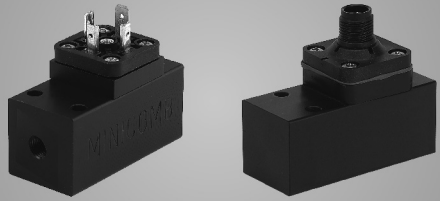


本说明书中所述的所有信息为截止到该版本印刷之日的最新技术状况。此处所汇总的信息已经过最细致的整理，供您使用。但尽管如此、我们还是要请求您的理解：我们将不对该说明书所述内容的正确性承担责任。所有所述的技术数据只作为特征参数。有法律约束力的数据请您从最新的规格参数表中读取。所有在本产品目录中提及的产品名称、产品标志和图标都是注册商标、为相应权利所有人的财产。CHEMSEAL, DIMIO, INDUSENS, INDUSWITCH, INTELLICOMB, MA-NOCOMB, MINICOMB 是PINTER 测量与控制技术有限公司以及/或者其在德国、欧盟、瑞士和/或其他国家内联合企业的商标及/或注册商标。该说明书或该说明书的一部分未经许可不得进行翻制和/或复印。首页的例图为例配置。因此交货的产品可能同图例有所偏差。该说明书原文为德语。

操作说明书 Operating Instructions

MINICOMB® 紧凑型压力开关 30x30 Compact Pressure Switch 30x30



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BA MINICOMB-12R1-CNEN

产品描述

该产品为压力开关，可用于压力管道中压缩空气和非侵蚀性气体的测量。压力开关设定的压力值（开关点）通过一个微动开关（转换开关）转换成二进制电信号。

- ### 符合规定的使用
- 请仅在工业领域使用该产品。
 - 该产品只能同下列介质使用：压缩空气或气体（非侵蚀性，同铝/黄铜/丁腈橡胶（NBR）/氟橡胶（FKM）可兼容）或者液体（非侵蚀性，非高粘度，同铝/黄铜/丁腈橡胶（NBR）/氟橡胶（FKM）可兼容）
 - 该产品只能在技术数据表中所述的工作条件和工作能力限定范围内使用
 - 请您同时注意其他设备元件的使用说明，例如设备生产商的设备文件
 - 另外，请您注意欧洲及本国国内所要求的通行规定、法律和其他强制约束规定，以及您所在国家有关事故预防和环保的现行规章。
 - 在任何情况下，都不要对该仪器施加机械负荷。绝对不要将该仪器当作扶手或台阶使用。请不要在该仪器上摆置物品。
 - 仪器不得进行改动和改装！
 - 所有同该产品的操作只能由专业技术人员、或者在专业技术人员指导监督之下由已受训人员进行操作。专业技术人员指的是：基于其专业职业教育、知识和经验、及其对相关规定的知识，能够对交给他的工作进行评估、识别可能的危险、并且能采取合适的安全措施。专业技术人员必须遵守相关的专业特定规程。请您也注意在使用国内其他可能的要求。
 - 在您安装该仪器、或者插拔插头之前，请务必将设备的重要相关部分关到无压力、无电源连接的状态。确保设备不会重新合闸。安装时，请将警示标牌挂在总开关处，一直保留到重新连接电源之前。
- 符合规定的使用也包括：您已经阅读并理解该使用说明。

- ### 安装
- 请您在安装和投用该产品之前，将其周围环境适应几个小时，否则在外壳内会出现冷凝水。
 - 请按照说明书描述安装固定该产品。
 - 如果该产品没有按照规定加以固定，设备中的其他部件可能会由于该产品不受控制的运动而受损，也可能伤害操作人员。请您确保该产品已安全固定。

- ### 电气连接
- 电气连接线的铺设要注意，不会有人被其绊倒。
 - 请使用标准件线缆（颜色和数字代码）。请注意线缆的正确连接！
 - 请根据说明书描述连接该产品。
 - 如果该产品未按规定进行电气连接，其防护等级可能无法得到保证。请您确保插头的安全连接。

- ### 调试，开关点设置
- 请您在调试之前确保，所有插拔连接和/或螺栓连接的密封件都已按规定安装。
 - 如果要将开关点调至较高的压力，请将调节按钮向(+)方向旋转。
 - 如果要将开关点调至较低的压力，请将调节按钮向(-)方向旋转。
 - 所设定的开关点可从调节刻度上读出。
 - 请使用一个外部的基准测量仪器检验所设定的开关点。
 - 开关点也可以在运行时进行设定。
 - 请注意，开关点的错误设定可能影响设备功能的安全无误！

