A PERFECT ALLIANCE.

ODU MEDI-SNAP®

圆柱形插拔自锁连接器
插拔自锁锁定和易分离锁定

塑料外壳系列
金属外壳系列

ODU MEDI-SNAP®

ODU MINI-SNAP® F　ODU MINI-SNAP® L/K/B　ODU MINI-SNAP® PC　ODU MINI-MED®　ODU AMC®

www.odu-china.com

ODU MEDI-SNAP®

特性

- 比同类金属产品轻75%
- 安装与维护要求低
- 节省空间的产品设计
- 高耐化学腐蚀性
- 可充分消毒
- 通过插拔自锁机制可快速插拔
- 通过易分离功能可快速断开

应用

- 医疗
- 工业
- 数字测量和测试

样本显示的所有连接器均符合IEC 61984:2008标准(VDE 0627:2009-11);无分断能力(COC).

ODU MEDI-SNAP®通过 UL认证，文件号E110586.

发布：2020-07

目录表

A PERFECT ALLIANCE

创造连接、建立互联、共进未来：无论是两个技术元件的集成，还是人与人之间为了共同目标而协作 —— 所有的关键是立志于实现卓越的目标。这是驱使我们不断进步的动力。**完美互联，永远激励着欧度实现承诺。**

欧度集团概览

- 近80年的连接器技术生产和制造经验
- 超过2,300多名员工
- 11个销售公司：中国，丹麦，法国，德国，日本，意大利，韩国，罗马尼亚，瑞典，英国和美国
- 5个生产基地和物流仓储
- 完整的连接器技术：设计开发，模具和专用机械设计制造，注塑，冲压，车制，电镀，自动装配及线缆组件加工。

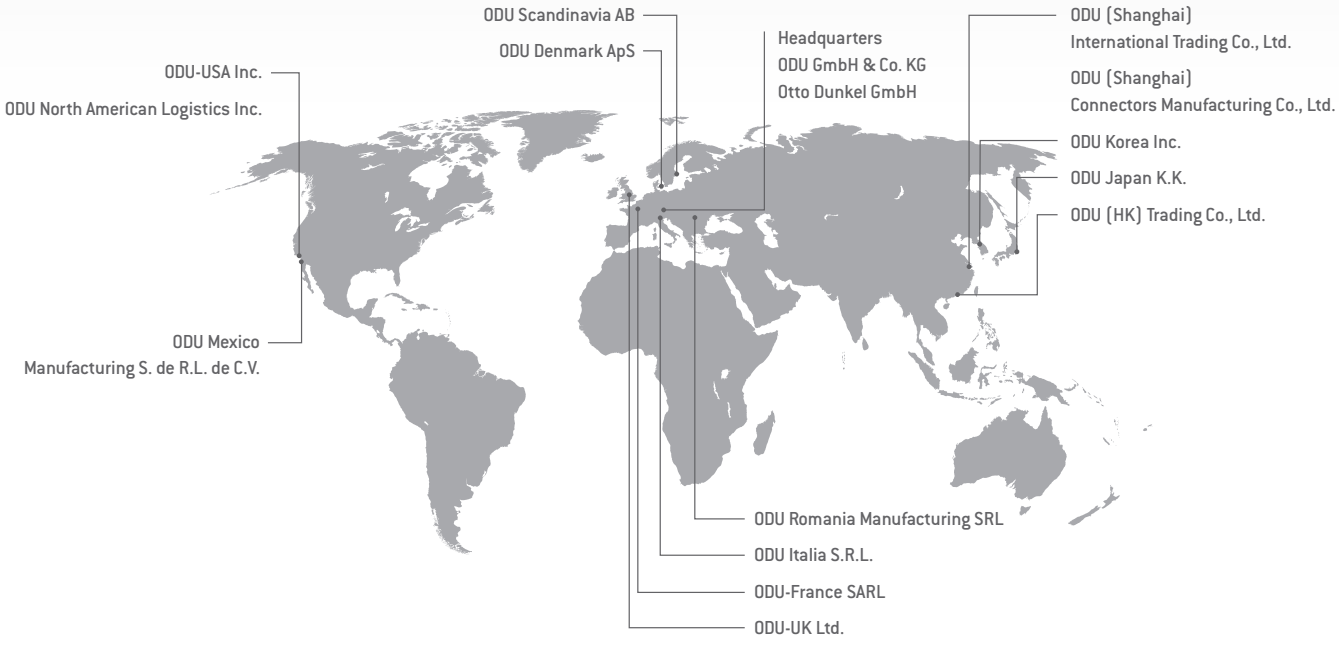
数据截止2020年2月

质量认证

- ISO 9001
- IATF 16949
- ISO 13485
- ISO 14001
- ISO 50001
- UL，CSA，VG和DVA认证
- 线缆组件UL认证

需要完整认证清单请登录公司网站

欧度全球分布


ODU Scandinavia AB
ODU Denmark ApS
Headquarters
ODU GmbH & Co. KG
Otto Dunkel GmbH
ODU (Shanghai)
International Trading Co., Ltd.
ODU (Shanghai)
Connectors Manufacturing Co., Ltd.
ODU Korea Inc.
ODU Japan K.K.
ODU (HK) Trading Co., Ltd.
ODU-USA Inc.
ODU North American Logistics Inc.
ODU Mexico
Manufacturing S. de R.L. de C.V.
ODU Romania Manufacturing SRL
ODU Italia S.R.L.
ODU-France SARL
ODU-UK Ltd.

可满足
任何要求的连接

单芯插针

- 多种多样的针孔端子技术
- 卓越的可靠性、使用寿命和持久性
- 可负载电流达到2,400 A或更高
- 坚固且通用型的针孔端子系统
- 用于客户定制大批量解决方案的冲压技术
- 极高的抗振性
- 低且稳定的接触电阻

圆柱型插拔自锁连接器

- 圆柱型连接器：坚固的金属外壳或塑料外壳
- 端接方式：焊接、压接和PCB接
- 可提供不同的锁定机制：插拔自锁，螺纹锁定(可选)，或者可快速分离的易分离
- 2-55芯
- 防护等级IP 50到IP 69
- 可承受高压灭菌的医疗应用
- 混合插针用于各种组合传输
- 线缆组件 ——完整解决方案

线缆组件

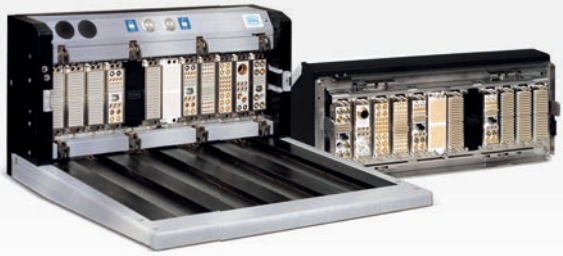
- 拥有多年一站式经验，实现整体方案
- 最先进的生产设备，具备100%终端测试
- 欧度所有产品均可以线缆组装
- 硅胶包胶注塑，热熔和高压注塑工艺
- 客户定制标签和线缆打印
- 广泛的标准线缆和配件可选
- 打样，小批次和大批量生产
- 快速样品制作

客户定制连接器解决方案

- 针对较高技术需求及特殊应用的插针、连接器和组件解决方案
- 专业、一流的连接器经验
- 高水准的制造体系 – 集合了所有能力和关键技术
- 基于合作，可提供专业解决方案
- 快速研发和生产

欧度混装模块连接器

- 适用于特殊的混合型接口
- 可手动对接或自动对接
- 灵活的模块组合和高密度安装
- 可传输信号、电源、大电流、高电压、高频信号(同轴)、高速数据、光纤和其他媒介如：气体或液体
- 多种锁定方式
- 插拔次数可按要求从10,000到100,000次(最高达100万次)
- 线缆组件——完整解决方案



大规模互连解决方案

- 用于测试印刷电路板(PCBs)和电子组装单元
- 创新的插拔操作：机电式按钮或遥控
- 8个张紧点可防止框架变形
- 采用ODU-MAC®模块，灵活性非常高
- 带公差补偿的适配器框架(ITA)
- 线缆组件——完整解决方案

重载连接器

- 高耐用性，可用于极端恶劣环境
- 高抗振性
- 可负载电流达400A(更高电流要求可定制)

PCB连接器

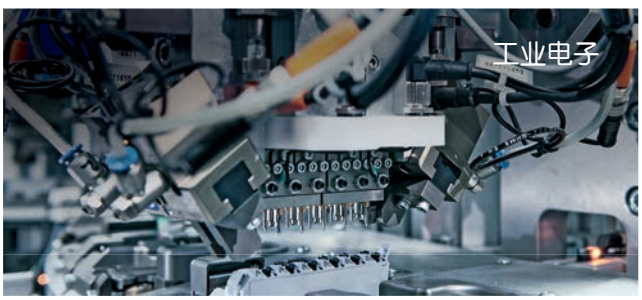
- 应用设计灵活
- 寿命长，品质出色
- 线缆组件——完整解决方案

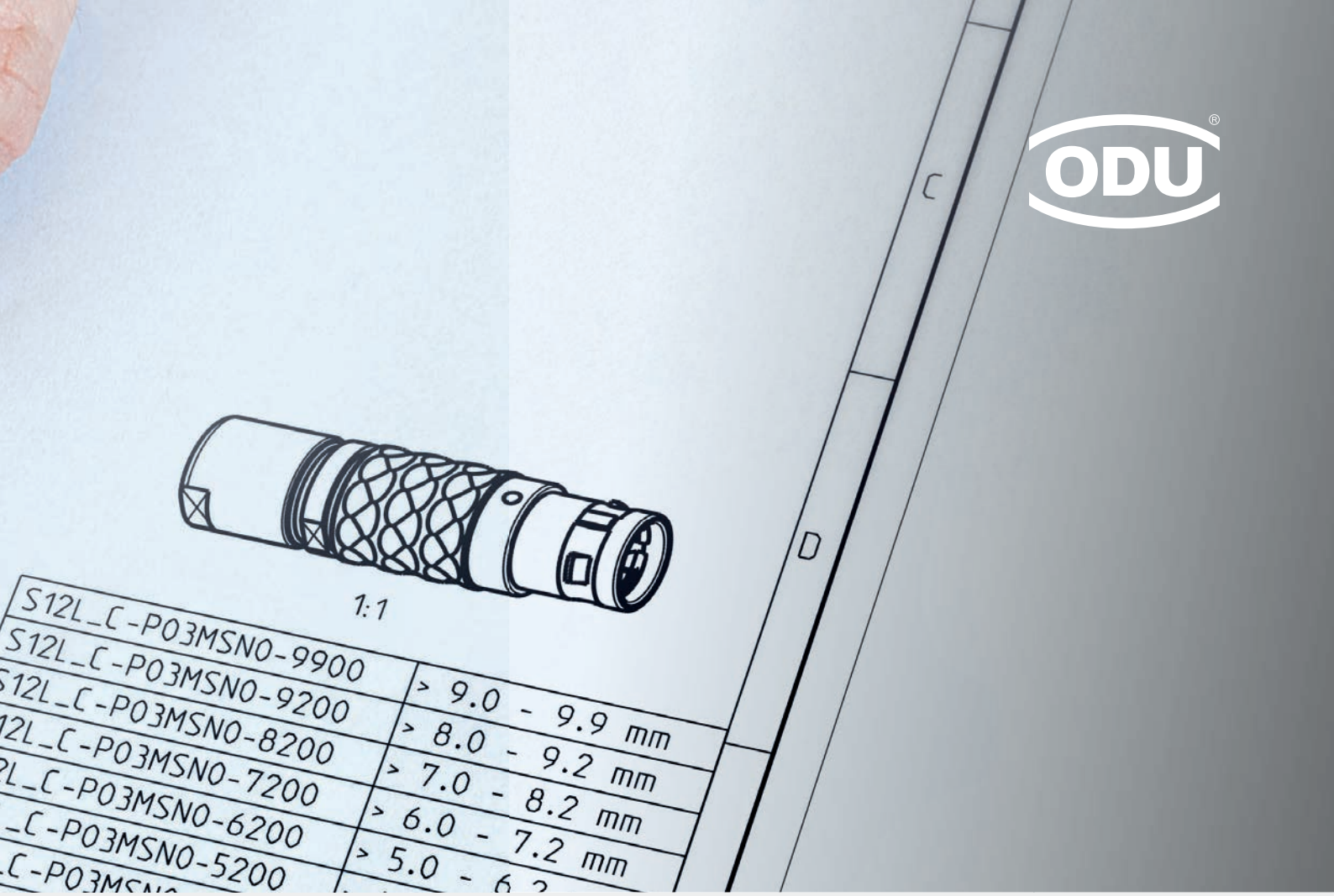
我们的专业知识助力您的成功

客户可信任于欧度所提供的一流技术和高性能连接器。我们的产品和技术助您成功。

除了用户定制要求的最佳品质、可靠性和最大的灵活性，我们的产品在**力学、可靠性、安全性、精度、效率和可持续性上建立标准。**

响应高端市场需求的高性能连接器技术





不止于连接

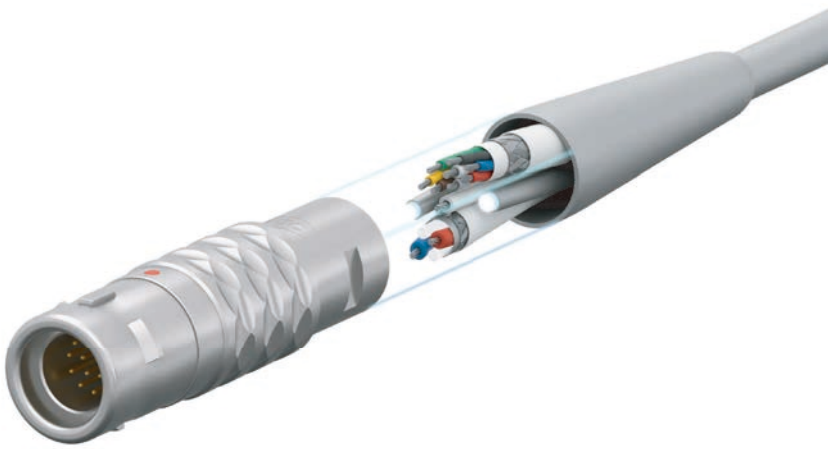
针孔，连接器和线缆组件方案满足最严格的市场要求——欧度的连接器方案和增值服务专注于满足客户需求。

- 在设计，功能，成本和兼容方面，可准确满足特殊应用需求
- 源于标准产品的定制连接器方案
- 一对一的就近服务原则和平等友好的交流
- 快速研发和生产

定制解决方案

全新的技术需求需要我们全新思维的专家。欧度专注于客户要求的专业知识。

每次研发任务中，我们不仅确保方案可行，更主动地同客户一起参与研发过程。以保证最终的效果。



ODU MEDI-SNAP®

产品信息

欧度连接器系列概览

	定位	尺寸	定位数量	插头外径mm	最大电缆直径mm	最大插针数	焊接	压接	PCB接	配合状态防护等级(根据 IEC 60529:2013)	未配合状态防护等级(根据 IEC 60529:2013)	外壳材料	页码
ODU MEDI-SNAP® 塑料系列													
	定位块和定位槽	1	6	13.7	6.5	14	•	•	•	高达 IP67	高达 IP68	PSU 灰, 黑 PEI 黑	24
	定位块和定位槽	2	3	18.5	9.2	26	•		•	高达 IP64	IP50	PSU 灰	62
ODU MEDI-SNAP® 金属系列													
	定位块和定位槽	1	3	14	6.5	14	•	•	•	高达 IP64	高达 IP68	金属 (黄铜)	88

更多欧度圆型插拔自锁连接器产品

ODU MINI-SNAP® L / K / B

- 定位块和定位槽定位
- 2–40芯
- 6种尺寸
- IP 50和IP 68
- 端接方式可焊接，压接和 PCB接

ODU MINI-SNAP® PC

- 半圆屏蔽片定位
- 2–27芯
- 重量轻
- IP 67
- 3种尺寸
- 塑料外壳

ODU MINI-SNAP® F

- 半圆屏蔽片定位
- 2–27芯 / 混合插针
- 5种尺寸
- IP50和IP68，直径可相同
- 端接方式可焊接，压接和PCB接

ODU MINI-SNAP® S

- 绝缘体定位
- 2–10芯 / 混合插针
- 3种尺寸
- IP50和IP68，直径可相同
- 端接方式可焊接，压接和PCB接

ODU AMC®

- 插拔自锁和易分离
- 3–55芯
- 6种尺寸
- 防水 – IP68
- 易清洁和高密度系列
- 符合MIL测试标准
- 重量轻(铝合金外壳)

塑料和金属外壳的ODU MEDI-SNAP®圆柱型插拔自锁连器

ODU MEDI-SNAP®结合了独有的定位选择和超过2,000次插拔次数。这款高效的塑料连接器既有配备人性化插拔自锁锁定特性的款式又有尾部注塑具有易分离功能的款式。该系列还有高达1,000 V AC / 16 A的高压解决方案可避免热插拔。

它节省空间的产品设计，即使在最小的安装空间也可使用并确保达到最高性能。此外，由于它是塑料外壳，这种连接器的重量比同类金属产品轻75%。多样性使得ODU MEDI-SNAP®完美满足您在医疗，工业和测量测试方面的需求。

产品符合IEC 60601-1:2012 (VDE 0750-1:2013-12)标准的特殊需求。它详细定义了医疗设备及其组件应用中对患者和操作人员需要防止触电。不同的保护措施(MOP：保护方法)的详细解释请参见第25页和63页

多种配置方案

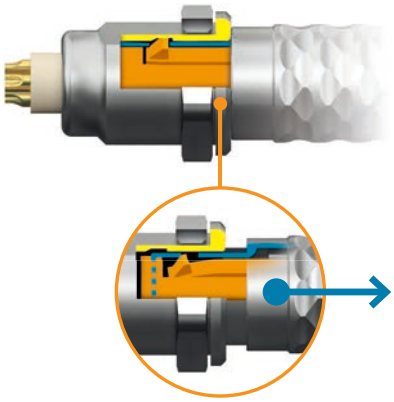
8种颜色定位，6种机械定位，2种尺寸，3种端接方式和多种插针类型可选

插拔自锁锁定的原理

插拔自锁连接器的锁定机制非常方便使用。它是**自保护**的-这表示可以防止因拉动电缆而意外释放。当插头插入插座时，插头上的锁定弹片嵌入插座的凹槽中，并在连接器和插座之间形成可靠的连接。

因此，连接器处于配合装态，拔插头的尾部或电缆时，由于锁定弹片卡在凹槽里，插头和插座不会脱离。向后拔动插头的外壳可轻易断开连接。

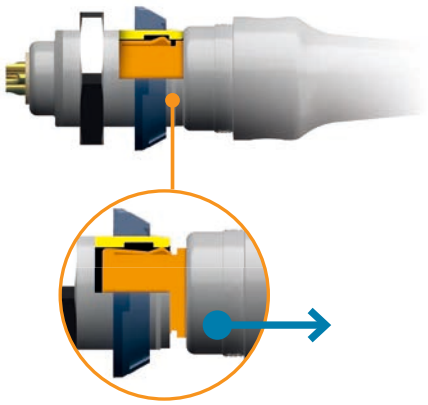
ODU MEDI-SNAP®插拔自锁连接器有两种标准尺寸可满足外径13.7 mm到18.5 mm。



易分离功能锁定的原理

高效的易分离功能是为了实现连接器的瞬间插拔而设计的。此外，它还具有**紧急释放**功能，拉动线缆即可断开连接。在配合过程中，连接器上的卡扣锁定在插座的相应凹槽中，并在连接器和插座之间形成可靠的连接。可以承受一定限度的拉扯。当施以略大的拉力时，卡扣松脱从而断开连接。

ODU MEDI-SNAP®易分离连接器有2种标准尺寸，外径从13.4 mm到18mm。



重要特性一览

拥有多种可选版本

- 2种尺寸的塑料外壳
- 1种尺寸的金属外壳
- 外径尺寸13.4mm到18.5mm
- 2至26芯
- 配合状态达IP50，IP64和IP67未配合状态达IP68
- 可提供尾部注塑的组件解决方案

应用和材料

ODU MEDI-SNAP®外壳材料可选塑料(PSU灰/黑和PEI黑)或黄铜。也可定制特殊的材料外壳如PSU白或PEI灰。

ODU MEDI-SNAP®适用于医疗技术，工业电子，和数字测量与测试。

根据大部分应用，ODU MEDI-SNAP®的工作温度介于-50℃到+120℃，甚至可达到+134℃以满足高温高压消毒连接器的要求。(见123页)

