	IIB	640nF	7.8mH	150μH/Ω
Po	0.77W	IIA	2.1μF	22.8mH	369μH/Ω	Po	0.95W	IIA	2.1μF	15.1mH	301μH/Ω

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IECEx 설치도면



9203의 안전한 설치를 위해 다음 사항을 준수해야 합니다. 이 모듈은 이 지역에 적용되는 국내 및 국제 법률 지침 및 표준에 정통한 유자격자만 설치해야 합니다.
제조연도는 일련번호의 처음 두 자리입니다.



구역 2 / 다전 2에 설치하려면 다음 사항을 준수해야 합니다.
4501 프로그래밍 모듈은 PR 제품의 모듈과 함께 사용해야 합니다. 모듈이 손상되지 않았고, 어떤 식으로든 변경 또는 수정되지 않는 것이 중요합니다. 먼지와 습기가 없는 상태에서 4501 모듈을 설치해야 합니다.

IECEx 인증서	IECEx KEM 09.0001X
마킹 9203Bxxx	[Ex ia Ga] IIC/IIB/IIA [Ex ia Da] IIIC [Ex ia Ma] I
마킹 9203Bxxx , 9203Axxx	Ex ec nC IIC T4 Gc
표준	IEC60079-0:2017, IEC60079-11:2011, IEC60079-15:2017, IEC60079-7:2015+A1:2017

유형	설치	전류 출력	채널	입력
9203	비Ex / 구역2 : A	저전류 : 1	단일 : A	표준 : -
	Ex 배리어 / 구역2 : B	고전류 : 2	이중 : B	PNP : 1
			단일 : A	NPN : 2

설치참고사항

IEC60664-1에 정의된 대로 오염 등급 2, 과전압 범주 II에 설치하십시오.
전원이 공급되고 폭발성 가스 혼합물이 있는 경우, 케이블을 분리하지 마십시오.
폭발성 가스 혼합물이 있는 경우, 파워 레일에 모듈을 장착하거나 제거하지 마십시오.
수리하기 전에 전원을 분리하십시오.
사용하지 않는 단자의 배선은 허용되지 않습니다.
보호 유형 [Ex ia Da]에서는 가스 그룹 IIB의 본질 안전 매개변수를 적용할 수 있습니다.

구역 2에 설치하는 경우, 모듈을 보호 유형 Ex n 또는 Ex e인 인클로저에 설치하고, 최소한 IP54의 보호 수준을 제공해야 합니다. 케이블 인입 장치와 밀폐 요소는 동일한 요구 사항을 충족해야 합니다.

구역 2의 파워 레일에 설치하는 경우, 전력 제어 장치 유형 9410 (IECEx 적합성 인증서 IECEx KEM 08.0025X)의 공급을 받는 파워 레일 유형 9400만 허용됩니다.

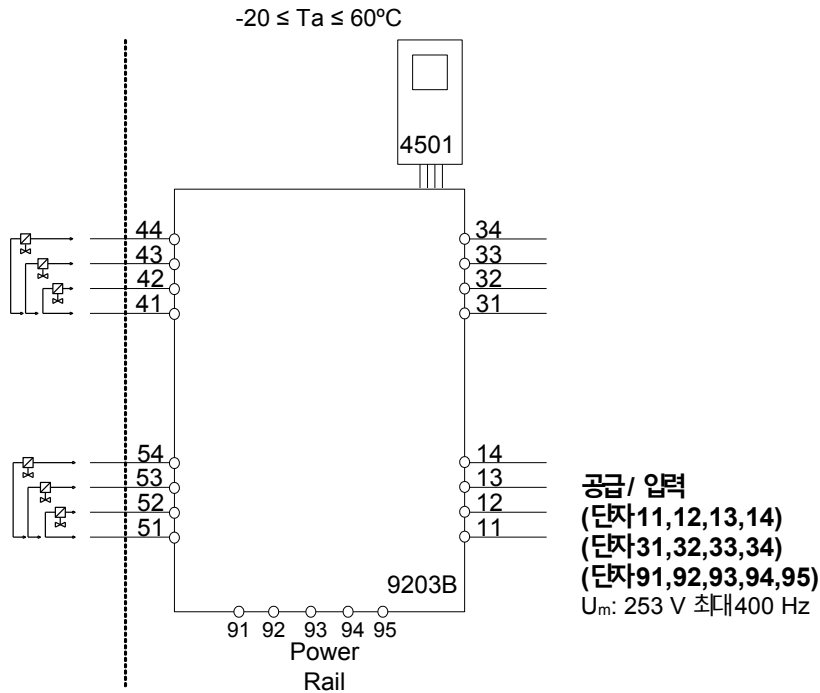
개정일	버전 개정	제작	페이지
2021년 05월 31일	V7 R0-KR01	PB	1/4

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9203Bxxx 설치

위험지역
구역0, 1, 2, 20, 21, 22 또는 구역2

비위험지역



단자(31,32)
공급
전압 19.2 – 31.2 VDC
최대출력 3.5 W

단자(11,12 및13,14)
입력
최대전압 28 VDC
트러거 NPN 낮음 < 2 V, 높음 > 4 V
트러거 PNP 낮음 < 8 V, 높음 > 10 V