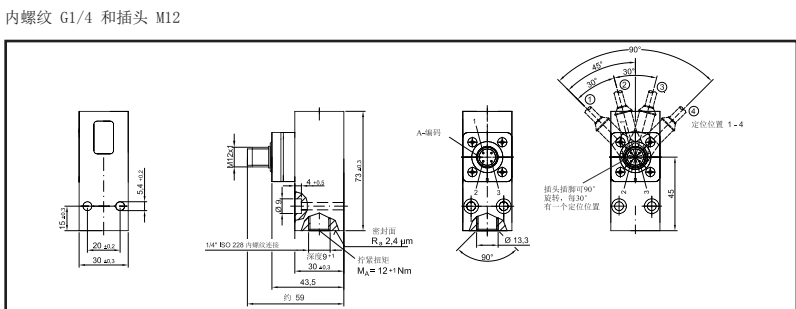
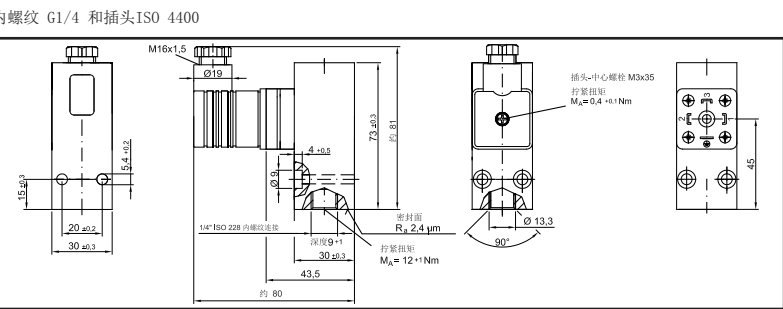
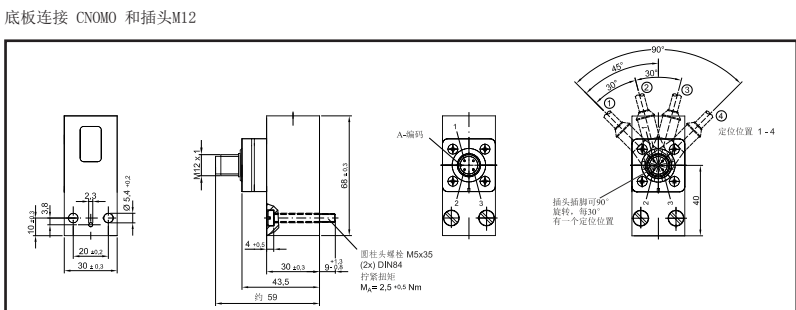
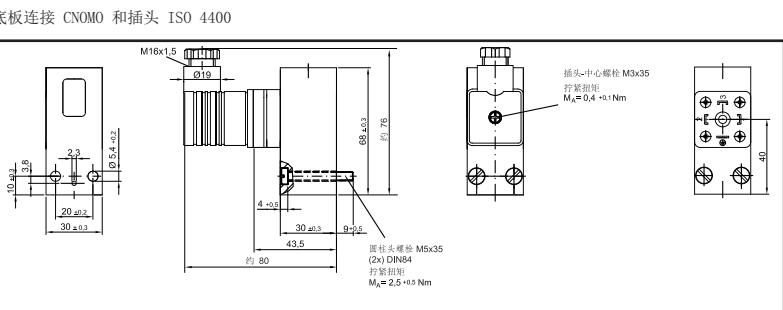
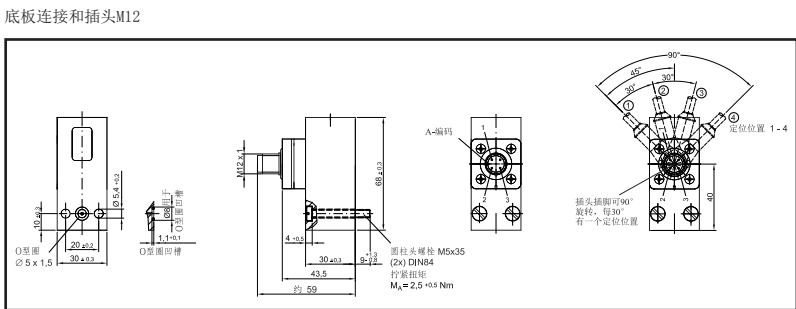
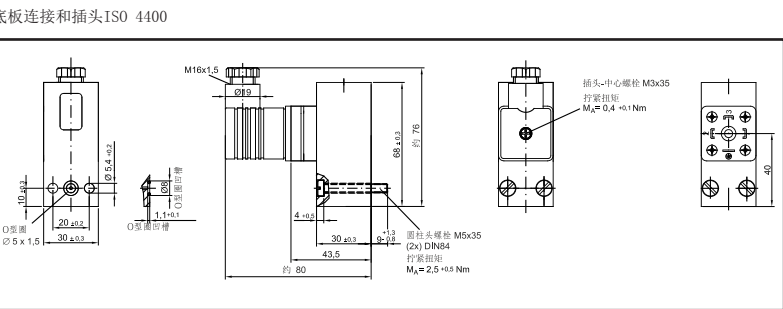
- ### 运行中
- 该产品无需保养。出现技术问题请同PINTER公司联系。
 - 该仪器只能用微微湿润的布块清洁。湿润请使用水或者柔和的清洁剂。切勿使用溶剂或强刺激的清洁剂！