车制式插针

车制式插针的外径从0.5mm到2mm，并可选择以下端接类型：
焊接，压接和PCB接

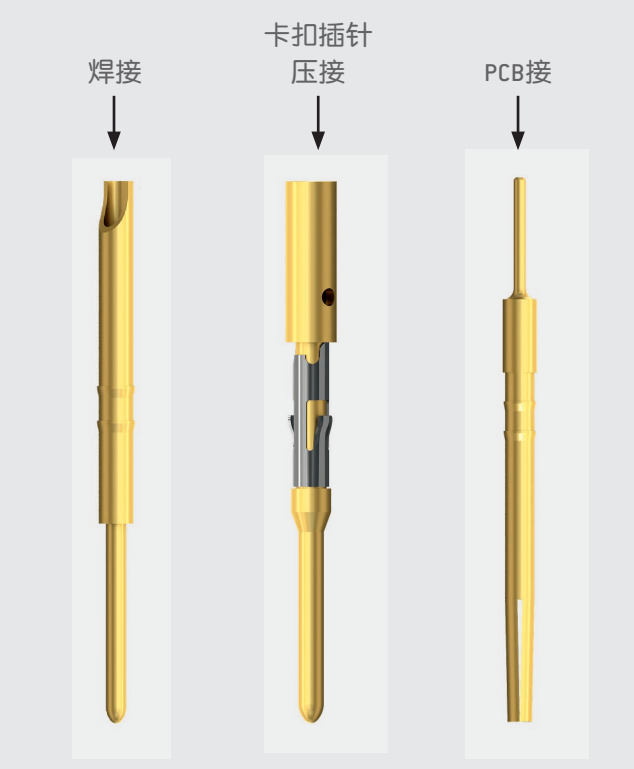
插拔次数	> 5.000
材料	黄铜
镀层	金

端接方式

	绝缘材料 PEEK	插针材料 黄铜
压接[1]	•	•
焊接	•	•
PCB接(PCB板上)	•	•

[1] 直径0.7mm与0.9mm的压接卡扣插针可选

标准插针



外径，压接类型和额定电流信息见之后插图

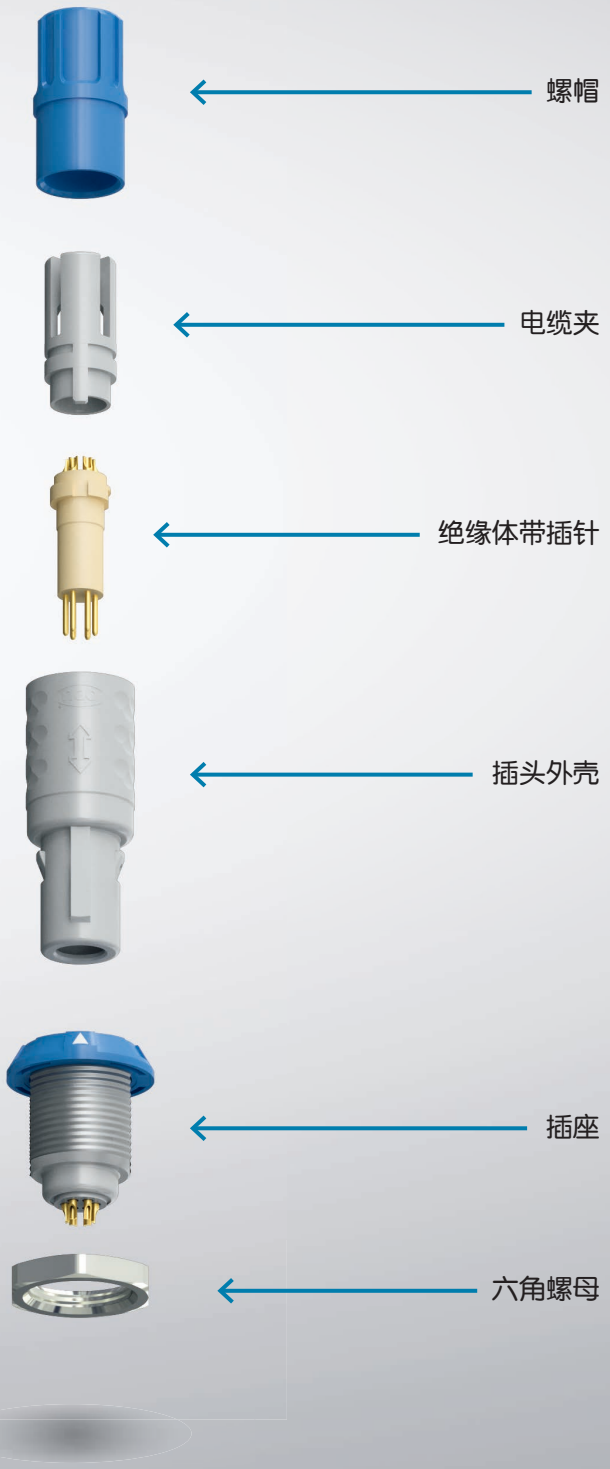
ODU MEDI-SNAP®

配置指南

正确配置 – 组装步骤

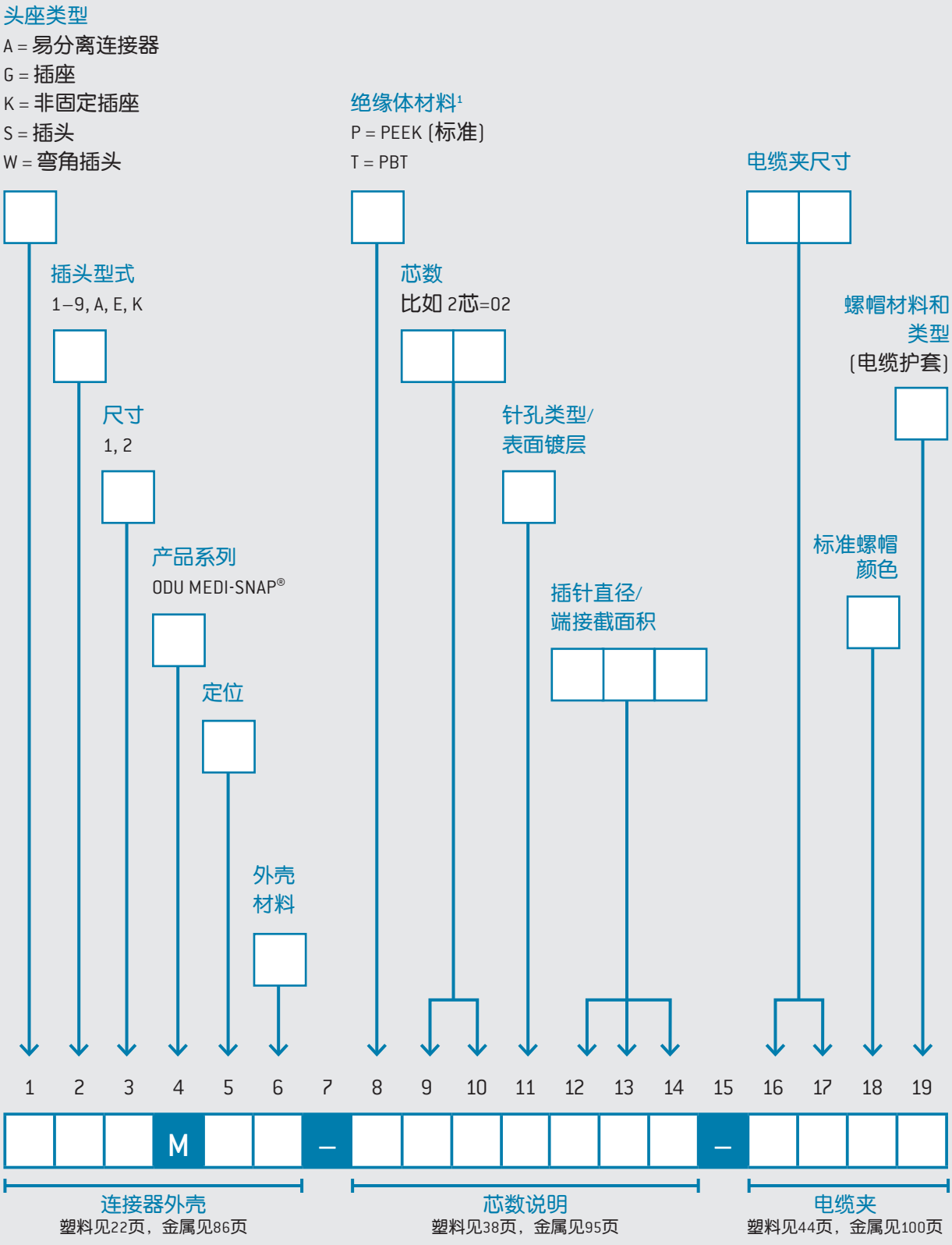
逐步达到完美连接

欧度为您提供高品质连接器和装配线缆的完整服务。一站式提供所有连接器及防水灌胶组件。



配置您需要的连接器：
如何根据编号进行配置

此图为您展示欧度产品编号组成。编号第一段配置连接器插头及外壳(如：型号及尺寸)，编号第二段配置绝缘体及插针，编号第三段配置电缆附件。



[1] 可定制其它绝缘材料

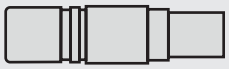
正确配置 – 组装步骤

组装完美产品，您只需几步。以下步骤通过一个简单示例向您演示如何根据欧度产品编号配置组装您的个性化产品。

连接器插头类型1/尺寸1/ODU MEDI-SNAP系列/定位0° /插头外壳塑料，灰/绝缘体，PEEK/14芯/插针(焊接)Au/端接截面积AWG 28/电缆外径5.3-6.5mm/蓝色标准螺帽

步骤1: 产品系列(位置4)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			M			–								–				



ODU MEDI-SNAP®

步骤2: 插头型式(位置1, 2, 19)

见26页

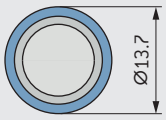
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1		M			–								–				0

头座型式S1
标准螺帽

步骤3: 尺寸(位置3)

见22页

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M			–								–				0

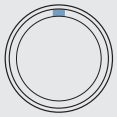


尺寸1

步骤4: 定位(位置5)

见37页

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0		–								–				0



定位0°

步骤5: 外壳材料(位置6)

见37页

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–								–				0

PSU
灰

塑料，灰

步骤6: 绝缘体材料(位置8)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P							–				0

PEEK

步骤7: 芯数(位置9和10)

见38页

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4					–				0

14芯

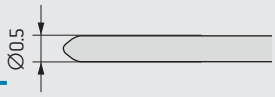
步骤8: 针孔类型/表面镀层(位置11)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M				–				0

焊接(插针)

步骤9: 插针直径(位置12)

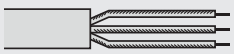
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M	C			–				0



直径0.5 MM

步骤10: 端接截面积(位置13和14)

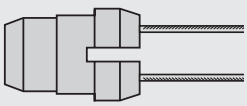
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M	C	C	0	–				0



AWG 28

步骤11: 电缆夹尺寸(位置16和17)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M	C	C	0	–	6	5		0

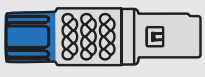


最小电缆直径5.3 MM
最大电缆直径6.5 MM

步骤12: 标准螺帽颜色(位置18)

见45页

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M	C	C	0	–	6	5	6	0



蓝色

ODU MEDI-SNAP®

ODU MEDI-SNAP®
塑料外壳1号尺寸

ODU MEDI-SNAP®总览
塑料外壳1号尺寸

ODU MEDI-SNAP®塑料外壳1号尺寸通过定位块和定位槽定位。这款圆型连接器有多种配置方案：多种插头，插座和非固定插座型式，以及多种端接类型，插针芯数和颜色定位。

- 定位块和定位槽定位
- 7种颜色定位
- 6种机械定位
- 2-14芯
- 3种端接类型
- 压接，焊接和PCB接
- 多种插头，插座和非固定插座型式可选
- 配合状态防护等级可达IP50/IP64和IP67
- 插拔次数>5,000

直插头 – 插拔自锁 P. 26

2,000 插拔次数

IP50

S 1

S 2

IP64

S 4

弯角插头 – 插拔自锁 P. 28

2,000 插拔次数

IP50

W 1

W 2

全新！
易分离插头
见52页

易分离插头 P. 29

5,000 插拔次数

IP67

A 5

装配说明请访问我们的网站：www.odu-connectors.com/downloads/assembly-instructions

非固定插座 P. 30

5,000 插拔次数

IEC 60601-1: 2 MOOP[1] and 1 MOPP[1]
IP50

K 1

K 2

插座 P. 31

5,000 插拔次数

IEC 60601-1: 2 MOOP[1] and 1 MOPP[1]
IP50

G 1

G 5

G 6
(可定制)

G 8

插座 P. 33

5,000 插拔次数

IEC 60601-1: 2 MOOP[1] and 2 MOPP[1]
IP50

G 9

IEC 60601-1: 2 MOOP[1] and 2 MOPP[1]
IP64 / IP67

G 4

G E

IEC 60601-1: 2 MOOP[1] and 2 MOPP[1]
IP64 / IP67 / IP68[2]

G A

可抛弃型插座 P. 36

5,000 插拔次数

IEC 60601-1: 1 MOOP[1] and 0 MOPP[1]
IP50

G 2

IEC 60601-1:2012

操作用户保护(MOOP) / 患者保护(MOPP)

本表适用于医疗器械工作电压最高250 V AC (污染等级2)。
有关连接器的工作电压，请参阅芯数说明。

MOOP / MOPP	到测试端的电气间隙 mm	到测试端的爬电距离 mm	测试电压 V AC
1 MOOP	≥ 2	≥ 2.5	1,500
2 MOOP	≥ 4	≥ 5	3,000
1 MOPP	≥ 2.5	≥ 4	1,500
2 MOPP	≥ 5	≥ 8	4,000

该信息涉及第24页提到的所有配合状态下的插头。

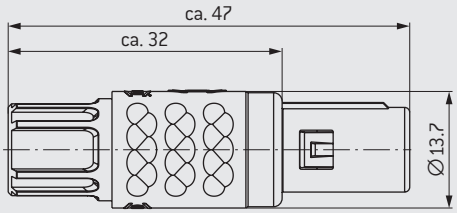
[1]根据IEC 60601-1:2012 (VDE 0750-1:2013-12) [2] IP68在未配合状态

直插头

插拔自锁插头

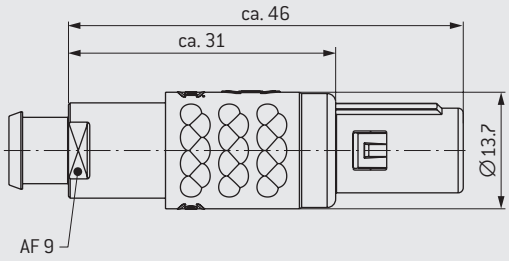
S 1 | 0 | **型式: 1** | IP50

标准螺帽



S 2 | S | **型式: 2** | IP50

可装护套[2]螺帽[1]



技术参数

- 芯数说明见38页
- 防护等级说明(见114页)
- S1颜色定位

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–				

尺寸(1)

[1]订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色
[2]护套需要单独订购(见50页)

直插头

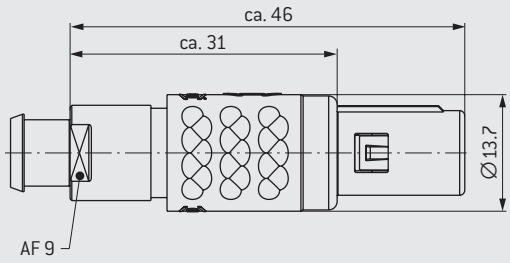
插拔自锁插头

S 4 S

型式: 4

IP64

可装护套[2]螺帽[1]



技术参数

- 芯数说明见38页
- 防护等级说明(见114页)
- 与G4/GE/GA插座组合可达到IP64防护等级(配合状态)

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–				

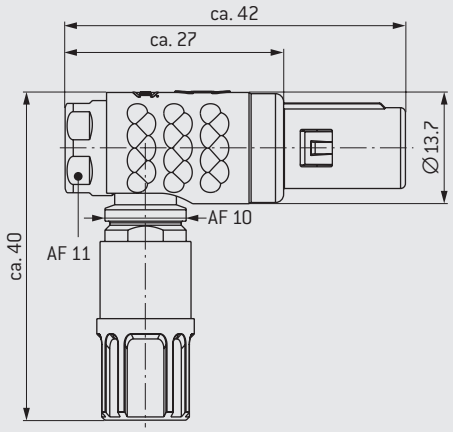
[1]订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色
[2]护套需要单独订购(见50页)

弯角插头

插拔自锁插头

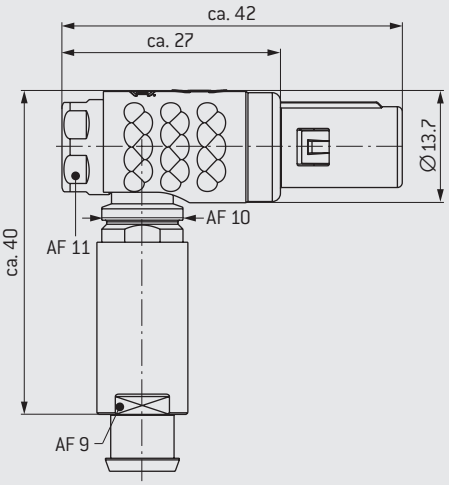
W 1 0 **型式: 1** IP50

标准螺帽



W 2 S **型式: 2** IP50

可装护套[2]螺帽[1]



技术参数

- 芯数说明见38页
- 防护等级说明(见114页)
- W1颜色定位

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–				

[1]订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色
[2]护套需要单独订购(见50页)

易分离连接器

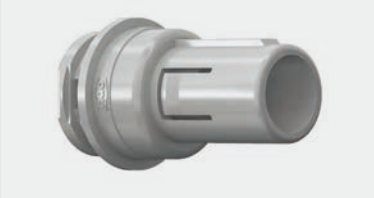
易分离插头

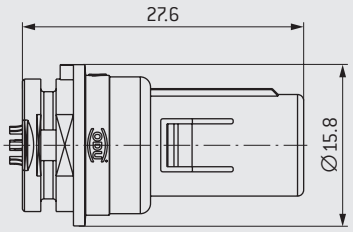
A 5

型式: 5

可抛弃插头

IP67





技术参数

- 芯数说明(见57页)
- 防护等级说明(见114页)
- 直插头达IP50(见59页)
- 尾部注塑后，与G4/GE/GA插座配合可达到IP67防护等级(见59页)
- 直角型在组装和灌胶密封条件下与G4/GE/GA插座配合时可达IP67(见58页)
- 外壳和绝缘体都是塑料[1]
- 可提供PSU产品
- 不可与金属外壳配套使用
- 适用所有ODU MEDI-SNAP®塑料插座和非固定插座
- 可提供焊接插针

全新!
章节 **易分离插头**
见52页

尺寸(1)

1	2	3	4	5	6	7	8[1]	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	0							–	0	0	0	0

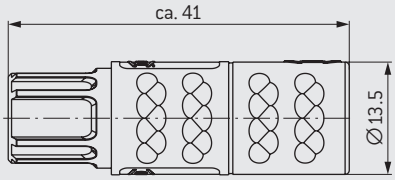
[1]此种类型的连接器外壳和绝缘体材料均为PSU

非固定插座

适用于线到线连接

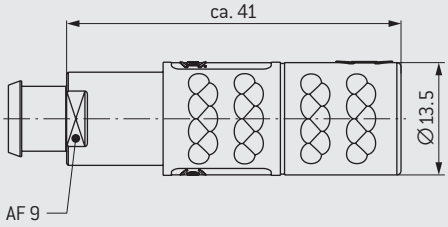
K 1 0 **型式: 1** IP50

标准螺帽



K 2 S **型式: 2** IP50

可装护套[2]螺帽[1]



技术参数

- 芯数说明见38页
- 防护等级说明(见114页)
- K1颜色定位

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–				

[1]订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色
[2]护套需要单独订购(见50页)

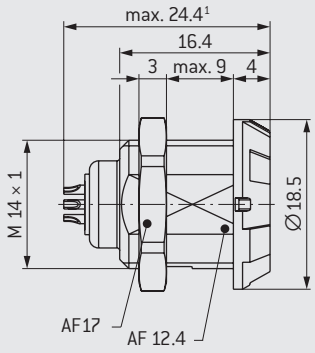
插座

G 1

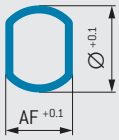
型式: 1

机箱内固定

IP50



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

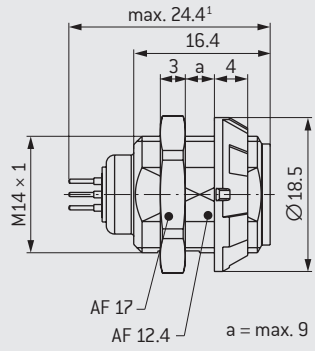
- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 颜色定位

G 5

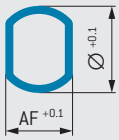
型式: 5

螺纹插座，机箱内外均可固定：面板突出部分高度可调节。

IP50



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 颜色定位
- 可定制弯角PCB插针(见42页)

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–		0		0

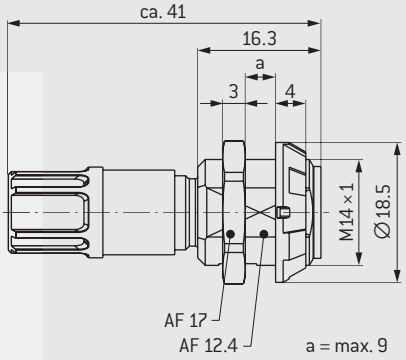
¹ 由针芯决定

插座

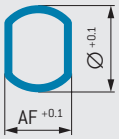
G 6

型式: 6 可定制 IP50

带螺帽、电缆夹，机箱内外均可固定



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

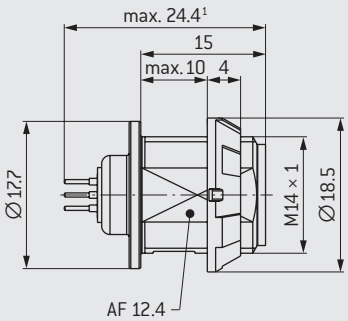
技术参数

- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 颜色定位

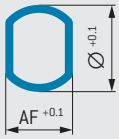
G 8

型式: 8 IP50

机箱外固定



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 颜色定位
- 可定制弯角PCB插针(见42页)

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–				0

[1] 由针芯决定

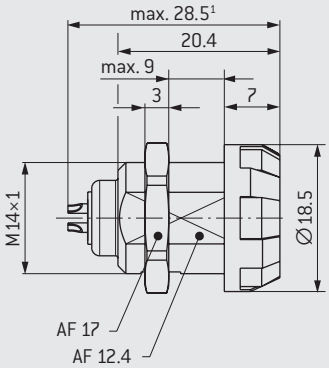
插座

G 9

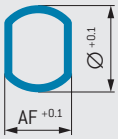
型式: 9

机箱内固定

IP50



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 插座采用PSU材质，有灰色和黑色可选，其它颜色可定制

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–	0	0	0	0

[1] 由针芯决定

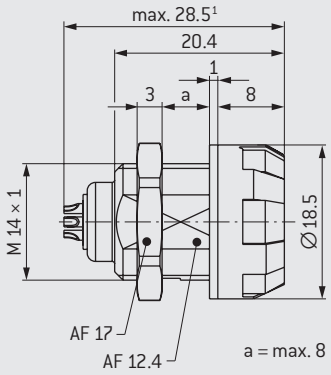
插座

G 4

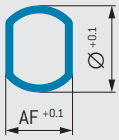
型式: 4

机箱内固定

IP64/67



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 与插头S4配合可达IP64防护等级(见27页)
- 与灌胶后的直角型插头A5配合条件下可达IP67(见55页)
- 与尾部包胶注塑插头A5配合条件下可达IP67(见59页)
- 防止转动特性
- 颜色定位