단자(33,34)
상태 릴레이
최대전압 125 VAC / 110 VDC
최대출력 62.5 VA / 32 W
최대전류 0.5 AAC / 0.3 ADC

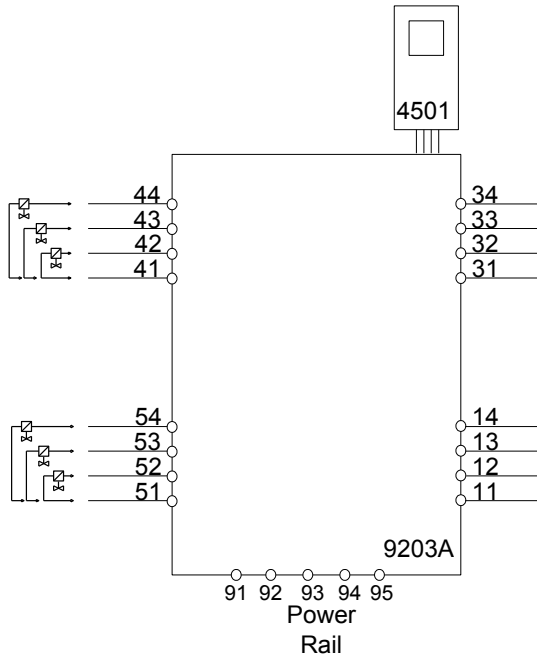
구역2 설치
32 VAC / 32 VDC
16 VA / 32 W
0.5 AAC / 1 ADC

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9203B1A, 9203B1B 단자41-42/51-52			Co	Lo	Lo/Ro	9203B2A 단자41-42			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	4.2mH	54μH/Ω	Uo	28V	IIC	80nF	2.69mH	44μH/Ω
Io	93 mA	IIB	640nF	16.8mH	218μH/Ω	Io	115mA	IIB	640nF	10.8mH	176μH/Ω
Po	0.65W	IIA	2.1μF	32.6mH	436μH/Ω	Po	0.81W	IIA	2.1μF	20.8mH	353μH/Ω
		I	3.76μF	32.6mH	436μH/Ω			I	3.76μF	20.8mH	353μH/Ω
9203B1A, 9203B1B 단자41-43/51-53			Co	Lo	Lo/Ro	9203B2A 단자41-43			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	3.5mH	54μH/Ω	Uo	28V	IIC			
Io	100mA	IIB	640nF	14.2mH	218μH/Ω	Io	125mA	IIB	640nF	9.1mH	163μH/Ω
Po	0.70W	IIA	2.1μF	27.6mH	436μH/Ω	Po	0.88W	IIA	2.1μF	17.6mH	327μH/Ω
		I	3.76μF	27.6mH	436μH/Ω			I	3.76μF	17.6mH	327μH/Ω
9203B1A,9203B1B 단자41-44/51-54			Co	Lo	Lo/Ro	9203B2A 단자41-44			Co	Lo	Lo/Ro
Uo	28V	IIC	80nF	2.9mH	46μH/Ω	Uo	28V	IIC			
Io	110mA	IIB	640nF	11.8mH	184μH/Ω	Io	135mA	IIB	640nF	7.8mH	150μH/Ω
Po	0.77W	IIA	2.1μF	22.8mH	369μH/Ω	Po	0.95W	IIA	2.1μF	15.1mH	301μH/Ω
		I	3.76μF	22.8mH	369μH/Ω			I	3.76μF	15.1mH	301μH/Ω

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9203Axxx 설치
비분류 지역 또는 구역2



단자(31,32)
공급
전압 19.2 – 31.2 VDC
최대 출력 3.5 W

단자(11,12 및 13,14)
입력
최대 전압 28 VDC
트러거 NPN 낮음 < 2 V, 높음 > 4 V
트러거 PNP 낮음 < 8 V, 높음 > 10 V

단자(33,34)
상태 릴레이
비유험 장소
최대 전압 125 VAC / 110 VDC
최대 출력 62.5 VA / 32 W
최대 전류 0.5 AAC / 0.3 ADC

구역2 설치
32 VAC / 32 VDC
16 VA / 32 W
0.5 AAC / 1 ADC

단자(41...44 / 51...54)
최대 전압 28 V
최대 전류 135 mA
최대 출력 0.95 W

文档更新记录

以下列表提供了有关本文档修订的说明。

版本号	日期	说明
106	1707	添加了有关最大需用功率的规格。 新 INMETRO 证书和安装图。
107	1735	接线方式图和方框图已更新。
108	1914	CCOE 认证中断。
109	1949	添加了经过 UL 913 认证的产品类型。 新 FM 证书和安装图。
110	2103	添加 CCC 认证。 菜单流程图已更新。
111	2317	ATEX和IECEX认证已更新 - Ex nA 更改为 Ex ec。 添加 UKEX 认证。 添加了经过 KCs 认证的产品类型。

无论您身在何处， 我们始终在您身边

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我们的创新专利技术来源于大量的研发设施以及对客户需求和工艺过程的深刻理解。简约、专注、勇气、卓越是我们的座右铭。这指引着我们不断帮助一些世界上最大的公司实现更卓越的智能化 (PERFORMANCE MADE SMARTER)。