- ### 拆卸，废弃处理
- 产品拆卸请按照以上所述各点
 - 废弃仪器的处理请按照您所在国家的相应规定

- ### 供货范围
- 供货范围包括：
- 1个MINICOMB 紧凑型压力开关 30x30
 - 1个 接线盒，按照各自规格
 - 2个 固定螺栓（只有底板连接 / CNOMO）
 - 1个O型圈（只有底板连接）
 - 1份使用说明书

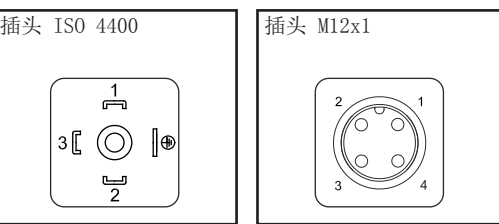
压力范围	规格		
	接口	零件号	
0.2 - 16 bar	ISO 4400	底板连接	C0011F-199-PAO
		底板连接 CNOMO	C0011F-199-CAO
		内螺纹 G1/4	C0051F-199-4AO
	M12x1	底板连接	C0011F-199-PDO
		底板连接 CNOMO	C0011F-199-CDO
		内螺纹 G1/4	C0051F-199-4DO
-0.9...0 bar	ISO 4400	底板连接	C0011F-300-PAO
		内螺纹 G1/4	C0051F-300-4AO
	M12x1	底板连接	C0011F-300-PDO
		内螺纹 G1/4	C0051F-300-4DO
	ISO 4400	底板连接	C0011F-301-PAO
		内螺纹 G1/4	C0051F-301-4AO
M12x1	底板连接	C0011F-301-PDO	
	内螺纹 G1/4	C0051F-301-4DO	

功能	机械压力开关 力平衡测量系统 带波纹管压力传感器
使用寿命	至少 一千万次负荷变化
压力范围 (设置范围)	0,2 - 16 bar
真空范围 (设置范围)	-0,9 - 0 bar
压力/真空范围 (设置范围)	-0,9...+1 bar
超压安全	25 bar
真空安全	-1 bar
外壳材料	铝
同材质接触部件的材料	铝, 黄铜, 丁腈橡胶(密封)
允许的介质温度	-10...+80° C
允许的环境温度	-20...+80° C
温度-偏差	约1% 每 20° C
开关接触	1 个微动开关 (转换开关)
开关精度	≤ 1,0% FS
重复精度	≤ 1,0% FS
开关偏差 (滞后)	≤ 1,0% FS
工艺连接件 (可选)	底板连接; 底板连接 CNOMO; 内螺纹 G1/4;
电气连接件 (可选)	插头 EN175 301-803-A (ISO 4400); 插头 M12x1
重量	约 160 g
防护等级	IP65 (使用M12 插头时为IP67)
耐震强度 (XYZ-方向)	15 g (IEC 60068-2-64)
抗振动强度 (XYZ-方向)	10 g (60 - 500 Hz) (IEC 60068-2-6)