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–		0		0

[1] 由针芯决定

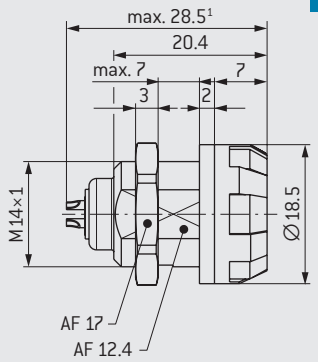
插座

G E

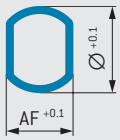
型式: E

机箱内固定

IP64/67



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

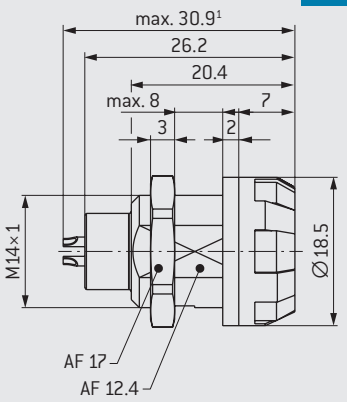
- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 与插头S4配合可达IP64防护等级(见27页)
- 与灌胶后的直角型插头A5配合条件下可达IP67(见55页)
- 与尾部包胶注塑插头A5配合条件下可达IP67(见59页)
- 防止转动特性
- 插座采用PSU材质，有灰色和黑色可选，其它颜色可定制

G A

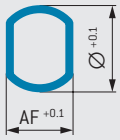
型式: A

机箱内固定

IP64/67/68²



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见38页)
- 防护等级说明(见114页)
- 与设备装配后可达IP68
- 与插头S4组合可达IP64防护等级(见27页)
- 与灌胶后的直角型插头A5配合条件下可达IP67(见55页)
- 与尾部包胶注塑型易分离插头A5插头配合条件下可达IP67(见79页)
- 防止转动特性
- 插座采用PSU材质，有灰色和黑色可选，其它颜色可定制

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–	0	0	0	0

¹ 由针芯决定 ² IP68未配合状态

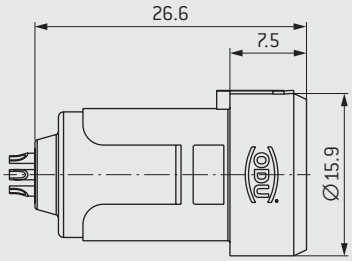
插座

G 2

型式: 2

IP50

可抛弃型插座



面板开孔图

Ø: 13.1 mm

技术参数

- 芯数说明见38页
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50 (最小面板厚度需达4 mm)
- 可提供PSU插座
- 外壳和绝缘体为一体注塑成型[1]
- 防止转动特性
- 卡扣组装

G2插座保护帽，IP50

保护帽介绍见49页

尺寸(1)

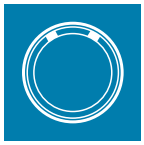
1	2	3	4	5	6	7	8[1]	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	0							–	0	0	0	0

[1] 此种类型的连接器外壳和绝缘体材料均为PSU

定位

	角度	插座前视图
0	0°	
A	40°	
C	60°	
E	80°	
H	170°	
J	205°	

外壳材料



		外壳材料[1]	生物兼容性材料[3]
7	标准	塑料, 灰色 (PSU)	●
8	标准	塑料, 黑色 (PSU)	●
S	标准	塑料, 黑色 (PEI), 可高温高压消毒[2]	不提供
3	可定制	塑料, 白色 (PSU)	不提供
G	可定制	塑料, 灰色 (PEI), 可高温高压消毒[2]	●

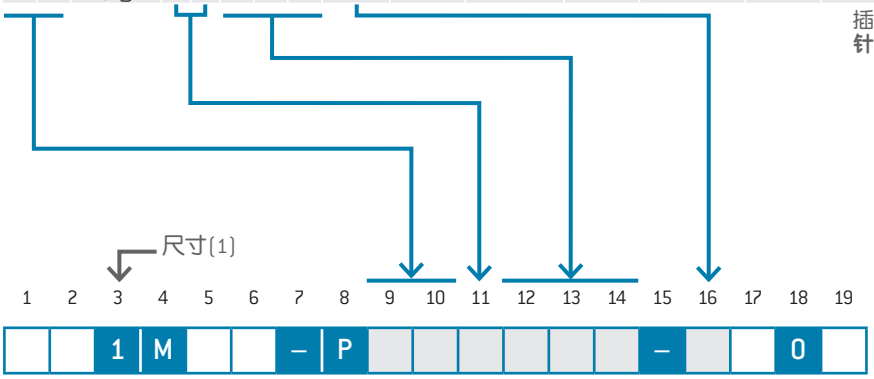
[1] 型式A5和G2仅提供PSU外壳材质
[2] 有关“高压灭菌”的更多详细信息请参见第123页
[3] 生物兼容性符合DIN EN ISO 10993:
DIN EN ISO 10993-5:2009-10: 体外细胞毒性试验。测试确定材料中的有毒成分是否会导致细胞损伤。
DIN EN ISO 10993-10:2014-10: 刺激性和皮肤致敏试验。皮肤刺激性和皮肤致敏性试验旨在确定医疗产品的刺激性和致敏性。
DIN EN ISO 10993-11:2018-09: 全身毒性试验。
DIN EN ISO 10993-18:2009-08: 风险管理过程中医疗器械材料的化学特性。

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–								–				

芯数说明

芯数		针孔类型			插针直径/端接截面积			插针尾端形状	插针直径	单芯额定电流[1]	额定电流	电气间隙和爬电距离	测试电压[2]	测试电压[6,8]	额定电压[6,7]	端接直径	端接截面积		端接面视图	
		端接方式	插孔	插针															针	孔
									mm	A	A	mm	SAE kV DC	IEC kV RMS	IEC V RMS	mm	AWG	mm²		
0	2	焊接	L	M	P	N	0	0	1.3	15	15	1	1.6	0.67	38	1.4	18	1		
					P	H	0									1.1	20	0.5		
		PCB直[4]	Q		P	0	0			12	12	1.3	1.9	0.67	48	0.7	–	–		
		PCB弯[4]						A								0.8	–	–		
0	3[5]	焊接	L	M	P	N	9	0	1.3	15	15	0.9	1.6	0.67	37	1.4	18	1		
					P	H	9									1.1	20	0.5		
		PCB直[4]	Q		P	0	9			12	12	1.2	1.9	0.67	48	0.7	–	–		
		PCB弯[4]						A								0.8	–	–		
0	4	焊接	L	M	J	H	0	0	0.9	10	10	0.9	1.6	0.67	37	1.1	20	0.5		
					J	G	0			7.5	7.5	1.2	1.9	0.67	48	0.85	22	0.38		
		压接[3]	N	P	J	H	0			10	10	0.9	1.6	0.67	37	–	20–24	0.5–0.25		
					J	G	0									–	22–26	0.38–0.15		
		PCB直[4]	Q		J	0	0			7.5	7.5	1.2	1.9	0.67	48	0.7	–	–		
		PCB弯[4]						A								0.6	–	–		
0	5	焊接	L	M	J	H	0	0	0.9	10	7.5	0.5	1.35	0.67	25	1.1	20	0.5		
					J	G	0			7.5	5.6	0.8	1.6	0.67	35	0.85	22	0.38		
		压接[3]	N	P	J	H	0			10	7.5	0.5	1.35	0.67	25	–	20–24	0.5–0.25		
					J	G	0									–	22–26	0.38–0.15		
		PCB直[4]	Q		J	0	0			7.5	5.6	0.8	1.6	0.67	35	0.7	–	–		
		PCB弯[4]						A								0.6	–	–		
0	6	焊接	L	M	F	G	0	0	0.7	7.5	5.6	0.65	1.35	0.67	33	0.85	22	0.38		
					F	D	0			6	4.5	0.85	1.6	0.67	36	0.65	26	0.15		
		压接[3]	N	P	F	G	0			7.5	5.6	0.65	1.35	0.67	33	–	22–26	0.38–0.15		
		PCB直[4]	Q		F	0	0			6	4.5	0.85	1.6	0.67	36	0.5	–	–		
		PCB弯[4]						A								0.6	–	–		
0	7	焊接	L	M	F	G	0	0	0.7	7.5	4.9	0.65	1.35	0.67	33	0.85	22	0.38		
					F	D	0			6	3.9	0.85	1.6	0.67	36	0.65	26	0.15		
		压接[3]	N	P	F	G	0			7.5	4.9	0.65	1.35	0.67	33	–	22–26	0.38–0.15		
		PCB直[4]	Q		F	0	0			6	3.9	0.85	1.6	0.67	36	0.5	–	–		
		PCB弯[4]						A								0.6	–	–		
0	8	焊接	L	M	F	G	0	0	0.7	7.5	4.9	0.4	1.2	0.67	10	0.85	22	0.38		
					F	D	0			6	3.9	0.6	1.6	0.67	32	0.65	26	0.15		
		压接[3]	N	P	F	G	0			7.5	4.9	0.4	1.2	0.67	10	–	22–26	0.38–0.15		
		PCB直[4]	Q		F	0	0			6	3.9	0.6	1.6	0.67	32	0.5	–	–		
		PCB弯[4]						A								0.6	–	–		
0	9	焊接	L	M	C	D	0	0	0.5	6	3.9	0.45	1.2	0.67	16	0.65	26	0.15		
					C	C	0									0.45	28	0.08		
		PCB直[4]	Q		C	0	0			4	2.6	0.65	1.35		33	0.5	–	–		
		PCB弯[4]						A								0.5	–	–		
1	0	焊接	L	M	C	D	0	0	0.5	6	3.3	0.3	0.75	0.67	7.5	0.65	26	0.15		
					C	C	0									0.45	28	0.08		
		PCB直[4]	Q		C	0	0			4	2.2	0.5	1.35	0.67	25	0.5	–	–		
		PCB弯[4]						A								0.5	–	–		
1	2[5]	焊接	L	M	C	D	9	0	0.5	6	3.3	0.4	1.2	0.67	10	0.65	26	0.15		
					C	C	9									0.45	28	0.08		
		PCB直[4]	Q		C	0	9			4	2.2	0.5			25	0.5	–	–		
		PCB弯[4]						A								0.5	–	–		
1	4	焊接	L	M	C	D	0	0	0.5	6	3	0.3	0.75	0.67	7.5	0.65	26	0.15		
					C	C	0									0.45	28	0.08		
		PCB直[4]	Q		C	0	0			4	2	0.5	1.2	0.67	25	0.5	–	–		
		PCB弯[4]						A								0.5	–	–		

插孔安装在(非固定)插座中；插针安装在插头中。
针孔倒置的产品，需定制。

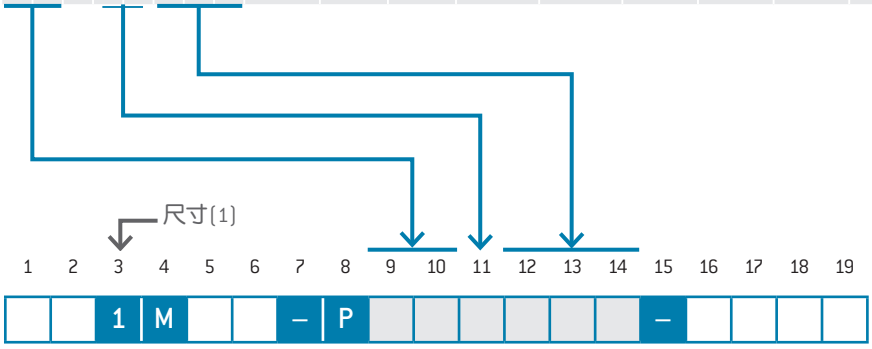


[1] 降级系数见122页
[2] 根据SAE AS 13441:2004 method 3001.1
[3] 压接工具和设置见108页
[4] PCB排布(见41页)；PCB接仅用于G5和G8插座
[5] 不与竞争对手产品兼容
[6] IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[7] IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级2
[8] 冲击电压

特殊 – 芯数说明

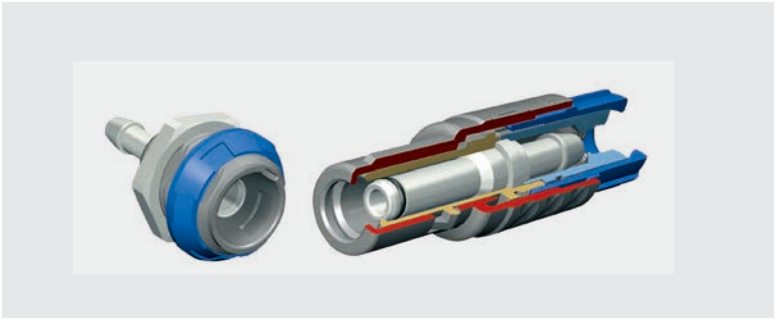
芯数		针孔类型			插针直径/端接截面积			插针直径	单芯额定电流	额定电流	电气间隙和爬电距离		针间电压					端接直径	端接截面积		端接面视图	
														配合状态		未配合状态						
		端接方式	插孔	插针							配合状态	未配合状态	额定电压[1,2,3] IEC V RMS	测试电压[2,4] IEC kV RMS	测试电压[5] SAE kV DC	测试电压[2,4] IEC kV RMS	测试电压[5] SAE kV DC				针	孔
								mm	A	A	mm	mm						mm	AWG	mm²		
0	3	焊接	L	M	J	N	0	1 × 0.9 (先接触，后分离) 2 × 0.9	10	9	4.7	2	230	5	6.75	3	4.5	1.4	18	1		

插孔安装在插头中；
插针安装在插座中。

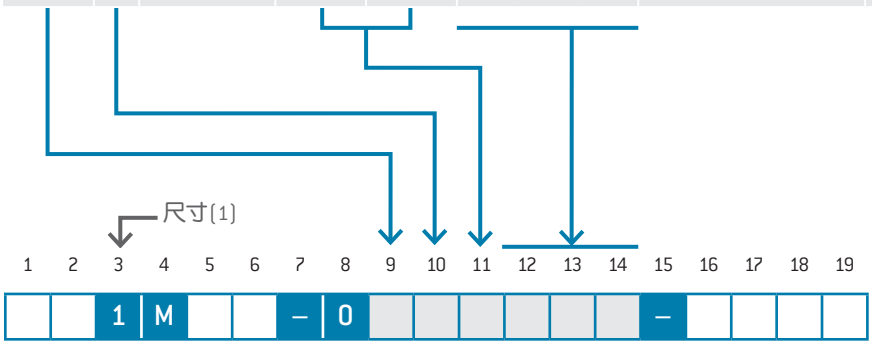


[1] 插头侧仅允许在配合状态下加载电压
[2] IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[3] IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级3
[4] 冲击电压
[5] 根据SAE 13441:2004 method 3001.1

流体连接器

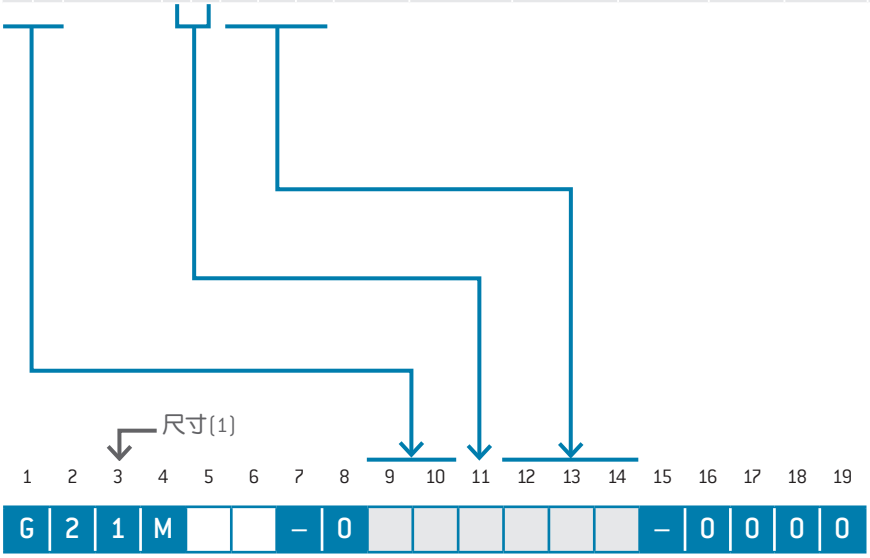


流体连接器	流道连通		针孔类型		插针直径/端接截面积			流道内径	最大工作压力	端接直径	最大气管外径
			插孔	插针							
								mm	bar	mm	mm
F	1	不闭合	B	S	1	1	0	2.5	2	4	6
	A	闭合	B	S	可定制			1.9	2	4	6



芯数说明
G2插座

芯数		针孔类型			插针直径/端接截面积			插针直径	单芯额定电流[1]	额定电流	电气间隙和爬电距离	测试电压[2]	测试电压[3,5]	额定电压[3,4]	端接直径	端接截面积		端接面视图	
		端接方式	插孔	插针				mm	A	A	mm	SAE kV DC	IEC kV RMS	IEC V RMS	mm	AWG	mm²	针	孔
0	2	焊接	A		P	H	0	1.3	12	12	1.3	1.9	0.67	48	1.1	20	0.5		
0	3	焊接	A		P	H	9	1.3	12	12	1.2	1.9	0.67	48	1.1	20	0.5		
0	4	焊接	A		J	G	0	0.9	7.5	7.5	1.2	1.9	0.67	48	0.85	22	0.38		
0	5	焊接	A		J	G	0	0.9	7.5	5.6	0.8	1.6	0.67	35	0.85	22	0.38		
0	6	焊接	A		F	D	0	0.7	6	4.5	0.85	1.6	0.67	36	0.65	26	0.15		
0	7	焊接	A		F	D	0	0.7	6	3.9	0.85	1.6	0.67	36	0.65	26	0.15		
0	8	焊接	A	B	F	D	0	0.7	6	3.9	0.6	1.6	0.67	32	0.65	26	0.15		
0	9	焊接	A		C	C	0	0.5	4	2.6	0.65	1.35	0.67	33	0.45	28	0.08		
1	0	焊接	A		C	C	0	0.5	4	2.2	0.5	1.35	0.67	25	0.45	28	0.08		
1	2	焊接	A		C	C	9	0.5	4	2.2	0.5	1.2	0.67	25	0.45	28	0.08		
1	4	焊接	A	B	C	C	0	0.5	4	2	0.5	1.2	0.67	25	0.45	28	0.08		

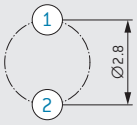
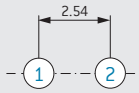
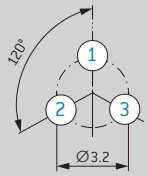
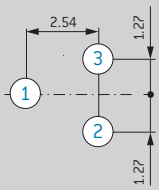
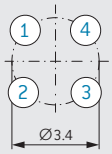
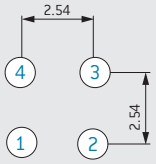
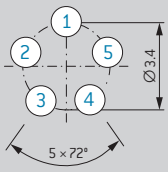
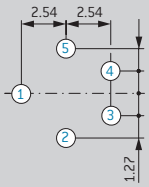
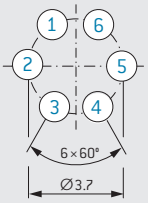
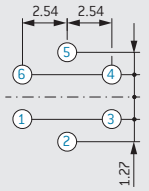
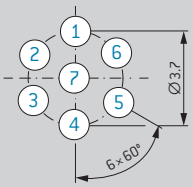
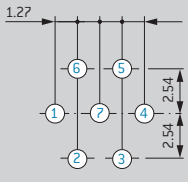


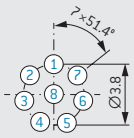
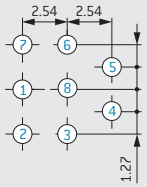
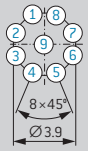
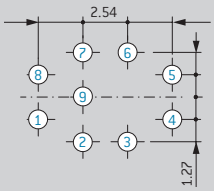
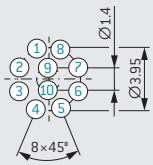
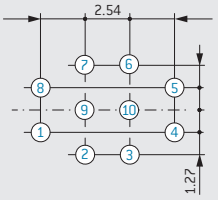
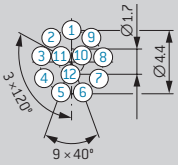
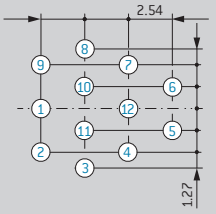
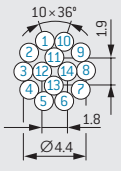
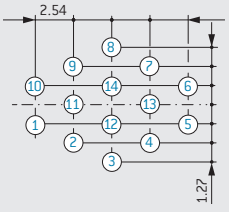
插孔安装在G2插座中。

[1] 降级系数见122页
[2] 根据SAE AS 13441:2004 method 3001.1
[3] IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[4] IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级2
[5] 冲击电压

PCB排布

PCB 车制插针 (1号尺寸)

	直	90° 弯
2 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.9 mm 
3 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.9 mm 
4 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.7 mm 
5 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.7 mm 
6 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
7 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 

	直	90° 弯
8 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
9 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
10 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
12 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
14 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 

所有规格仅适用于插孔。插针需定制。更多PCB排布需根据需求定制。

插座: PCB 弯角

A

弯角PCB插针

IP50

用于G5，G8

插针直径 mm	端接直径 mm
0.5	0.5
0.7	0.6
0.9	0.6
1.3	0.8

技术参数

- PCB排布见41页

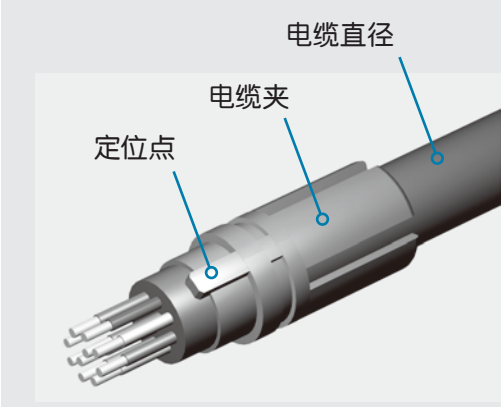
尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	P							–		0		

FOR YOUR NOTES

电缆夹

用于插头，非固定插座和G6插座

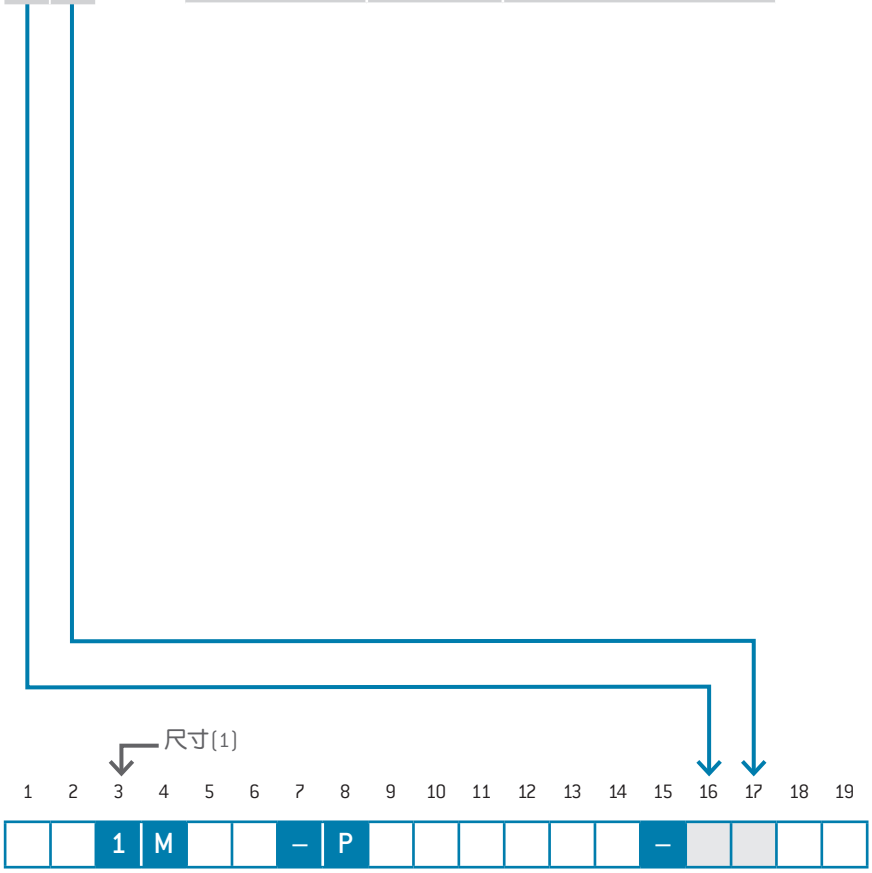


电缆直径 mm	材料	产品编号
> 2.7–3.9	PSU	KM1.020.121.934.007
> 4.0–5.2		KM1.020.122.934.007
> 5.3–6.5		KM1.020.123.934.007
> 2.7–3.9	PEI	KM1.020.121.933.008
> 4.0–5.2		KM1.020.122.933.008
> 5.3–6.5		KM1.020.123.933.008

应用于： 所有插头，非固定插座和G6插座

用途： 应力释放

3	9
5	2
6	5
3	9
5	2
6	5

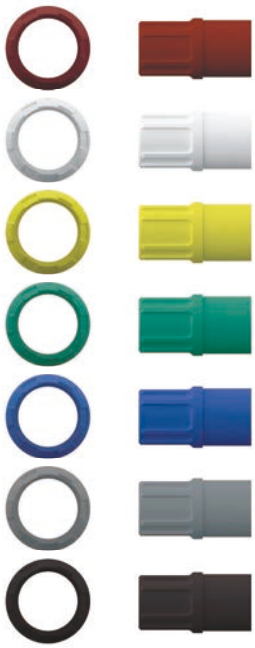


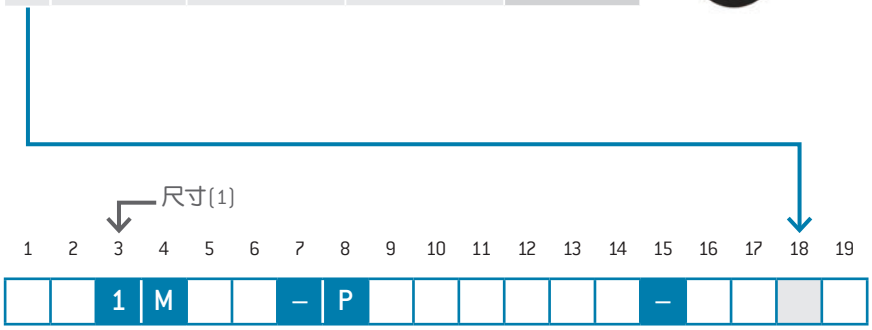
颜色定位

颜色定位可通过螺帽颜色(用于插头，弯角插头，非固定插座)和螺母颜色(用于插座)来实现。

订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色。

	颜色	类似RAL色彩系统		材料
		设计体系	经典系列	
2	红	030 40 40	3002	塑料 (PSU)
3	白	000 90 00	9003	
4	黄	095 90 59	1016	
5	绿	170 60 50	6032	
6	蓝	250 40 40	5019	
7	灰	000 55 00	7045	塑料 (PSU/PEI)
8	黑	000 25 00	9004	

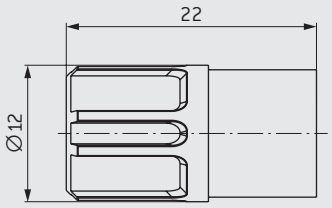




螺帽说明

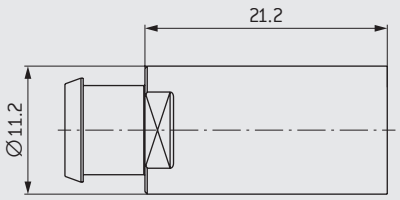
应用于所有直插头，弯角插头，非固定插座和G6插座

标准螺帽



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.020.111.934.002	PSU	红	030 40 40	3002
KM1.020.111.934.003		白	000 90 00	9003
KM1.020.111.934.004		黄	095 90 59	1016
KM1.020.111.934.005		绿	170 60 50	6032
KM1.020.111.934.006		蓝	250 40 40	5019
KM1.020.111.934.007		灰	000 55 00	7045
KM1.020.111.934.008		黑	000 25 00	9004
KM1.020.111.933.008	PEI	黑	000 25 00	9004

标准螺帽用于电缆护套[1]



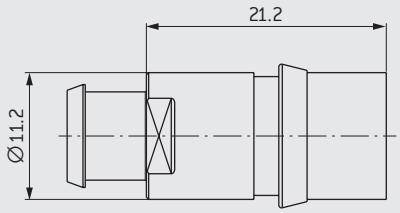
产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.020.113.934.007	PSU[2]	灰	000 55 00	7045
KM1.020.113.934.008		黑	000 25 00	9004
KM1.020.113.933.008	PEI	黑	000 25 00	9004

[1]硅橡胶护套需单独订购(见50页) [2]其他颜色需定制

螺帽说明

应用于所有直插头，弯角插头，非固定插座

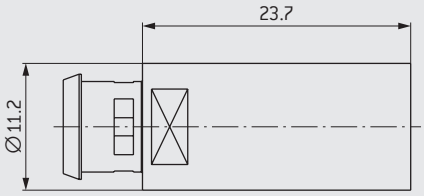
标准螺帽用于S4插头IP 64[1]



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.026.113.934.107	PSU[2]	灰	000 55 00	7045
KM1.026.113.934.108		黑	000 25 00	9004
KM1.026.113.933.108	PEI	黑	000 25 00	9004

标准螺帽用于尾部注塑

可定制

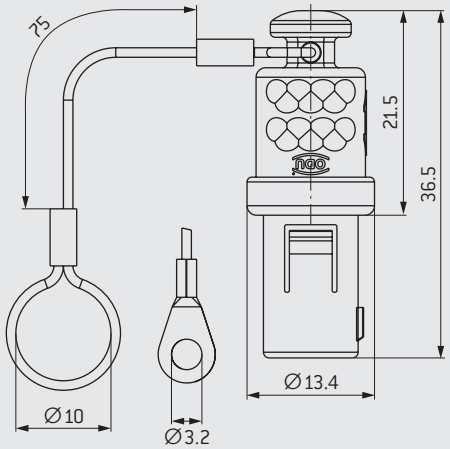


产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.020.114.934.007	PSU[2]	灰	000 55 00	7045
KM1.020.114.934.008		黑	000 25 00	9004
KM1.020.114.933.008	PEI	黑	000 25 00	9004

[1] 硅橡胶护套需单独订购(见50页) [2] 其他颜色需定制

保护帽

适用于塑料外壳插座和非固定插座



产品编号	材料	颜色	
		帽壳	尼龙绳
KM1.097.0_6.934._02	PSU	红	白
KM1.097.0_6.934._03	PSU	白	白
KM1.097.0_6.934._04	PSU	黄	白
KM1.097.0_6.934._05	PSU	绿	白
KM1.097.0_6.934._06	PSU	蓝	白
KM1.097.0_6.934._07	PSU	灰	白
KM1.097.0_6.934._08	PSU	黑	黑
KM1.097.0_6.933._08	PEI	黑	黑

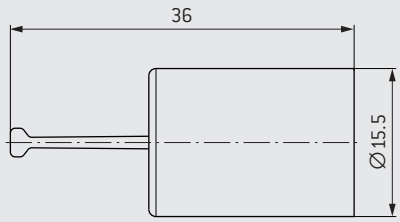
	定位
0	0°
A	40°
C	60°
E	80°
H	170°
J	205°

挂绳材料	
0	尼龙绳带环
1	钢丝绳带环
2	尼龙绳带焊接片
3	钢丝绳带焊接片

运输保护帽

适用于所有直插头，弯角插头和易分离插头

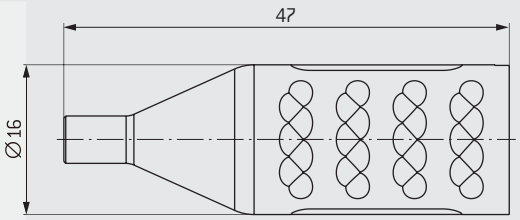
运输保护帽



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
922.000.002.000.075	TPE	黄	095 90 59	1016

保护帽

适用于G2和A5



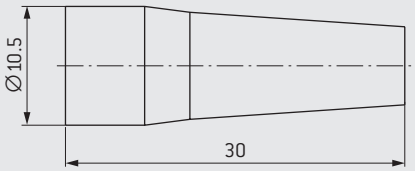
产品编号	材料	颜色
KM1.013._.934.007	PSU	灰[1]

	Ø 用于电缆出线
500	2.5
501	2.7
502	2.8
504	1.7

[1] 其他颜色需定制

硅橡胶护套，用于电缆应力释放

硅橡胶护套，用于电缆应力释放



温度范围

硅橡胶：–50 °C 到 +200 °C，短时间可达 +230 °C
适用于高温消毒

产品编号	电缆直径(Ø外径)	
	最小	最大
701.023.___.965.025	2.5	3
701.023.___.965.030	3	3.5
701.023.___.965.035	3.5	4
701.023.___.965.040	4	5
701.023.___.965.050	5	6
701.023.___.965.060	6	6.5

颜色

颜色代号	颜色	类似RAL色彩系统[1]经典系列
202	红	3020
203	白	9010
204	黄	1016
205	绿	6032
206	蓝	5002
207	灰	7005
208	黑	9005

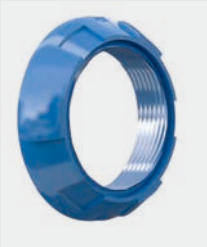
硅橡胶护套，用于电缆应力释放必须单独订购

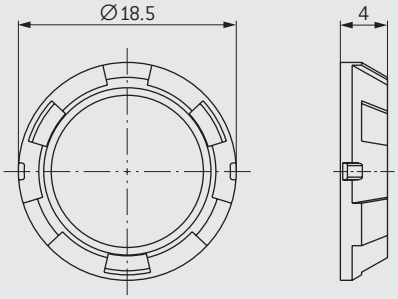
[1] 因为使用不同的基础材料，颜色可能与RAL色码有轻微略差

螺母

前螺母

用于G5, G6, G8插座

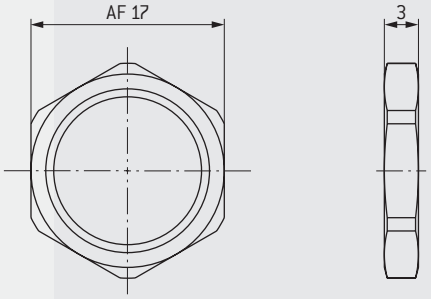




产品编号	材料	颜色	类似RAL色彩系统设计体系
KM1.311.002.934.002	PSU	红	030 40 40
KM1.311.002.934.003		白	000 90 00
KM1.311.002.934.004		黄	095 90 59
KM1.311.002.934.005		绿	170 60 50
KM1.311.002.934.006		蓝	250 40 40
KM1.311.002.934.007		灰	000 55 00
KM1.311.002.934.008		黑	000 25 00
KM1.311.002.933.008	PEI	黑	000 25 00

六角螺母

用于G1, G4, G5, G6, G9, GE, GA插座



产品编号	材料
021.310.115.304.000	黄铜镀镍

ODU MEDI-SNAP®

ODU MEDI-SNAP®
易分离插头：1号尺寸

ODU MEDI-SNAP®易分离插头总览

1. 连接器选择

硅胶尾部包胶注塑解决方案
- 防粘滑效果
- 顺滑平整的尾部包胶
- 可高温高压灭菌

直线型
装配灵活性高

直角型
节省空间的产品设计

尾部注塑型
高性价比的系统解决方案

2. 线缆选型

⊕ 精密的医疗电缆

⊕ 医用和工业电子用标准电缆

3. 现成线缆组件

用于**医疗技术应用**

测试测量与医疗应用

易分离连接器

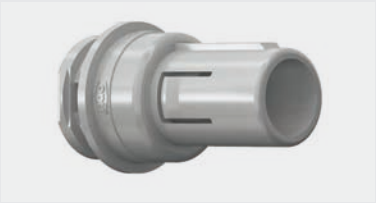
易分离插头型式

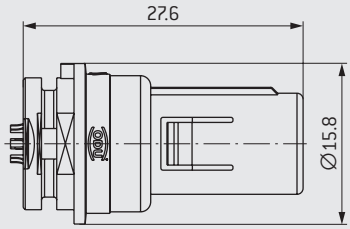
A 5

型式: 5

可抛弃插头

IP67





技术参数

- 芯数说明(见57页)
- 防护等级说明(见114页)
- 直线型达IP50(见59页)
- 尾部注塑与G4/GE/GA插座配合可达到IP67防护等级(见59页)
- 直角型在组装和密封条件下与G4/GE/GA插座配合时可达IP67(见58页)
- 外壳和绝缘体都是塑料[1]
- 可提供PSU产品
- 不可与金属外壳配套使用
- 适用所有ODU MEDI-SNAP®塑料插座和非固定插座
- 可提供焊接插针

尺寸(1)

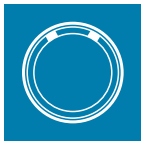
1	2	3	4	5	6	7	8[1]	9	10	11	12	13	14	15	16	17	18	19
		1	M			–	0							–	0	0	0	0

[1]此种类型的连接器外壳和绝缘体材料均为PSU

定位

	角度	插座前视图
0	0°	
A	40°	
C	60°	
E	80°	
H	170°	
J	205°	

外壳材料



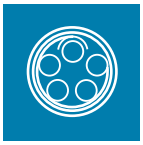
		外壳材料	生物兼容性材料[1]
7	标准	塑料, 灰色 (PSU)	•
8	标准	塑料, 黑色 (PSU)	•
3	标准	塑料, 白色 (PSU)	不提供

更多外壳材料可定制

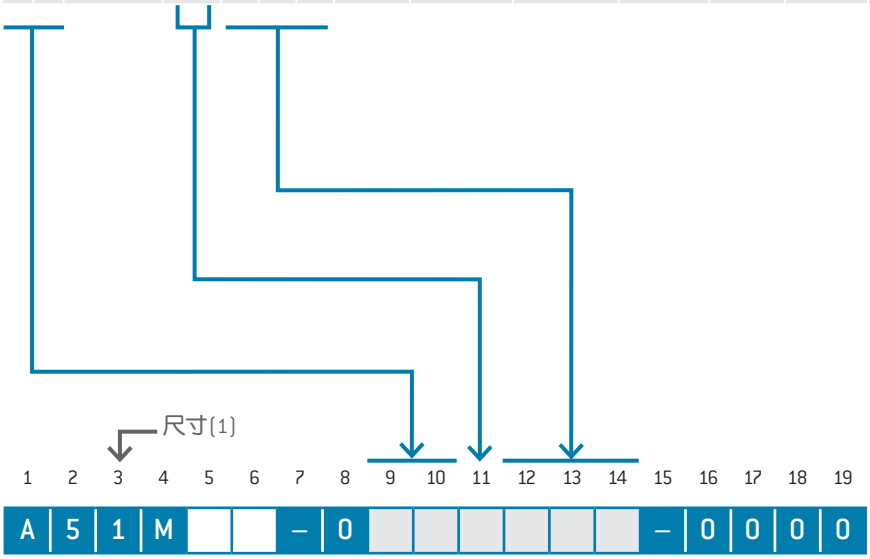
[1] 生物兼容性符合DIN EN ISO 10993:
DIN EN ISO 10993-5:2009-10: 体外细胞毒性试验。测试确定材料中的有毒成分是否会导致细胞损伤。
DIN EN ISO 10993-10:2014-10: 刺激性和皮肤致敏试验。皮肤刺激性和皮肤致敏性试验旨在确定医疗产品的刺激性和致敏性。
DIN EN ISO 10993-11:2018-09: 全身毒性试验。
DIN EN ISO 10993-18:2009-08: 风险管理过程中医疗器械材料的化学特性。

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A	5	1	M			–								–	0	0	0	0

芯数说明
型式：A5



芯数		针孔类型		插针直径/端接截面积			插针直径	单芯额定电流[1]	额定电流	电气间隙和爬电距离	测试电压[2]	测试电压[3,5]	额定电压[3,4]	端接直径	端接截面积		端接面视图
		端接方式	插针				mm	A	A	mm	SAE kV DC	IEC kV RMS	IEC V RMS	mm	AWG	mm²	针
0	2	焊接	B	P	H	0	1.3	12	12	1.3	1.9	0.67	48	1.1	20	0.5	
0	3	焊接	B	P	H	9	1.3	12	12	1.2	1.9	0.67	48	1.1	20	0.5	
0	4	焊接	B	J	G	0	0.9	7.5	7.5	1.2	1.9	0.67	48	0.85	22	0.38	
0	5	焊接	B	J	G	0	0.9	7.5	5.6	0.8	1.6	0.67	35	0.85	22	0.38	
0	6	焊接	B	F	D	0	0.7	6	4.5	0.85	1.6	0.67	36	0.65	26	0.15	
0	7	焊接	B	F	D	0	0.7	6	3.9	0.85	1.6	0.67	36	0.65	26	0.15	
0	8	焊接	B	F	D	0	0.7	6	3.9	0.6	1.6	0.67	32	0.65	26	0.15	
0	9	焊接	B	C	C	0	0.5	4	2.6	0.65	1.35	0.67	33	0.45	28	0.08	
1	0	焊接	B	C	C	0	0.5	4	2.2	0.5	1.35	0.67	25	0.45	28	0.08	
1	2	焊接	B	C	C	9	0.5	4	2.2	0.5	1.2	0.67	25	0.45	28	0.08	
1	4	焊接	B	C	C	0	0.5	4	2	0.5	1.2	0.67	25	0.45	28	0.08	



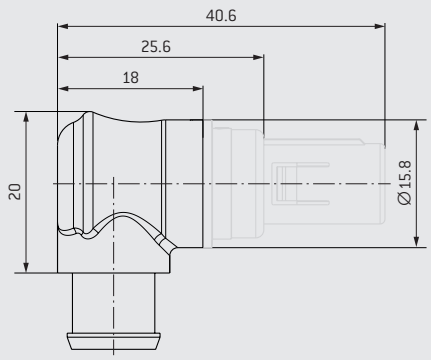
插头A5中是插针

[1] 降级系数见122页
[2] 根据SAE AS 13441:2004 method 3001.1
[3] IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[4] IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级2
[5] 冲击电压

易分离插头配件

直角型

IP67*



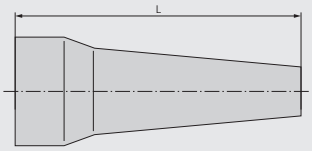
装配说明见产品数据表。

*在组装和灌胶密封条件下可达IP67/密封为必须的应力释放。

产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
026.KM1.013.701.003	PSU	白	000 90 00	9003
026.KM1.013.701.007	PSU	灰	000 55 00	7045
026.KM1.013.701.008	PSU	黑	000 25 00	9004

硅橡胶护套，用于电缆应力释放

产品编号	Dim. L	电缆直径(Ø外径)	
	mm	最小	最大
702.023.___.965.025	36	2.5	3
702.023.___.965.030		3	3.5
702.023.___.965.035		3.5	4
702.023.___.965.040		4	5
702.023.___.965.050		5	6
702.023.___.965.060		6	7
702.023.___.965.070		7	8
702.023.___.965.080		8	9