电气连接

所示为无压状态



	插头 ISO4400	插头 M12x1	
微动开关	+UB	1	1
	开	2	2
	关	3	4
	GND	4	---

开关特性

最大允许持续电流 I max [A]，电感负载

	U [V]	30V	48V	60V	125V	250V
规格为带插头 ISO 4400	I [A] AC	3	3	3	3	3
	I [A] DC	2	0,55	0,4	0,15	---
规格为带插头 M12x1	I [A] AC	3	---	---	---	---
	I [A] DC	2	---	---	---	---

比照开关数: 30/min
比照温度: +30° C
AC = cos phi 约 0.7°
DC = L/R 约 10ms

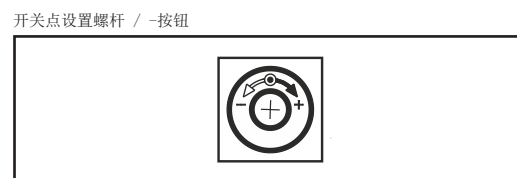
开关特性

最大允许持续电流 I max [A]，电阻负载

	U [V]	30V	48V	60V	125V	250V
规格为带插头 ISO 4400	I [A] AC	5	3	5	5	5
	I [A] DC	3	1,2	0,8	0,4	---
规格为带插头 M12x1	I [A] AC	4	---	---	---	---
	I [A] DC	3	---	---	---	---

比照开关数: 30/min
比照温度: +30° C

开关点设置



开关点刻度



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Reproduction and / or duplication of this manual or any portion of this manual is prohibited without permission. Sample configurations are shown on the title page, hence the delivered product may differ from the depicted products. This document was originally issued in German language.

Product description

The product is a pressure switch, which can be used in pressure pipes for the measurement of compressed air and non-aggressive gases. The set pressure value (switching point) is transferred into an electrical binary signal with an implemented micro-switch (SPDT).

Intended use

- Only use the product in industrial applications.
- Only use the product with the media compressed air or gas (not aggressive, compatible with aluminum / brass / NBR / FKM) or liquids (non-aggressive, non-viscous, compatible with aluminum / brass / NBR / FKM).
- Only use the product within the specifications set out in the operating conditions and limitations.
- Please also note the guidance of other system components, including the system documentation of the manufacturer.
- Please also note generally applicable statutory and other binding regulations of the European and national legislation and regulations in your country for accident prevention and environmental protection.
- Prevent mechanical loads on the device under any circumstances. Never use the device as a handle or shoulder. Do not place objects on it.
- You must not make alterations or modifications to the device!
- All activities with the product may only be performed by a specialist or by a trained person under the supervision of a specialist. A specialist is someone who based on their technical training, knowledge and experience and his knowledge of the relevant provisions of his assigned job is able to identify potential hazards and take appropriate safety measures. A specialist must comply with the relevant subject-specific rules. Note that there may additional requirements in the country of use.
- Always turn off pressure and power of the relevant part of the facility before mounting the unit or unplug or plug. Secure the part from re-powering or re-pressuring. During installation hang out warning signs that warn from re-powering or re-pressuring.

The intended use also includes that you have read and understood these instructions.

Installation

- Let the product acclimatize for several hours before installation and commissioning, as otherwise condensation water can form in the housing.
- Install and fasten the product according to the pictures.
- If the product is not properly fastened, other plant parts may be damaged by uncontrolled movements of the product, as well as personal injuries may occur. Make sure that the product is securely fastened.

Electrical connection

- Route cables so that nobody can trip over them.
- Only use harmonized (color-coded or number) cables. Make sure of the correct connection of the cables!
- Connect the product according to the pictures.
- If the product is not properly connected electrically, the protection type can not be guaranteed. Make sure the plug is securely connected.

Commissioning, Set point adjustment

- Before starting make sure that all gaskets and seals and screwed connections are installed correctly.
- Adjust the setpoint to a higher pressure by turning the knob in (+) direction.
- Adjust the setpoint to a lower pressure by turning the knob in (-) direction.
- The set point can be read on the set point scale.
- Check the switch point with an external reference measuring device (e.g. precision gauge).
- The switching point can also be adjusted during operation.
- Note that a switch point adjustment can affect the safe operation of the system!

During operation

- The product is maintenance free. In case of technical problems, please contact PINTER.
- Clean the product with a slightly damp cloth only. Use water and if necessary a mild detergent. Never use solvents or abrasive cleaners or aggressive cleaners.

Dismounting, Disposal

- Dismount the product according to the steps above.
- Dispose of the device according to the regulations of your country.

Scope of delivery

The scope of delivery includes:

- 1x MINICOMB compact pressure switch 30x30
- 1x connector depending on version
- 2x fixing screws (only sub-base mounting / CNOMO)
- 1x O-Ring (only sub-base mounting)
- 1x operating instructions

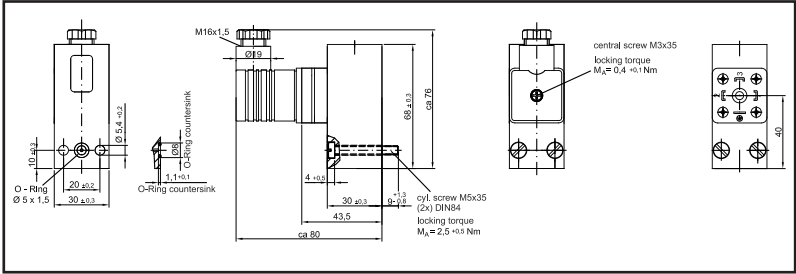
Versions

0.2 - 16 bar	ISO 4400	Sub-base mounting	C0011F-199-PAO	
		Sub-base mounting CNOMO	C0011F-199-CAO	
		Female thread G1/4	C0051F-199-4AO	
	M12x1	Sub-base mounting	C0011F-199-PDO	
		Sub-base mounting CNOMO	C0011F-199-CDO	
		Female thread G1/4	C0051F-199-4DO	
-0.9...0 bar	ISO 4400	Sub-base mounting	C0011F-300-PAO	
		Female thread G1/4	C0051F-300-4AO	
	M12x1	Sub-base mounting	C0011F-300-PDO	
		Female thread G1/4	C0051F-300-4DO	
	-0.9...+1 bar	ISO 4400	Sub-base mounting	C0011F-301-PAO
			Female thread G1/4	C0051F-301-4AO
M12x1		Sub-base mounting	C0011F-301-PDO	
		Female thread G1/4	C0051F-301-4DO	

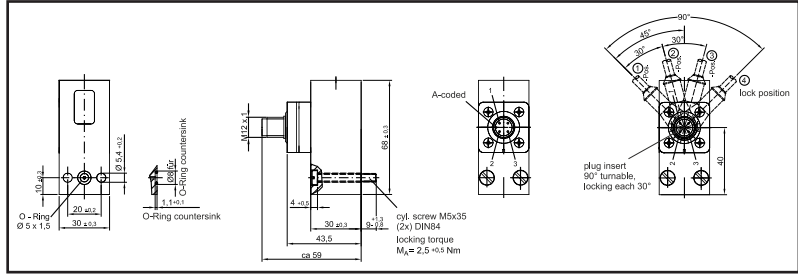
Technical Data

Function	mechanical pressure switch; force-balance measuring system with bellows sensor
Life Cycle	at least 10 mio switch cycles
Pressure Range	0,2 - 16 bar
Vacuum Range	-0,9 - 0 bar
Pressure-/Vacuum Range	-0,9...+1 bar
Overpressure Safety	25 bar
Vacuum Safety	-1 bar
Enclosure Material	Aluminium
Wetted Parts Material	Aluminium, Brass, NBR (Gasket)
Permissible Media Temperature	-10...+80°C
Permissible Ambient Temperature	-20...+80°C
Temperature Deviation	approx. 1% per 20°C
Switching Contact	1 micro switch (SPDT)
Switching Accuracy	≤ 1,0% FS
Repeatability	≤ 1,0% FS
Switching Differential (Hysteresis)	≤ 1,0% FS
Process Connection (alternatively)	sub-base mounting; sub-base mounting CNOMO; 1/4" female ISO 228 thread;
Electrical Connection (alternatively)	Stecker EN175 301-803-A (ISO 4400); Stecker M12x1
Weight	approx. 160 g
Protection	IP65 (IP67 mit M12 Stecker)
Schock Resistance (XYZ-Direction)	15 g (IEC 60068-2-64)
Vibration Resistance (XYZ-Direction)	10 g (60 - 500 Hz) (IEC 60068-2-6)