温度范围

硅橡胶：–50 °C 到 +200 °C, 短时间可达 +230 °C
适用于高温消毒

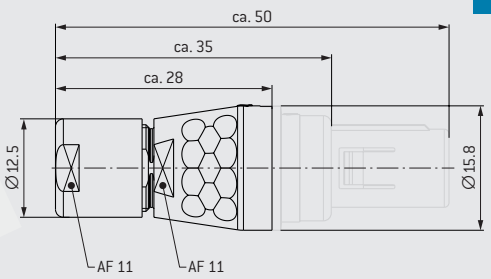
颜色代号	颜色	RAL色码 (similar)
202	红	3020
203	白	9010
204	黄	1016
205	绿	6032
206	蓝	5002
207	灰	7005
208	黑	9005

[1]由于原材料不同，颜色可能与RAL色码略有不同。

易分离插头配件

直线型

IP50



装配说明见产品数据表。

直线型包括电缆夹和螺帽。

产品编号	电缆直径 mm
026.KM1.129.9__.025	> 1.5 – 2.5
026.KM1.129.9__.037	> 2.5 – 3.7
026.KM1.129.9__.049	> 3.7 – 4.9
026.KM1.129.9__.060	> 4.9 – 6.0

颜色代号	颜色	类似RAL色彩系统 设计体系
07	灰	000 55 00
08	黑	000 25 00

尾部注塑型

IP67

所有易分离插头可作为标准系统解决方案产品订购，并且可配合不同的尾部注塑材料和电缆材料。

ODU MEDI-SNAP®

ODU MEDI-SNAP®
塑料外壳 2号尺寸

ODU MEDI-SNAP®总览
塑料外壳系列，2号尺寸

ODU MEDI-SNAP®塑料外壳系列，2号尺寸通过定位块和定位槽定位。这款圆柱型连接器有多种配置方案：多种插头型式和插座型式，以及多种端接类型，插针芯数和颜色定位。

- 定位块和定位槽定位
- 8种颜色定位
- 3种机械定位
- 3–26芯
- 2种端接类型
- 焊接和PCB接
- 多种插头和插座型式可选
- 配合状态下，可达IP50或IP64
- 插拔次数>5,000

直插头 – 插拔自锁 P. 64 — 2,000 插拔次数

IP50

S 1

IP50 / 64

S 4

全新！
易分离插头
从第78页开始

易分离插头 P. 65 — 2,000 插拔次数

IP64

A 5

装配说明请访问我们的网站: www.odu-connectors.com/downloads/assembly-instructions

插座

P. 66

5,000 插拔次数

IEC 60601-1:
2 MOOP[1] and 1 MOPP[1]
IP50

G 1

IEC 60601-1:
2 MOOP[1] and 2 MOPP[1]
IP64

G 4

IEC 60601-1:
2 MOOP[1] and 1 MOPP[1]
IP50

G 5

IEC 60601-1:2012

操作用户保护(MOOP) / 患者保护(MOPP)

本表适用于医疗器械工作电压最高250 V AC (污染等级2)。
有关连接器的工作电压，请参阅芯数说明。

MOOP / MOPP	到测试端的电气间隙 mm	到测试端的爬电距离 mm	测试电压 V AC
1 MOOP	≥ 2	≥ 2.5	1,500
2 MOOP	≥ 4	≥ 5	3,000
1 MOPP	≥ 2.5	≥ 4	1,500
2 MOPP	≥ 5	≥ 8	4,000

该信息涉及第56页提到的所有配合状态下的插头。

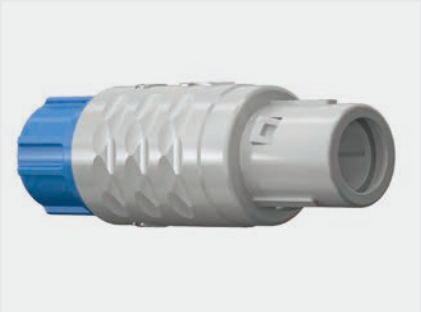
[1]根据IEC 60601-1:2012 (VDE 0750-1:2013-12)

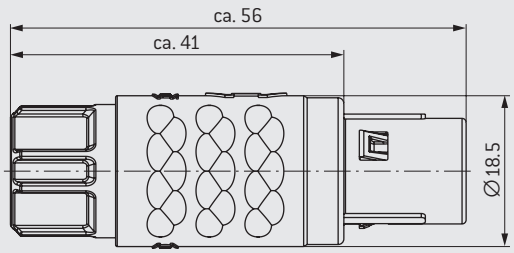
直插头

插拔自锁插头

S 1 | 0 | **型式: 1** | IP50

标准螺帽



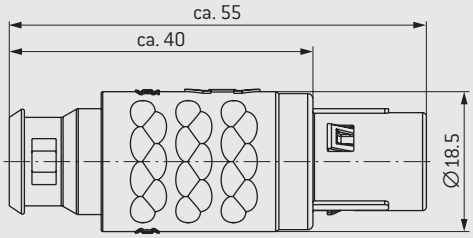


技术参数

- 芯数说明见69页
- 防护等级说明(见114页)
- 仅有灰色
- 颜色定位

S 4 | S | **型式: 4** | IP50/64

可装护套[2]螺帽[1]



技术参数

- 芯数说明见69页
- 防护等级说明(见114页)
- 与G1和G5插座配合可达到IP 50防护等级(配合状态)
- 与G4插座配合可达到IP64防护等级(配合状态)
- 仅有灰色
- 可选型式S2，IP50

尺寸(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–				

[1]订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色
[2]护套需要单独订购(见76页)

易分离连接器

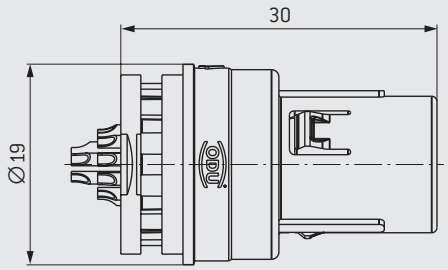
易分离插头

A 5

型式: 5

可抛弃插头

IP64



技术参数

- 芯数说明见83页
- 防护等级说明(见114页)
- 直线型达IP50(见84页)
- 尾部注塑与G4插座配合可达到IP64防护等级
- 外壳和绝缘体都是塑料[1]
- 可提供PSU产品
- 可提供焊接插针
- 可提供5芯，16芯或26芯，其他芯数可根据要求定制
- 可提供C定位，C=60°，其它定位需定制

全新!
易分离插头
从第78页开始

尺寸(2)

1	2	3	4	5	6	7	8[1]	9	10	11	12	13	14	15	16	17	18	19
A	5	2	M	C	7	–	0							–	0	0	0	0

[1]此种类型的连接器外壳和绝缘体材料均为PSU

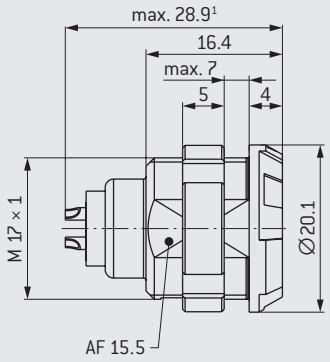
插座

G 1

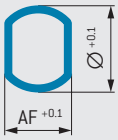
型式: 1

机箱内固定

IP50



面板开孔图



AF : 15.6 mm
Ø : 17.1 mm

技术参数

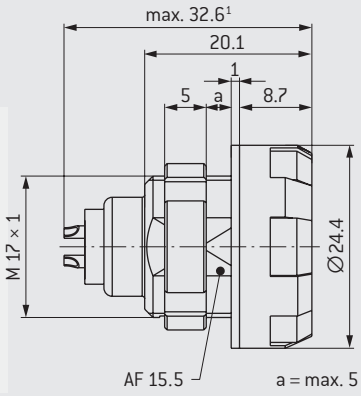
- 芯数说明和PCB排布(见69页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 前螺母的颜色和外壳一致
- 颜色定位可定制

G 4

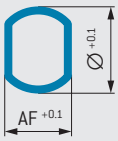
型式: 4

机箱内固定

IP64



面板开孔图



AF : 15.6 mm
Ø : 17.1 mm

技术参数

- 芯数说明和PCB排布(见69页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 与S4插头在配合条件下可达IP64
- 与易分离插头A5尾部注塑型组合条件下可达IP64(见84页)
- 颜色定位

尺寸(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–		0		1

¹ 由针芯决定

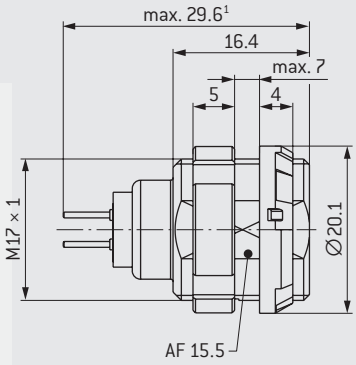
插座

G 5

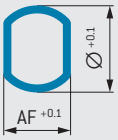
型式: 5

机箱内，外均可固定

IP50



面板开孔图



AF : 15.6 mm
Ø : 17.1 mm

技术参数

- 芯数说明和PCB排布(见69页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 颜色定位
- 可提供PCB弯角插针(见71页)

尺寸(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–		0		1

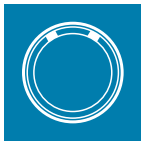
[1] 由针芯决定

定位

	角度	插座前视图
C	60°	
E	80°	
F	90°	

更多定位可定制

外壳材料



	外壳材料	生物兼容性材料[1]
7	标准 塑料, 灰色 (PSU)	●
8	可定制 塑料, 黑色 (PSU)	●
9	可定制 塑料, 橙色 (PSU)	不提供

更多外壳材料可定制

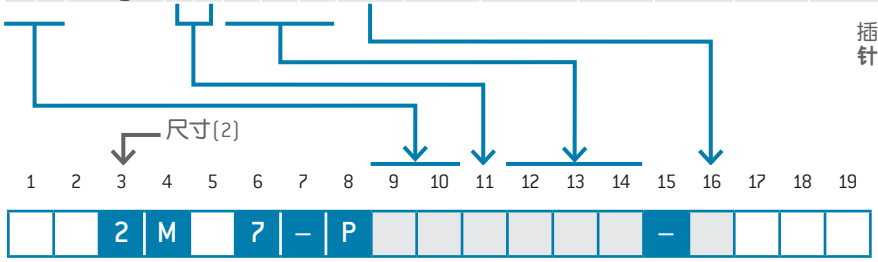
[1] 生物兼容性符合DIN EN ISO 10993:
DIN EN ISO 10993-5:2009-10: 体外细胞毒性试验。测试确定材料中的有毒成分是否会导致细胞损伤。
DIN EN ISO 10993-10:2014-10: 刺激性和皮肤致敏试验。皮肤刺激性和皮肤致敏性试验旨在确定医疗产品的刺激性和致敏性。
DIN EN ISO 10993-11:2018-09: 全身毒性试验。
DIN EN ISO 10993-18:2009-08: 风险管理过程中医疗器械材料的化学特性。

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–				

芯数说明

芯数		针孔类型			插针直径/端接截面积			插针形状	插针直径	单芯额定电流[1]	额定电流	电气间隙和爬电距离	测试电压[2]	测试电压[4,6]	额定电压[4,5]	端接直径	端接截面积		端接面视图	
		端接方式	插孔	插针					mm	A	A	mm	SAE kV DC	IEC kV RMS	IEC V RMS	mm	AWG	mm²	针	孔
0	4	焊接	L	M	P	N	0	0	1.3	15	15	1.6	3	0.67	48	1.4	18	1		
					P	H	0			12	12	2				1.1	20	0.5		
		PCB直[3]	Q		P	0	0	A								0.7	–	–		
		PCB弯[3]														0.8	–	–		
1	2	焊接	L	M	F	G	0	0	0.7	7.5	3.75	0.8	1.6	0.67	37	0.85	22	0.38		
					F	D	0			6	3	1			48	0.65	26	0.15		
		PCB直[3]	Q		F	0	0	A								0.7	–	–		
		PCB弯[3]														0.6	–	–		
1	6	焊接	L	M	F	G	0	0	0.7	7.5	3.75	0.5	1.6	0.67	25	0.85	22	0.38		
					F	D	0			6	3	0.7			34	0.65	26	0.15		
		PCB直[3]	Q		F	0	0	A								0.7	–	–		
		PCB弯[3]														0.6	–	–		
1	9	焊接	L	M	F	G	0	0	0.7	7.5	3.4	0.5	1.35	0.67	25	0.85	22	0.38		
					F	D	0			6	2.7	0.7			34	0.65	26	0.15		
		PCB直[3]	Q		F	0	0	A								0.7	–	–		
		PCB弯[3]														0.6	–	–		
2	6	焊接	L	M	C	C	0	0	0.5	4	1.6	0.5	1.35	0.67	25	0.45	28	0.08		
		PCB直[3]	Q		C	0	0	A								0.5	–	–		
		PCB弯[3]														0.5	–	–		

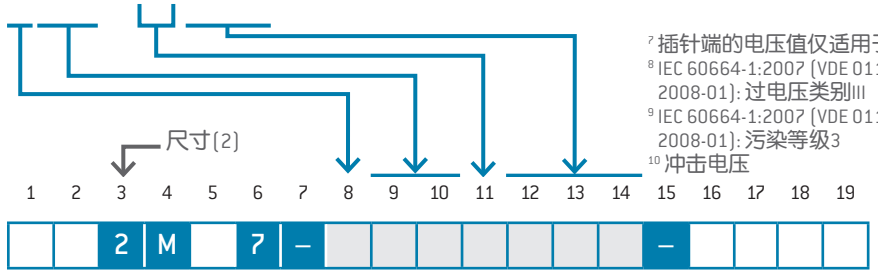
插孔安装在插座中；插针安装在插头中。
针孔倒置的产品，需定制。



[1]降级系数见122页
[2]根据SAE AS 13441:2004 method 3001.1
[3]PCB排布见70页；PCB端接仅适用于G5插座
[4]IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[5]IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级2
[6]冲击电压

特殊–芯数说明

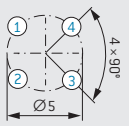
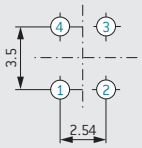
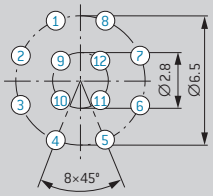
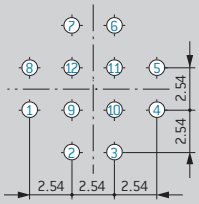
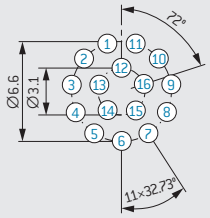
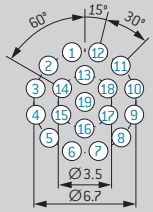
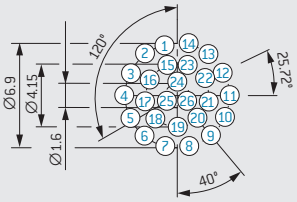
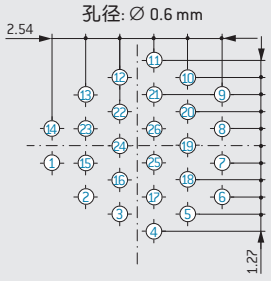
绝缘体材料[13]	芯数		针孔类型			插针直径/端接截面积			插针直径	单芯额定电流	额定电流	电气间隙和爬电距离		针与针之间的电压			端接直径	端接截面积		端接面视图	
			端接方式	插孔	插针				mm	A	A	配合状态 mm	未配合状态 mm	额定电压[7,8,9] IEC V RMS	测试电压[8,10] 配合状态IEC kV	测试电压[8,10] 未配合状态 IEC kV	mm	AWG	mm²	针	孔
P	0	3[11]	焊接	L	M	T	S	0	1 × 2 (first mate last break) 2 × 2	22	22	4.7	2	230	5	3	2.4	12	2.5		
T	0	5	焊接	L[14]	M[15]	P	Q	9	1 × 1.3 (first mate last break)	16	12	9.9	3.2	600[12]	7.4[12]	5[12]	1.9	16	1.5		
						P	Q	L	2 × 1.3 (lagging)			13.6	3.2	1000[12]	9.9[12]	5[12]					
									2 × 1.3												



[7]插针端的电压值仅适用于配合状态
[8]IEC 60664-1:2007 (VDE 0110-1: 2008-01): 过电压类别III
[9]IEC 60664-1:2007 (VDE 0110-1: 2008-01): 污染等级3
[10]冲击电压
[11]插孔安装在插头中；插针安装在插座中。
[12]电压只能在配合状态，且连接器组装完整并灌胶的情况下施加。
[13]T: PBT
[14]4 x 插孔 / 1 x 插针
[15]1 x 插孔 / 4 x 插针

PCB排布

PCB 车制插针 (2号尺寸)

	PCB直	PCB 90° 弯
4 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.9 mm 
12 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.7 mm 
16 芯	孔径: Ø 0.8 mm 	
19 芯	孔径: Ø 0.8 mm 	
26 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.6 mm 

所有规格仅适用于插孔。插针需定制。
更多PCB排布需根据需求定制。

插座: PCB 弯角

A

弯角PCB插针

IP50

用于G5

插针直径 mm	端接直径 mm
0.5	0.5
0.7	0.6
1.3	0.8

技术参数

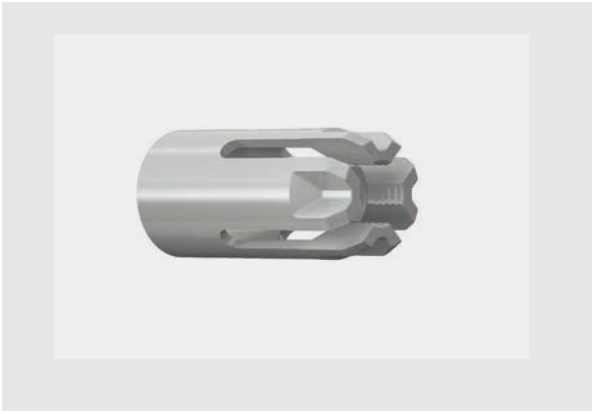
- PCB排布见70页

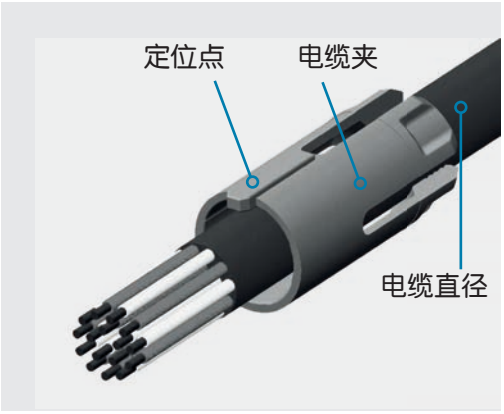
尺寸(2)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–		0		1

电缆夹

用于插头



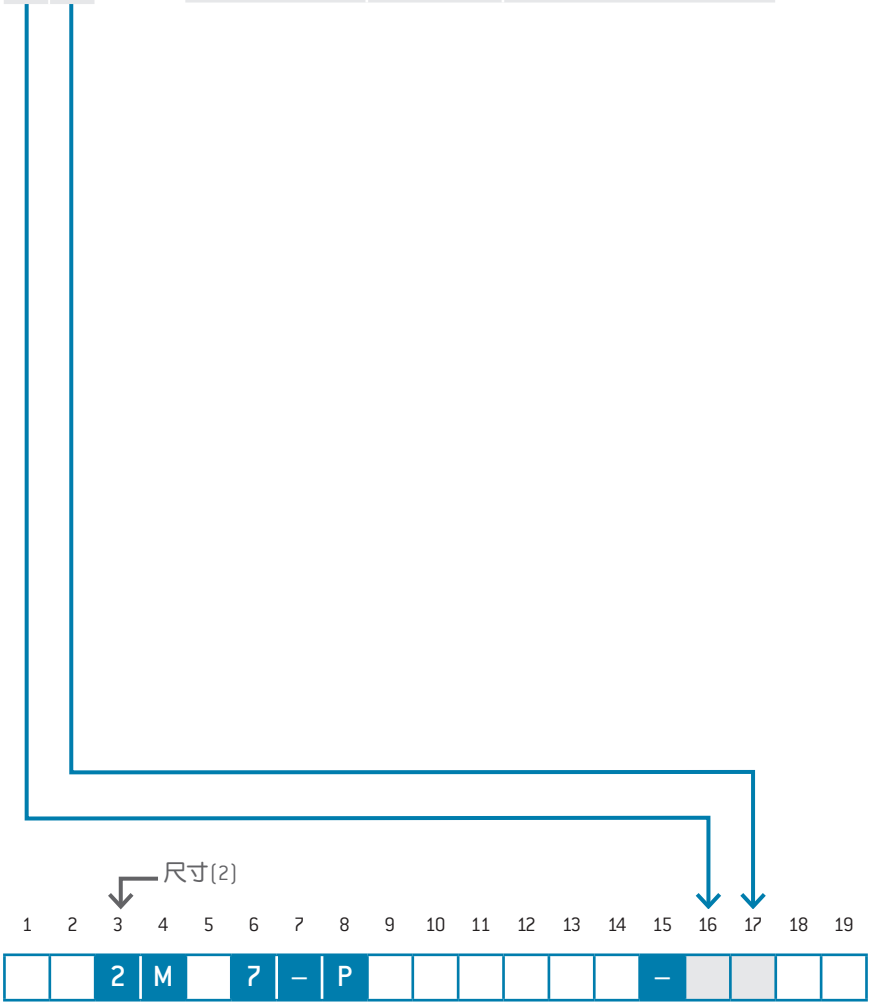


电缆直径 mm	材料	产品编号
> 3.2 – 5.4	PSU	KM2.020.121.934.007
> 5.4 – 7.4		KM2.020.122.934.007
> 7.4 – 9.2		KM2.020.123.934.007

应用于: 所有插头

用途: 应力释放

5	4
7	4
9	2

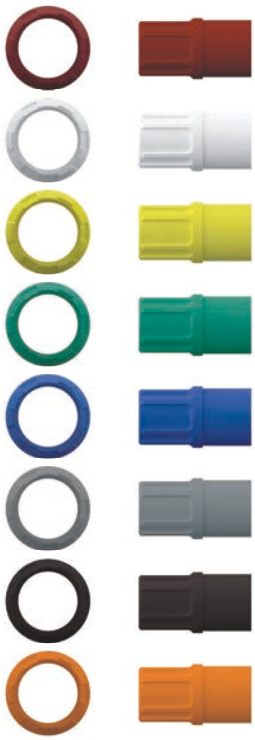


颜色定位

前螺母颜色定位仅用于G4和G5插座
螺帽颜色定位仅用于S1直插头

S4插头的颜色定位基于护套

	颜色	类似RAL色彩系统		材料
		设计体系	经典系列	
2	红	030 40 40	3002	塑料 (PSU)
3	白	000 90 00	9003	
4	黄	095 90 59	1016	
5	绿	170 60 50	6032	
6	蓝	250 40 40	5019	
7	灰	000 55 00	7045	
8	黑	000 25 00	9004	
9	橙	050 60 80	2003	

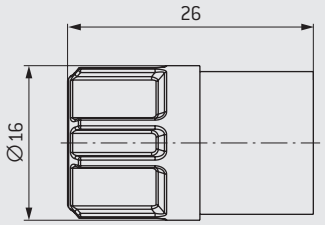


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–				

螺帽说明

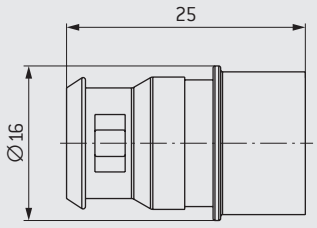
应用于所有直插头

标准螺帽



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM2.020.111.934.002	PSU	红	030 40 40	3002
KM2.020.111.934.003		白	000 90 00	9003
KM2.020.111.934.004		黄	095 90 59	1016
KM2.020.111.934.005		绿	170 60 50	6032
KM2.020.111.934.006		蓝	250 40 40	5019
KM2.020.111.934.007		灰	000 55 00	7045
KM2.020.111.934.008		黑	000 25 00	9004
KM2.020.111.934.009		橙	050 60 80	2003

标准螺帽用于线缆应力释放[1]用于IP50/IP64插头



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM2.026.112.934.007	PSU	灰	000 55 00	7045

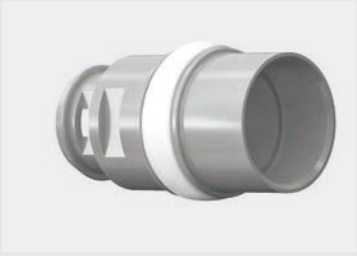
[1] 护套需要单独订购(见76页)

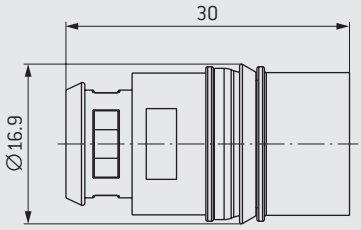
螺帽说明

应用于所有直插头

标准螺帽用于尾部注塑

可定制



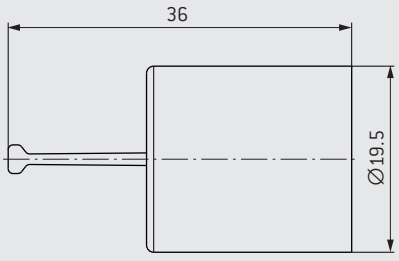


产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM2.026.113.934.007	PSU	灰	000 55 00	7045
KM2.026.113.934.107[1]	PSU	灰	000 55 00	7045

运输保护帽

适用于所有直插头，弯角插头和易分离插头

运输保护帽

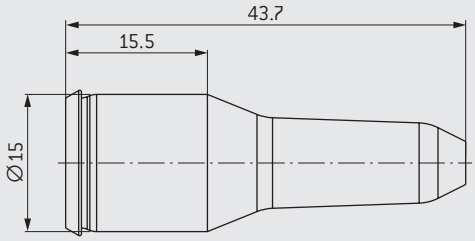


产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
922.000.002.000.079	TPE	黄	095 90 59	1016

[1] 配合S4连接器达IP64

硅橡胶护套

硅橡胶护套



温度范围

硅橡胶：–50 °C 到 +200 °C, 短时间可达 +230 °C
适用于高温消毒

产品编号	电缆直径(Ø外径)	
	最小	最大
KM2.023.___.965.032	3.2	4.7
KM2.023.___.965.047	4.7	6.2
KM2.023.___.965.062	6.2	7.7
KM2.023.___.965.077	7.7	9.2

颜色

颜色代号	颜色	类似RAL色彩系统[1] 经典系列
207	Gray	7000
208	Black	9005

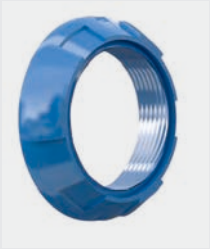
硅橡胶护套，必须单独订购

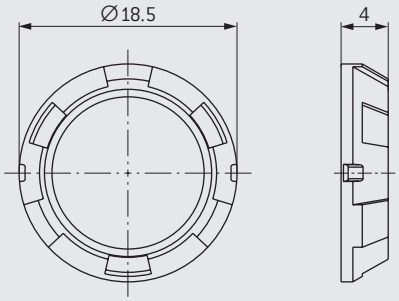
[1] 因为使用不同的基础材料，颜色可能与RAL色码有轻微略差

螺母

前螺母

用于G5插座

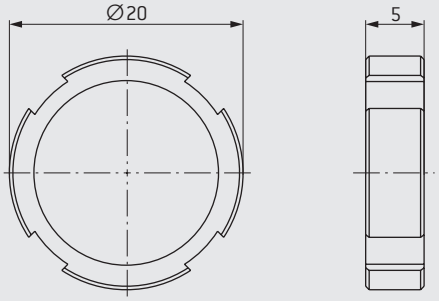




产品编号	材料	颜色	类似RAL色彩系统 设计体系
KM2.311.002.934.002	PSU	红	030 40 40
KM2.311.002.934.003		白	000 90 00
KM2.311.002.934.004		黄	095 90 59
KM2.311.002.934.005		绿	170 60 50
KM2.311.002.934.006		蓝	250 40 40
KM2.311.002.934.007		灰	000 55 00
KM2.311.002.934.008		黑	000 25 00
KM2.311.002.934.009		橙	050 60 80

安装螺母

用于G1, G4, G5插座



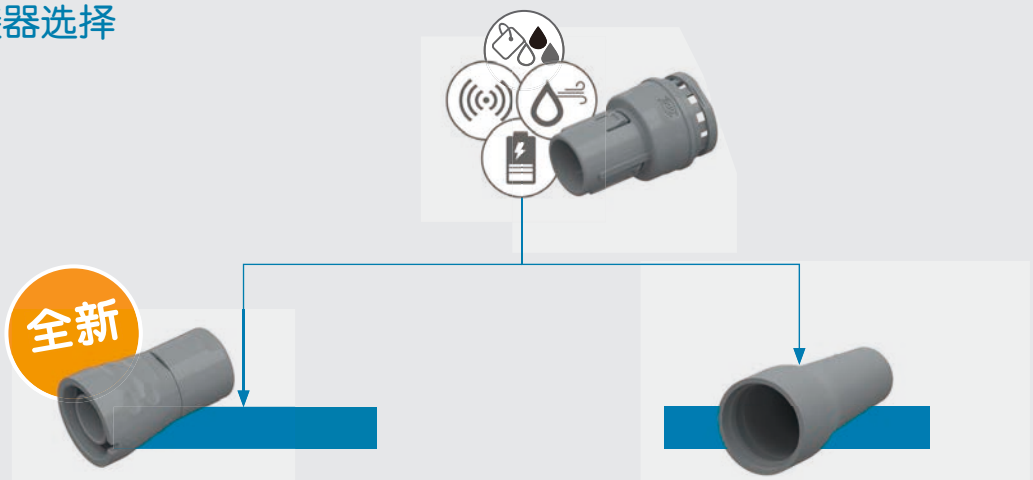
产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM2.311.001.933.007	PEI	灰	000 55 00	7045

ODU MEDI-SNAP®

ODU MEDI-SNAP®
易分离插头：2号尺寸

ODU MEDI-SNAP®易分离插头总览

1. 连接器选择



直线型

装配灵活性高

尾部注塑型

高性价比的系统解决方案

2. 线缆选型

医用和工业电子用标准电缆

3. 现成线缆组件

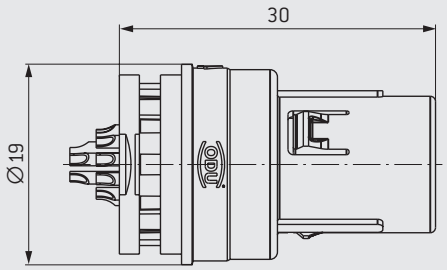
用于工业和医疗应用

易分离连接器

易分离插头

A 5 | 0 | 型式: 5 | IP64

可抛弃插头



技术参数

- 芯数说明见83页
- 防护等级说明(见114页)
- 直线型达IP50(见84页)
- 尾部注塑与G4插座配合可达到IP64防护等级
- 外壳和绝缘体都是塑料[1]
- 可提供PSU产品
- 可提供焊接插针
- 可提供5芯，16芯或26芯，其他芯数可根据要求定制
- 可提供C定位，C=60°，其它定位需定制

		尺寸(2)																
1	2	3	4	5	6	7	8[1]	9	10	11	12	13	14	15	16	17	18	19
A	5	2	M			–	0							–	0	0	0	0

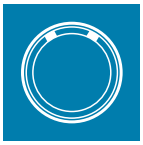
[1]此种类型的连接器外壳和绝缘体材料均为PSU

定位

	角度	插座前视图
C	60°	

更多定位可定制

外壳材料



	外壳材料	生物兼容性材料[1]
7	标准 塑料, 灰色 (PSU)	●
8	可定制 塑料, 黑色 (PSU)	●

更多外壳材料可定制

[1] 生物兼容性符合DIN EN ISO 10993:
DIN EN ISO 10993-5:2009-10: 体外细胞毒性试验。测试确定材料中的有毒成分是否会导致细胞损伤。
DIN EN ISO 10993-10:2014-10: 刺激性和皮肤致敏试验。皮肤刺激性和皮肤致敏性试验旨在确定医疗产品的刺激性和致敏性。
DIN EN ISO 10993-11:2018-09: 全身毒性试验。
DIN EN ISO 10993-18:2009-08: 风险管理过程中医疗器械材料的化学特性。

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A	5	2	M			–	0							–	0	0	0	0

芯数说明
型式 A5

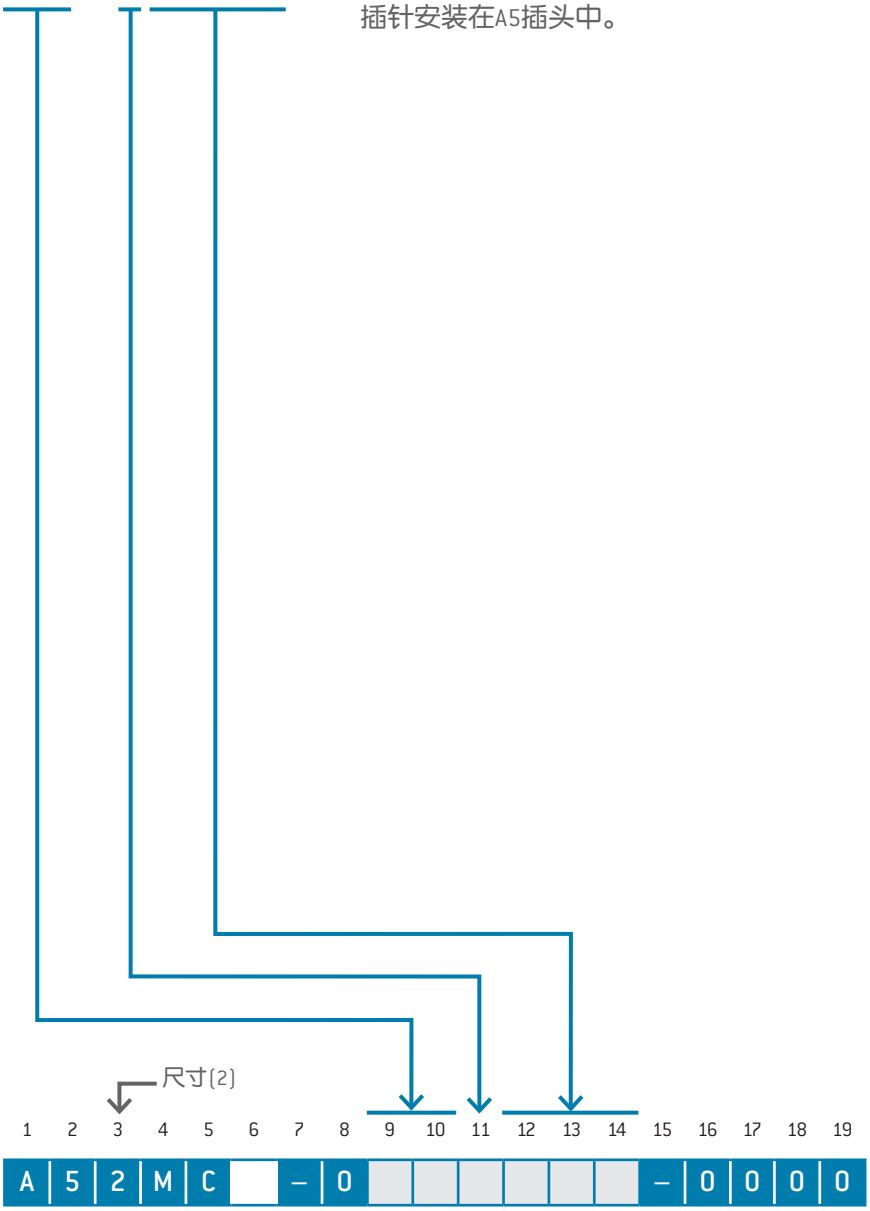
芯数		针孔类型		插针直径/端接截面积			插针直径	单芯额定电流[1]	额定电流	电气间隙和爬电距离	测试电压[2]	测试电压[4,6]	额定电压[4,5]	端接直径	端接截面积		端接面视图
		端接方式	插针				mm	A	A	mm	SAE kV DC	IEC kV RMS	IEC V RMS	mm	AWG	mm²	针
0	5[3]	焊接	M	M	M	9	1 × 1.3 (最先接触最后分离) 2 × 1.3	16	12	1.8	1.1	1.25	180	1.85	16	1.5	
							2 × 0.9	10	7.5					1.10	20	0.5	
1	6	焊接	M	F	G	0	0.7	7.5	3.8	0.5	1.35	0.67	25	0.85	22	0.38	
2	6	焊接	M	C	D	0	0.5	6	2.4	0.4	0.825	0.67	10	0.65	26	0.15	

插针安装在A5插头中。

注意：A5(5芯)可与以下插座配合使用：

G12MC7-P05LMM9-0001
G42MC7-P05LMM9-0071
G52MC7-P05LMM9-0002

其他形式需定制

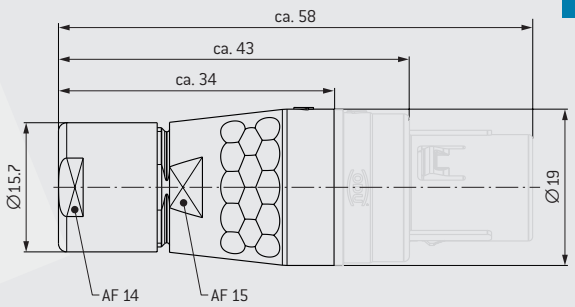


[1] 降级系数见122页
[2] 根据SAE AS 13441:2004 method 3001.1
[3] 最长插针比其他插针长1.5mm
[4] IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[5] IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级2
[6] 冲击电压

易分离插头配件

直线型

IP50



装配说明见产品数据表。

直线型包括电缆夹和螺帽。

产品编号	电缆直径 mm
026.KM2.129.9__.045	> 3.1 – 4.5
026.KM2.129.9__.060	> 4.5 – 6.0
026.KM2.129.9__.075	> 6.0 – 7.5
026.KM2.129.9__.090	> 7.5 – 9.0

颜色代号	颜色	类似RAL色彩系统 设计体系
07	Gray	000 55 00
08	Black	000 25 00

尾部注塑型

IP64

所有易分离插头可作为标准系统解决方案产品订购，并且可配合不同的尾部注塑材料和电缆材料。

FOR YOUR NOTES

ODU MEDI-SNAP®

ODU MEDI-SNAP®
金属外壳系列

ODU MEDI-SNAP®总览
金属外壳

ODU MEDI-SNAP®金属外壳系列1号尺寸通过定位块和定位槽定位。这款圆柱型连接器有多种配置方案：多种插头，插座和非固定插座类型，以及多种端接类型，芯数和颜色定位。

- 与塑料连接器兼容
- 坚固外壳
- 定位块和定位槽定位
- 7种颜色定位
- 3种机械定位
- 2–14芯
- 3种端接类型
- 压接，焊接和PCB接
- 多种插头，插座和非固定插座型式可选
- 配合状态下，可达IP50或IP64
- 插拔次数>5,000

注意：
ODU MEDI-SNAP®易分离连接器A5 1号尺寸不能同金属插座对接

直插头 – 插拔自锁 2,000 插拔次数 P. 90

IP50		S 1
		S 2
IP64		S 4

装配说明请访问我们的网站: www.odu-connectors.com/downloads/assembly-instructions

插座 – 插拔自锁

5,000 插拔次数

P. 91

IP50

G 1

G 5

IP64 / IP68[1]

G A

IP50

G K

非固定插座

5,000 插拔次数

P. 93

IP50

K 5

K 6

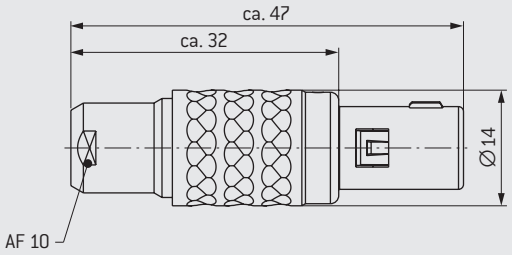
[1] 与设备装配后防护等级为IP 68(未配合状态)

直插头

插拔自锁插头

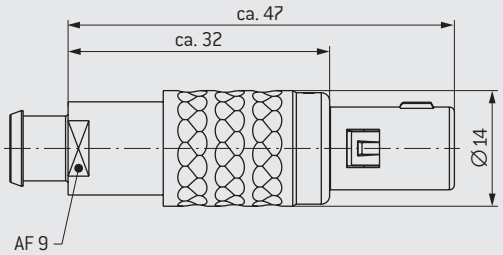
S 1 0 **型式: 1** IP50

标准螺帽



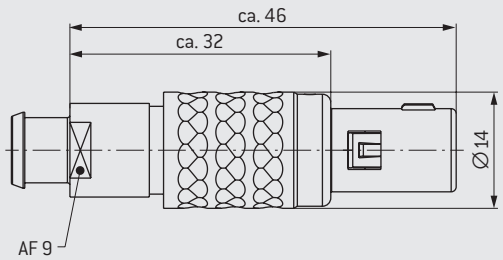
S 2 S **型式: 2** IP50

可装护套[2]螺帽[1]



S 4 S **型式: 4** IP64

可装护套[2]螺帽[1]



技术参数

- 芯数说明见95页
- 防护等级说明(见114页)
- S1可颜色定位
- 与G4插座配合可达到IP64防护等级(配合状态)

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–				

[1]订购可装护套螺帽时，颜色需要同连接器外壳一致，颜色定位基于护套颜色
[2]护套需要单独订购(见104页)

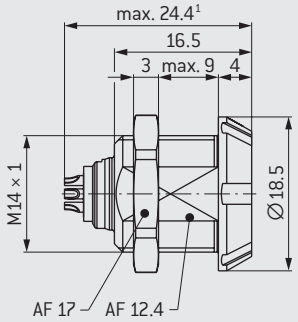
插座

G 1

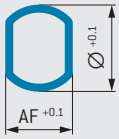
型式: 1

机箱内固定

IP50



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

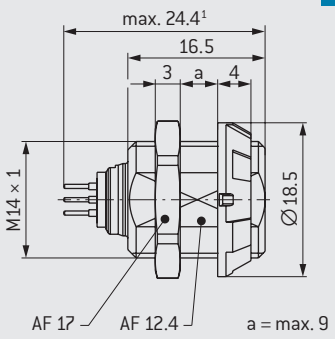
- 芯数说明和PCB排布(见95页)
- 防护等级说明(见114页)
- 防止转动特性
- 与设备装配后防护等级为IP50

G 5

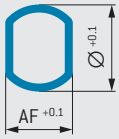
型式: 5

全螺纹，机箱内外均可固定：面板突出部分高度可调节。

IP50



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见95页)
- 防护等级说明(见114页)
- 与设备装配后防护等级为IP50
- 防止转动特性
- 颜色定位
- 可提供弯角PCB插针(见98页)

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–		0		0

[1] 由针芯决定

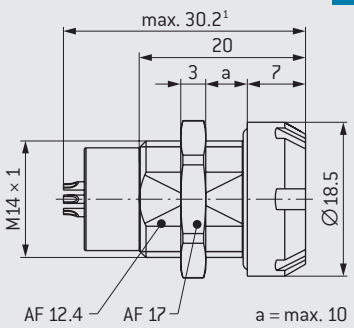
插座

G A

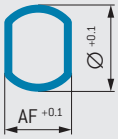
型式: A

IP64/68

机箱内固定



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

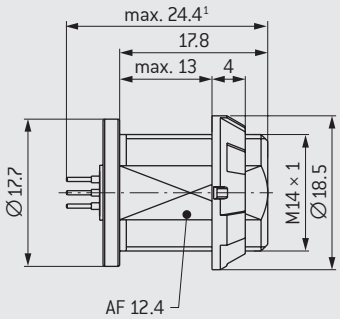
- 芯数说明和PCB排布(见95页)
- 防护等级说明(见114页)
- 与S4插头配合可达IP64防护等级(见78页)
- 拧紧固定防护等级为IP 68(未配合状态)
- 防止转动特性