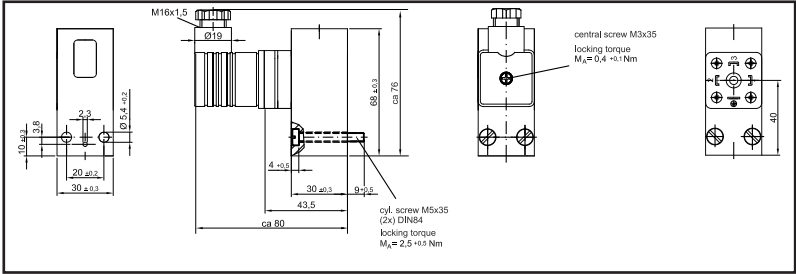
sub-base mounting and plug ISO 4400



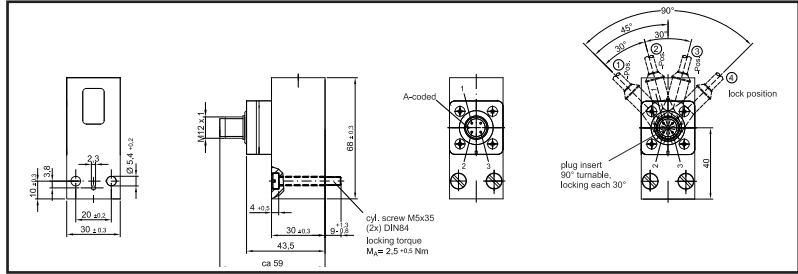
sub-base mounting and plug M12x1



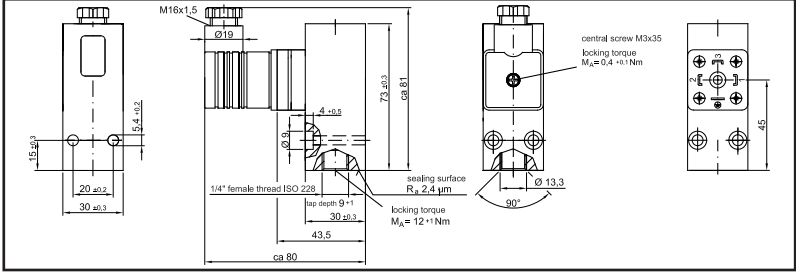
sub-base mounting CNOMO and plug ISO 4400



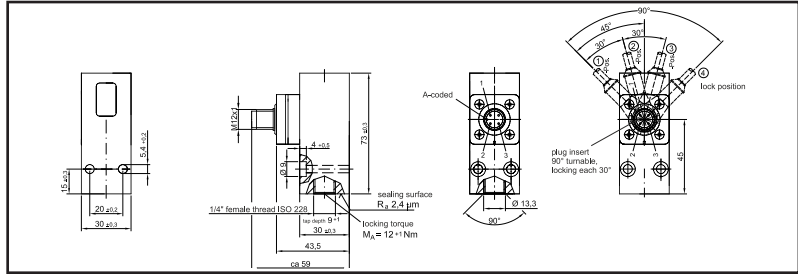
sub-base mounting CNOMO and plug M12x1



1/4" female ISO 228 thread mounting and plug ISO 4400

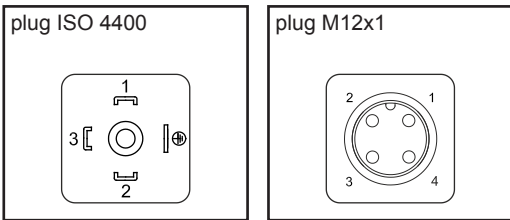


1/4" female ISO 228 thread mounting and plug M12x1



Electrical Connection

shown in zero pressure condition



	plug ISO4400	plug M12x1
micro switch		
+UB	1	1
normally closed	2	2
normally open	3	4
GND	4	---

Switching Capacity

max. steady current I max [A] on inductive load

	U [V]	30V	48V	60V	125V	250V
version with plug ISO4400	I [A] AC	3	3	3	3	3
	I [A] DC	2	0,55	0,4	0,15	---
version with plug M12x1	I [A] AC	3	---	---	---	---
	I [A] DC	2	---	---	---	---

reference switch cycle: 30/min
reference temperature: +30°C
AC = cos phi ca. 0,7°
DC = L/R ca 10ms

Switching Capacity

max. steady current I max [A] on ohmic load

	U [V]	30V	48V	60V	125V	250V
version with plug ISO4400	I [A] AC	5	3	5	5	5
	I [A] DC	3	1,2	0,8	0,4	---
version with plug M12x1	I [A] AC	4	---	---	---	---
	I [A] DC	3	---	---	---	---

reference switch cycle: 30/min
reference temperature: +30°C

Set point adjustment