G K

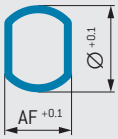
型式: K

IP50

机箱外固定



面板开孔图



AF : 12.5 mm
Ø : 14.1 mm

技术参数

- 芯数说明和PCB排布(见95页)
- 防护等级说明(见114页)
- 拧紧固定后防护等级为IP50
- 防止转动特性
- 颜色定位
- 可提供弯角PCB插针(见98页)

尺寸(1)

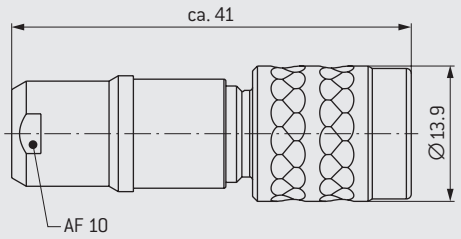
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–		0		0

[1] 由针芯决定

非固定插座

K 5 0 **型式: 5** 可定制 IP50

标准螺帽

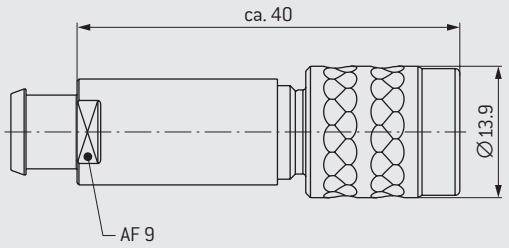


技术参数

- 芯数说明见95页
- 防护等级说明(见114页)
- 可通过螺帽颜色定位(见101页)

K 6 S **型式: 6** 可定制 IP50

可装护套螺帽[1]



技术参数

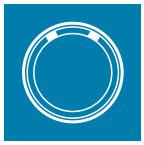
- 芯数说明见95页
- 防护等级说明(见114页)

尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–				

[1] 护套需要单独订购(见104页)

定位



	角度	插座前视图
0	0°	
A	40°	
C	60°	

外壳材料：金属

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–				

芯数说明

芯数		针孔类型			插针直径/端接截面积			插针形状[1]	插针直径	单芯额定电流[2]	额定电流	电气间隙和爬电距离	测试电压[2]	测试电压[6,8]	额定电压[7,8]	端接直径	端接截面积		端接面视图	
		端接方式	插孔	插针					mm	A	A	mm	SAE kV DC	IEC kV RMS	IEC V RMS	mm	AWG	mm²	针	孔
0	2	焊接	L	M	P	N	0	0	1.3	15	15	1	1.6	0.67	38	1.4	18	1		
					P	H	0									1.1	20	0.5		
		PCB直[4]	Q		P	0	0			12	12	1.3	1.9	0.67	48	0.7	–	–		
		PCB弯[4]						A								0.8	–	–		
0	3[5]	焊接	L	M	P	N	9	0	1.3	15	15	0.9	1.6	0.67	37	1.4	18	1		
					P	H	9									1.1	20	0.5		
		PCB直[4]	Q		P	0	9			12	12	1.2	1.9	0.67	48	0.7	–	–		
		PCB弯[4]						A								0.8	–	–		
0	4	焊接	L	M	J	H	0	0	0.9	10	10	0.9	1.6	0.67	37	1.1	20	0.5		
					J	G	0			7.5	7.5	1.2	1.9	0.67	48	0.85	22	0.38		
		压接[3]	N	P	J	H	0			10	10	0.9	1.6	0.67	37	–	20–24	0.5–0.25		
					J	G	0									–	22–26	0.38–0.15		
		PCB直[4]	Q		J	0	0			7.5	7.5	1.2	1.9	0.67	48	0.7	–	–		
		PCB弯[4]						A								0.6	–	–		
0	5	焊接	L	M	J	H	0	0	0.9	10	7.5	0.5	1.35	0.67	25	1.1	20	0.5		
					J	G	0			7.5	5.6	0.8	1.6	0.67	35	0.85	22	0.38		
		压接[3]	N	P	J	H	0			10	7.5	0.5	1.35	0.67	25	–	20–24	0.5–0.25		
					J	G	0									–	22–26	0.38–0.15		
		PCB直[4]	Q		J	0	0			7.5	5.6	0.8	1.6	0.67	35	0.7	–	–		
		PCB弯[4]						A								0.6	–	–		
0	6	焊接	L	M	F	G	0	0	0.7	7.5	5.6	0.65	1.35	0.67	33	0.85	22	0.38		
					F	D	0			6	4.5	0.85	1.6	0.67	36	0.65	26	0.15		
		压接[3]	N	P	F	G	0			7.5	5.6	0.65	1.35	0.67	33	–	22–26	0.38–0.15		
		PCB直[4]	Q		F	0	0			6	4.5	0.85	1.6	0.67	36	0.5	–	–		
		PCB弯[4]						A								0.6	–	–		
0	7	焊接	L	M	F	G	0	0	0.7	7.5	4.9	0.65	1.35	0.67	33	0.85	22	0.38		
					F	D	0			6	3.9	0.85	1.6	0.67	36	0.65	26	0.15		
		压接[3]	N	P	F	G	0			7.5	4.9	0.65	1.35	0.67	33	–	22–26	0.38–0.15		
		PCB直[4]	Q		F	0	0			6	3.9	0.85	1.6	0.67	36	0.5	–	–		
		PCB弯[4]						A								0.6	–	–		
0	8	焊接	L	M	F	G	0	0	0.7	7.5	4.9	0.4	1.2	0.67	10	0.85	22	0.38		
					F	D	0			6	3.9	0.6	1.6	0.67	32	0.65	26	0.15		
		压接[3]	N	P	F	G	0			7.5	4.9	0.4	1.2	0.67	10	–	22–26	0.38–0.15		
		PCB直[4]	Q		F	0	0			6	3.9	0.6	1.6	0.67	32	0.5	–	–		
		PCB弯[4]						A								0.6	–	–		
0	9	焊接	L	M	C	D	0	0	0.5	6	3.9	0.45	1.2	0.67	16	0.65	26	0.15		
					C	C	0			4	2.6	0.65	1.35		33	0.45	28	0.08		
		PCB直[4]	Q		C	0	0									0.5	–	–		
		PCB弯[4]						A								0.5	–	–		
1	0	焊接	L	M	C	D	0	0	0.5	6	3.3	0.3	0.75	0.67	7,5	0.65	26	0.15		
					C	C	0			4	2.2	0.5	1.35	0.67	25	0.45	28	0.08		
		PCB直[4]	Q		C	0	0									0.5	–	–		
		PCB弯[4]						A								0.5	–	–		
1	2[5]	焊接	L	M	C	D	9	0	0.5	6	3.3	0.4	1.2	0.67	10	0.65	26	0.15		
					C	C	9			4	2.2	0.5			25	0.45	28	0.08		
		PCB直[4]	Q		C	0	9									0.5	–	–		
		PCB弯[4]						A								0.5	–	–		
1	4	焊接	L	M	C	D	0	0	0.5	6	3	0.3	0.75	0.67	7,5	0.65	26	0.15		
					C	C	0			4	2	0.5	1.2	0.67	25	0.45	28	0.08		
		PCB直[4]	Q		C	0	0									0.5	–	–		
		PCB弯[4]						A								0.5	–	–		

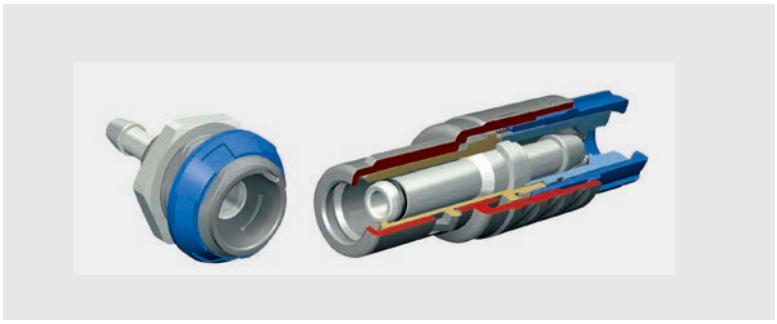
插孔安装在(非固定)插座中；插针安装在插头中。
针孔倒置的产品，需定制。

尺寸(1)

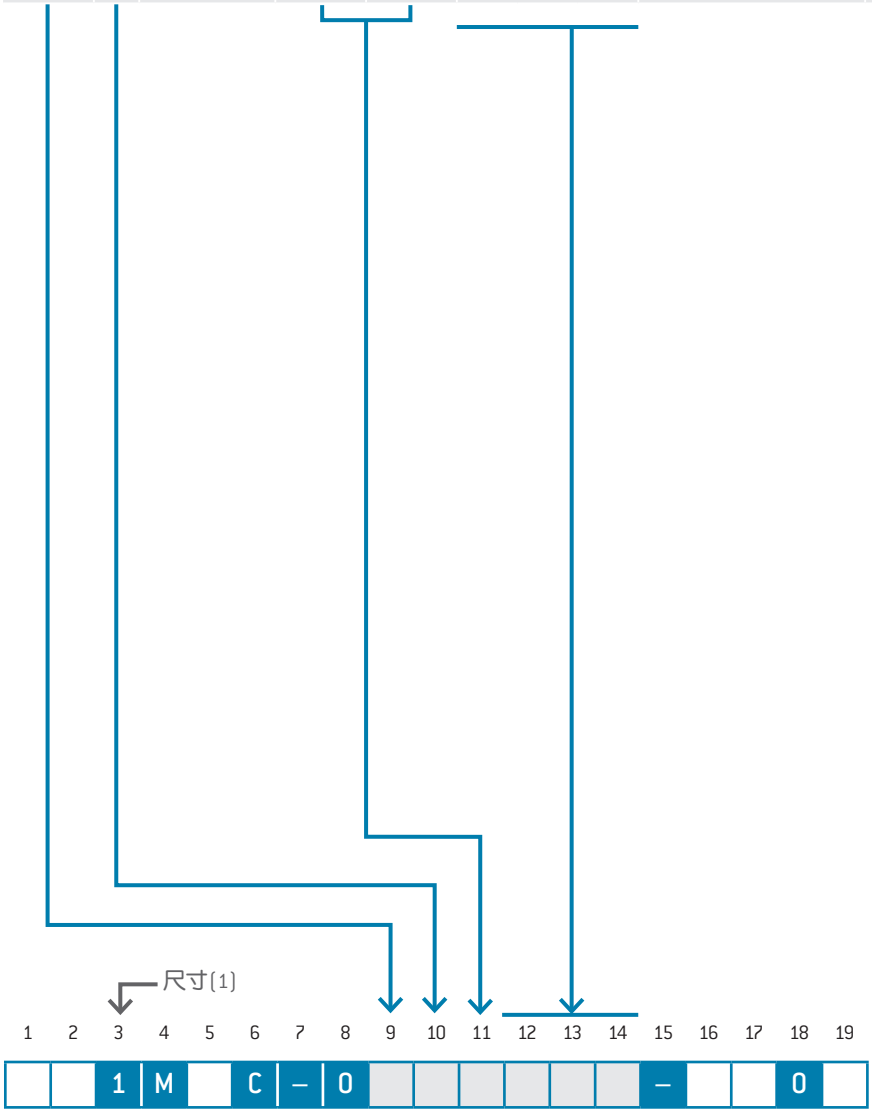
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–				

[1] 降级系数见122页
[2] 根据SAE AS 13441:2004 method 3001.1
[3] 压接工具和设置见108页
[4] PCB排布(见41页)；PCB接仅用于G5和G8插座
[5] 不与竞争对手产品兼容
[6] IEC 60664-1:2007 (VDE 0110-1:2008-01): 过电压类别III
[7] IEC 60664-1:2007 (VDE 0110-1:2008-01): 污染等级2
[8] 冲击电压

流体连接器



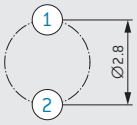
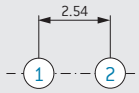
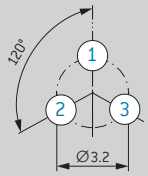
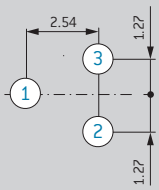
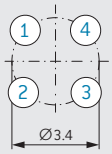
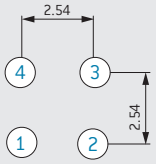
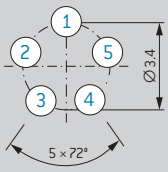
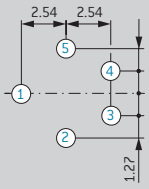
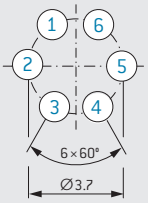
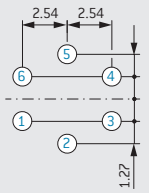
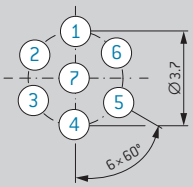
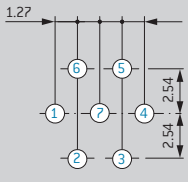
流体连接器	流道连通		针孔类型		插针直径/端接截面积			流道内径	最大工作压力	端接直径	最大气管外径
			插孔	插针				mm	bar	mm	mm
F	1	不闭合	B	S	1	1	0	2.5	2	4	6
	A	闭合	B	S	可定制[1]			1.9	2	4	6

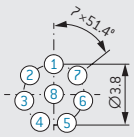
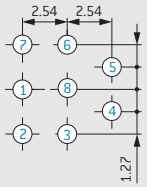
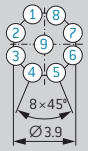
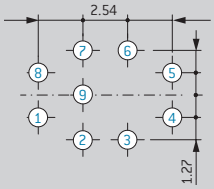
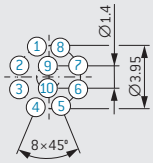
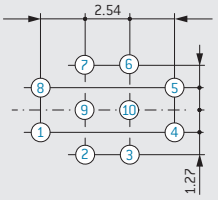
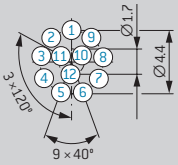
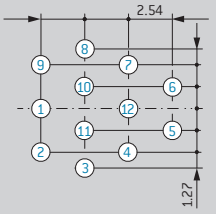
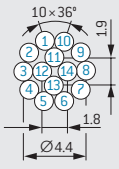
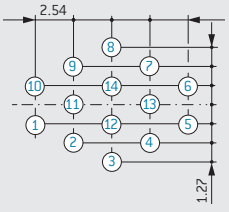


[1] 不与竞争对手产品兼容

PCB排布

PCB 车制插针 (1号尺寸)

	PCB直	PCB 90° 弯
2 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.9 mm 
3 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.9 mm 
4 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.7 mm 
5 芯	孔径: Ø 0.8 mm 	孔径: Ø 0.7 mm 
6 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
7 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 

	PCB直	PCB 90° 弯
8 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
9 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
10 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
12 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 
14 芯	孔径: Ø 0.6 mm 	孔径: Ø 0.7 mm 

所有规格仅适用于插孔。插针需定制。更多PCB排布需根据需求定制。

插座: PCB 弯角

A

弯角PCB插针

用于G5，GK

插针直径 mm	端接直径 mm
0.5	0.5
0.7	0.6
0.9	0.6
1.3	0.8

技术参数

- PCB排布见97页

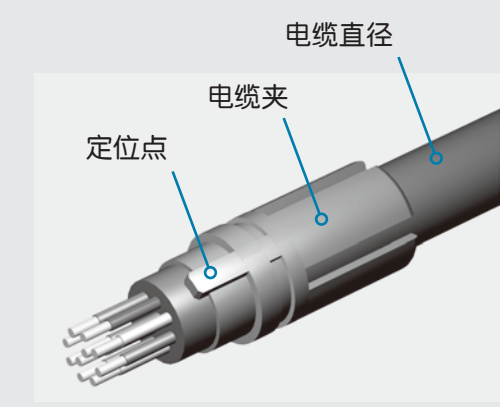
尺寸(1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–		0		

FOR YOUR NOTES

电缆夹

用于插头和非固定插座

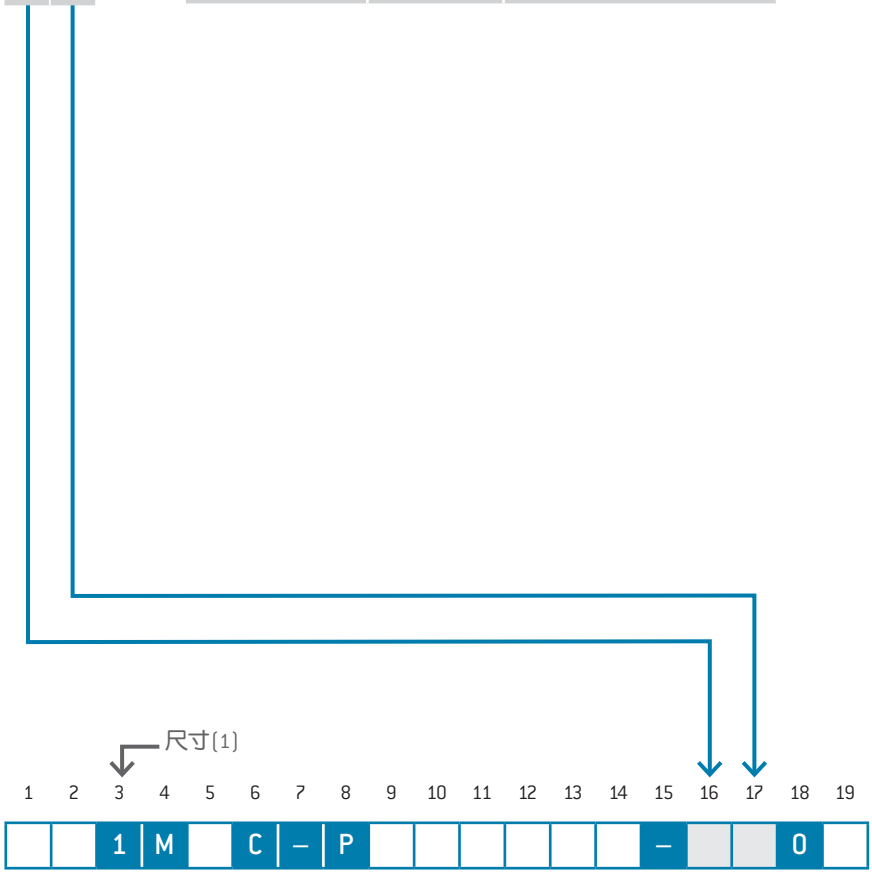


电缆直径 mm	材料	产品编号
> 2.7 – 3.9	PSU	KM1.020.121.934.007
> 4.0 – 5.2		KM1.020.122.934.007
> 5.3 – 6.5		KM1.020.123.934.007
> 2.7 – 3.9	PEI	KM1.020.121.933.008
> 4.0 – 5.2		KM1.020.122.933.008
> 5.3 – 6.5		KM1.020.123.933.008

应用于: 所有插头和非固定插座

用途: 应力释放

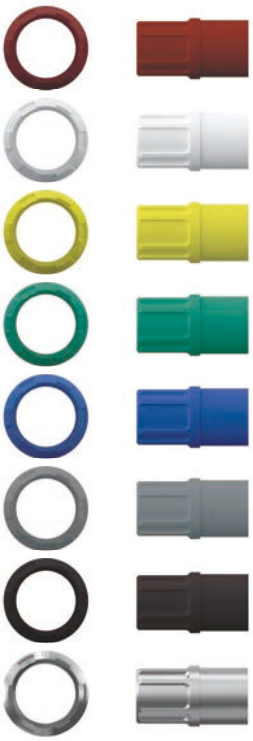
3	9
5	2
6	5



颜色定位

前螺母颜色定位仅适用于G5和GK插座。
螺帽颜色定位仅适用于S1直插头和K5非固定插座。
与金属螺帽组合时，颜色定位基于护套颜色。
编号 C（铜镀铬）适用于S2直插头和G1, GA插座。

	颜色	类似RAL色彩系统		材料
		设计体系	经典系列	
2	红	030 40 40	3002	塑料 (PSU)
3	白	000 90 00	9003	
4	黄	095 90 59	1016	
5	绿	170 60 50	6032	
6	蓝	250 40 40	5019	
7	灰	000 55 00	7045	
8	黑	000 25 00	9004	塑料 (PSU/PEI)
C	哑光铬	–	–	黄铜

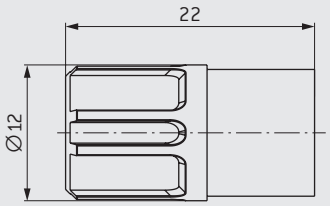


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–				

螺帽说明

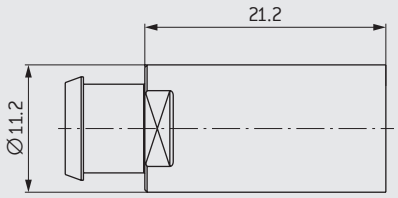
应用于所有直插头和非固定插座

标准螺帽



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.020.111.934.002	PSU	红	030 40 40	3002
KM1.020.111.934.003		白	000 90 00	9003
KM1.020.111.934.004		黄	095 90 59	1016
KM1.020.111.934.005		绿	170 60 50	6032
KM1.020.111.934.006		蓝	250 40 40	5019
KM1.020.111.934.007		灰	000 55 00	7045
KM1.020.111.933.008	PEI	黑	000 25 00	9004
KM1.020.111.315.000	黄铜	哑光铬	–	–

标准螺帽用于电缆护套[1]



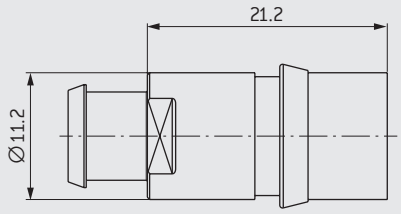
产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.020.113.934.007	PSU[2]	灰	000 55 00	7045
KM1.020.113.933.008	PEI	黑	000 25 00	9004
KM1.020.113.315.000	Brass	哑光铬	–	–

[1] 硅橡胶护套需单独订购(见104页) [2] 其他颜色需定制

螺帽说明

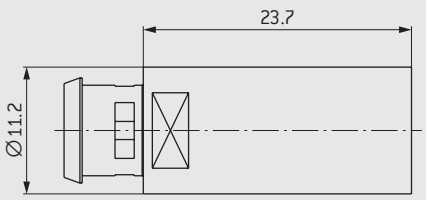
应用于所有直插头和非固定插座

标准螺帽用于可装护套的插头IP 64[1]



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.026.113.934.107	PSU[2]	灰	000 55 00	7045
KM1.026.113.933.108	PEI	黑	000 25 00	9004
KM1.026.113.315.000	黄铜	哑光铬	–	–

标准螺帽用于尾部注塑 可定制



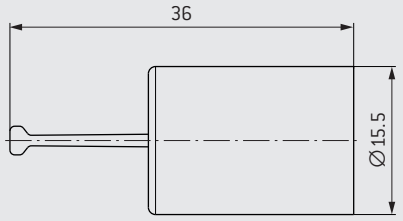
产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
KM1.020.114.934.007	PSU[2]	灰	000 55 00	7045
KM1.020.114.934.008		黑	000 25 00	9004
KM1.020.114.933.008	PEI	黑	000 25 00	9004

[1] 硅橡胶护套需单独订购(见104页) [2] 其他颜色需定制

运输保护帽

适用于所有直插头

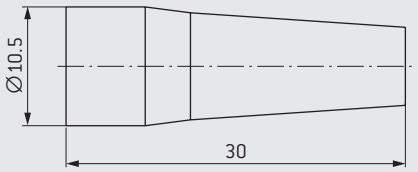
运输保护帽



产品编号	材料	颜色	类似RAL色彩系统	
			设计体系	经典系列
922.000.002.000.075	TPE	黄	095 90 59	1016

硅橡胶护套

硅橡胶护套，用于电缆应力释放



产品编号	电缆直径(Ø外径)	
	最小	最大
701.023.___.965.025	2.5	3
701.023.___.965.030	3	3.5
701.023.___.965.035	3.5	4
701.023.___.965.040	4	5
701.023.___.965.050	5	6
701.023.___.965.060	6	6.5

颜色代号	颜色	类似RAL色彩系统[1] 经典系列
202	红	3020
203	白	9010
204	黄	1016
205	绿	6032
206	蓝	5002
207	灰	7005
208	黑	9005

温度范围

硅橡胶：–50 °C 到 +200 °C，
短时间可达 +230 °C
适用于高温消毒

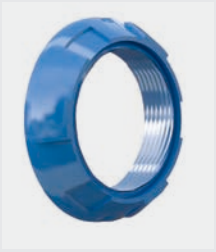
硅橡胶护套，必须单独订购

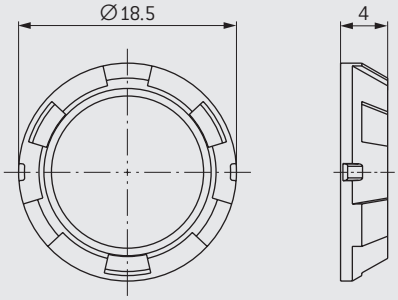
[1] 因为使用不同的基础材料，颜色可能与RAL色码有轻微略差

螺母

前螺母

用于G5插座

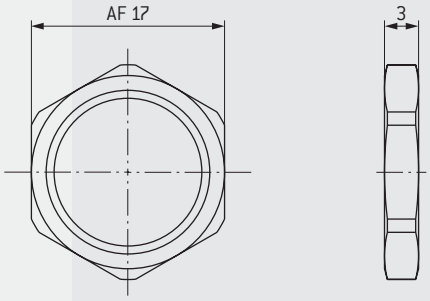




产品编号	材料	颜色	类似RAL色彩系统设计体系
KM1.311.002.934.002	PSU	红	030 40 40
KM1.311.002.934.003		白	000 90 00
KM1.311.002.934.004		黄	095 90 59
KM1.311.002.934.005		绿	170 60 50
KM1.311.002.934.006		蓝	250 40 40
KM1.311.002.934.007		灰	000 55 00
KM1.311.002.933.008	PEI	黑	000 25 00
KM1.311.003.315.000	黄铜	亚光铬	

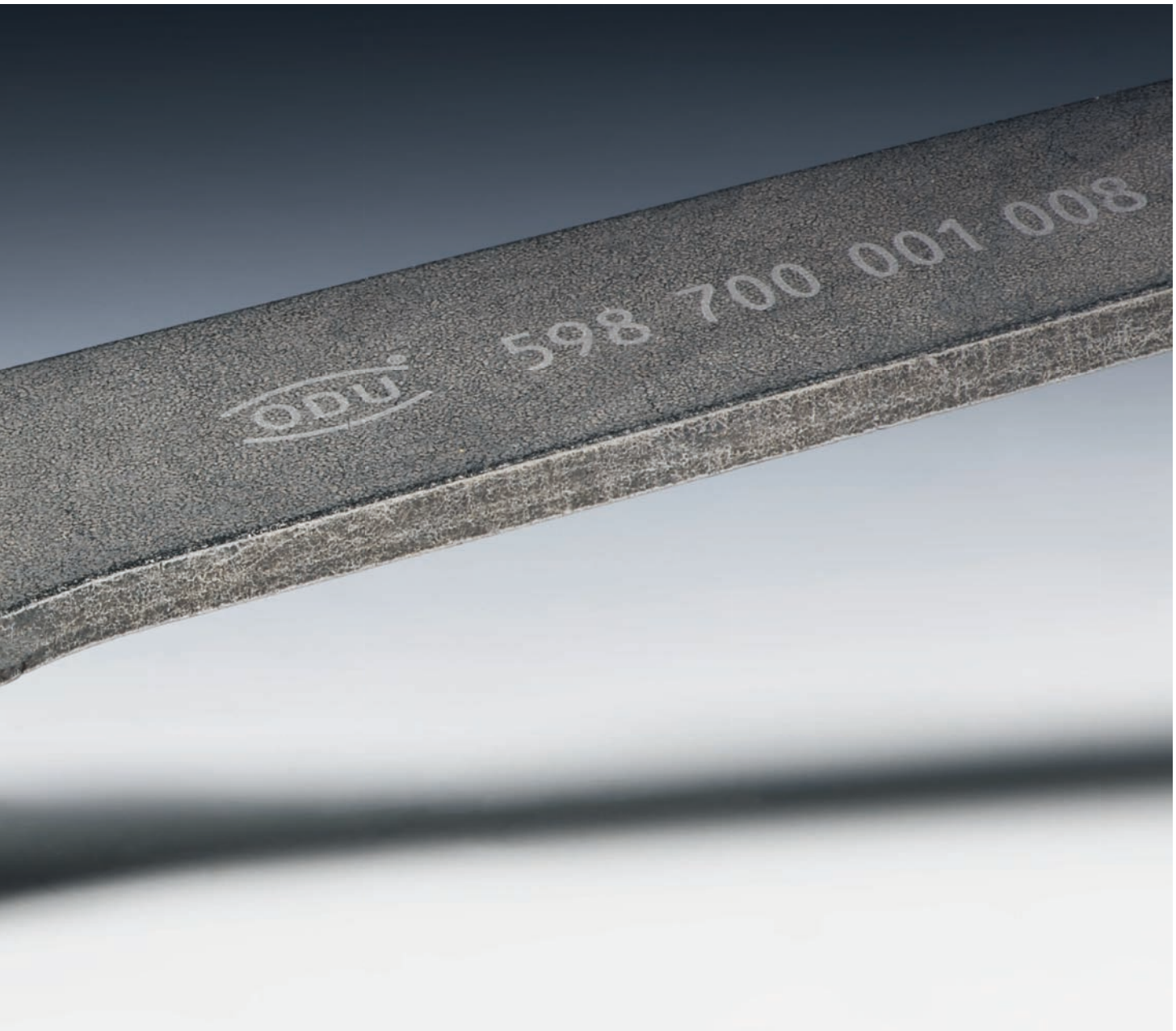
六角螺母

用于G1, G5, GA插座



产品编号	材料
021.310.115.304.000	黄铜镀镍

ODU MEDI-SNAP®



工具

本章内容包含工具和扳手使用介绍，以确保您正确安装使用欧度连接器并实现其完美性能。

压接工具/装配工具

压接工具产品编号
080.000.051.000.000

定位器编号，
见下表

压接针孔的加工工具
数字调节，多种定位

尺寸	芯数	插针直径	端接截面积		调节尺寸	定位器	定位设置		退针器
		mm	AWG	mm²	mm		插针	插孔	
1	6 to 8	0.7	24 – 26	0.25 – 0.15	0.67	080.000.051.109.000	9	3	087.7CC.070.001.000
			22 – 26	0.38 – 0.15	0.67	080.000.051.109.000	9	3	087.7CC.070.001.000
	4 to 5	0.9	22 – 26	0.38 – 0.15	0.67	080.000.051.109.000	8	2	087.7CC.090.001.000
			20 – 24	0.50 – 0.25	0.67	080.000.051.109.000	8	2	087.7CC.090.001.000

压接工具/装配工具

压接工具产品编号
080.000.037.000.000

定位器编号，
见下表

压接插针的加工工具

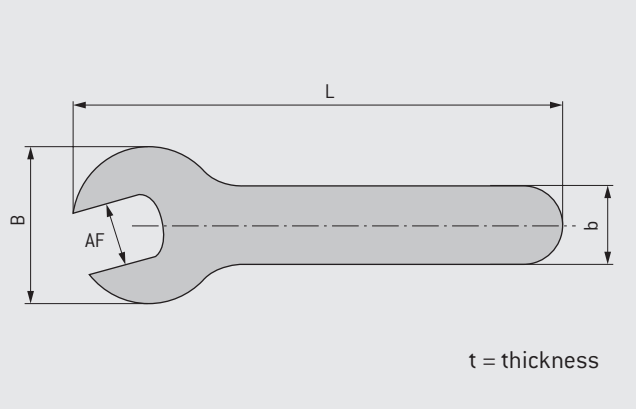
Mil认证，单种定位

尺寸	芯数	插针直径	端接截面积		定位器		定位设置		退针器
		mm	AWG	mm²	插针	插孔	插针	插孔	
1	6 to 8	0.7	22 – 26	0.38 – 0.15	081.KM1.001.948.037	081.KM1.001.948.037	4	4	087.7CC.070.001.000
		0.7	24 – 26	0.25 – 0.15	081.KM1.001.948.037	081.KM1.001.948.037	4	4	087.7CC.070.001.000
	4 to 5	0.9	20 – 24	0.50 – 0.25	081.704.001.849.037	081.KM1.001.949.037	7/6/5[1]	7/6/5[1]	087.7CC.090.001.000
		0.9	22 – 26	0.38 – 0.15	081.704.001.849.037	081.KM1.001.949.037	4	4	087.7CC.090.001.000

[1] 用于AWG 20定位7/用于AWG 22定位6/用于AWG 24定位5

扳手
1号尺寸

产品编号	单位 mm				
	AF	t	B	L	b
598.700.001.008.000	17	3	35.5	145	15

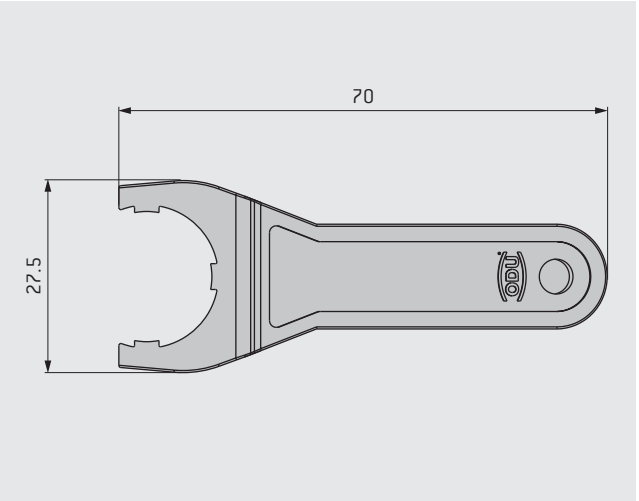


六角螺母插座旋紧扭矩(插座：G1/G4/G5/G6/GA)：1 Nm

扳手
2号尺寸

产品编号 KM2.098.002.923.008

用于G1，G4，G5插座的开槽螺母



六角螺母插座旋紧扭矩(插座：G1/G3/G5)：1 Nm

扳手套筒
用于插座前螺母

产品编号	尺寸	前螺母 材料
KM1.098.001.923.008	1	塑料
KM1.098.002.902.000	1	金属
KM2.098.001.923.008	2	塑料

退针器
用于压接卡扣针孔

压接卡扣插针

退针器

产品编号	插针 Ø mm
087.7CC.070.001.000	0.7
087.7CC.090.001.000	0.9

螺纹锁固胶备注 !

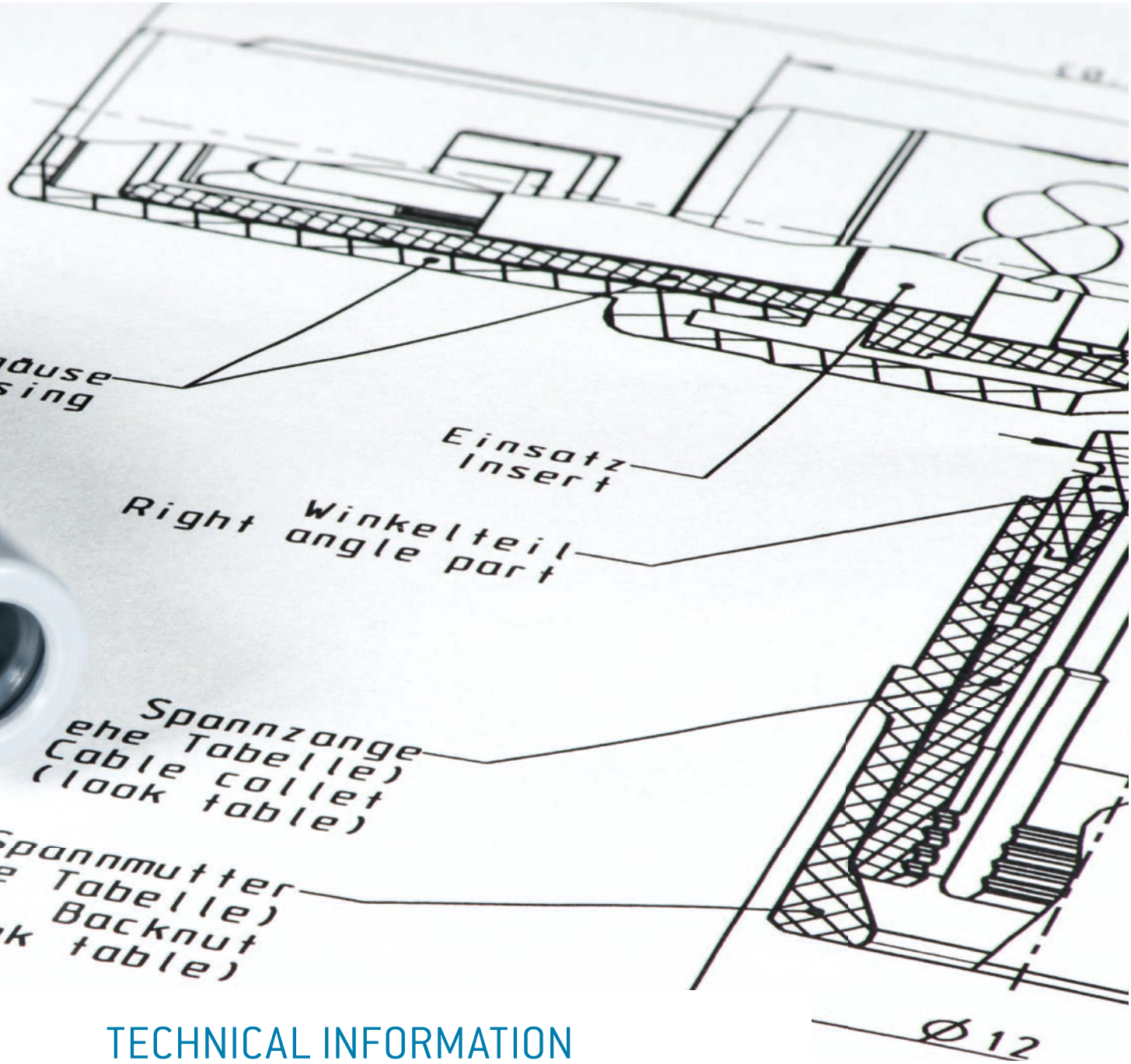
推荐螺纹锁固胶
Scotch-Weld™, DP 190 (灰色)
欧度产品编号：890.204.000.030.025

推荐清洁剂：异丙醇

谨慎！使用未经批准的螺纹锁固胶和清洗剂后可能会出现裂缝。

装配说明请访问我们的网站: www.odu-connectors.com/downloads/assembly-instructions

ODU MEDI-SNAP®



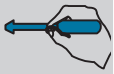
TECHNICAL INFORMATION

ODU connectors ensure perfect and reliable transmission of power, signal, data and other media in a wide variety of applications.

Further information can be found on the following pages.

INTERNATIONAL PROTECTION CLASSES

Acc. IEC 60529:2013 (VDE 0470-1:2014)

Code letters (International Protection) IP	First code number (Degrees of protection against access to hazardous parts respectively against solid foreign objects) 6			Second code number (Degrees of protection against water) 5			
Code number	Protection against access to hazardous parts / Protection against ingress of solid foreign objects			Code number	Protection against harmful effects due to the ingress of water		
0	No protection		No protection against contact / No protection against solid foreign objects	0	No protection against water		No protection against water
1	Protection against large foreign objects		Protection against contact with the back of the hand / Protection against solid foreign objects Ø ≥ 50 mm	1	Protection against dripping water		Protection against vertically falling waterdrops
2	Protection against medium-sized foreign objects		Protection against contact with the fingers / Protection against solid foreign objects Ø ≥ 12.5 mm	2	Protection against angular dripping water (from angles)		Protection against waterdrops falling at an angle (any angle up to 15° of the vertical)
3	Protection against small foreign objects		Protection against contact with tools / Protection against solid foreign objects Ø ≥ 2.5 mm	3	Protection against spray water		Protection against spray water (any angle up to 60° of the vertical)
4	Protection against granular foreign objects		Protection against contact with a wire / Protection against solid foreign objects Ø ≥ 1.0 mm	4	Protection against splashing water		Protection against splashing water from any direction
5	Dustproof		Protection against contact with a wire / Protection against uncontrolled ingress of dust	5	Protection against water jet		Protection against water jet from any direction
6	Dustproof		Protection against contact with a wire / Complete protection against ingress of dust	6	Protection against powerful water jet		Protection against powerful water jet from all directions
				7	Protection against the effects of temporary immersion in water		Protection against ingress of water negatively impacting the proper function by temporary submersion into water
				8	Protection against the effects of continuous immersion in water		Protection against ingress of quantities of water negatively impacting the proper function by continuous submersion into water
				9	Protection against high pressure water jet featuring high temperatures		Protection against water from all directions characterized by high pressure and high temperatures

EXPLANATIONS AND DETAILS OF SAFETY REQUIREMENTS, INSPECTIONS, AND VOLTAGE DATA

GENERAL

All the technical information listed in this catalog and the data sheets has been determined by drawing on various standards. Unless otherwise stated, standard IEC 61984:2008 (VDE 0627:2009-11) "Connectors – Safety requirements and tests" has been used to dimension and determine the values provided.

This international standard applies to connectors (with rated voltages of 50 V to 1,000 V alternating and direct, and rated currents of up to 125 A per contact) which either have no type specification or which have a type specification whose safety requirements refer to this standard. The standard can be used as a guide for connectors with rated voltages up to 50 V. In cases such as this, IEC 60664-1:2007 must be consulted when dimensioning the clearance and creepage distances. This standard can also serve as a guide for connectors with rated currents higher than 125 A per pole.

All the connectors shown here are connectors without breaking capacity (COC) according to IEC 61984:2008 (VDE 0627:2009-11).

All of the voltage data listed in this catalog applies when ODU MEDI-SNAP® connectors and inserts are being used properly. Customer-specific attachments, which could reduce the clearance and creepage distances, have not been taken into account here.

The clearance and creepage distances are determined on the bases specified in IEC 60664-1:2007 (VDE 0110-1:2008-01).

The most important influence variables and the electrical parameters harmonized with these will be explained in more detail in the following. We would be happy to assist you with any further questions. The texts and tables given here are excerpts from the indicated standards. As a rule, product committees lay down application-specific safety requirements for various fields of use; these requirements also regulate the insulation coordination and inspection of connectors.

In such cases, the "product standards" which apply to your applications take precedence and must be observed instead of the "basic safety standards" stated here. However, since this catalog and the technical data sheets cannot take all product standards into consideration, we have restricted ourselves to the following standard in terms of voltage data:

IEC 60664-1:2007 (VDE 0110-1:2008-01) "INSULATION COORDINATION FOR EQUIPMENT WITHIN LOW-VOLTAGE SYSTEMS"

This is what is known as a **basic safety standard**, which regulates the minimum requirements for dimensioning clearance and creepage distances, as well as their inspection. The standard applies to equipment used up to an altitude of 2,000 m above sea level and with a rated alternating voltage of up to 1,000 V and a nominal frequency of up to 30 kHz or a rated direct voltage of up to 1,500 V. The correction factors stated in the standard must be taken into account for applications at altitudes over 2,000 m above sea level.
The standard applies in those cases where corresponding product standards do not define any values for clearance and creepage distances, nor lay down any requirements for solid insulation, or where no product standards are even available.

The following general specifications have been defined for dimensioning:

- **Isolation** between electrical circuits (functional insulation between the contacts) or between an electrical circuit and local ground (contact with grounded connector components) has been dimensioned as **basic insulation**. If "**double insulation**" or "**reinforced insulation**" is required in your application, the voltage data provided will no longer apply; insulating clearances will need to be extended. The standard describes the procedure to follow in this case.
- Condition A is always used for the inhomogeneous field when dimensioning the clearance distances used.
- The inspections prescribed for solid insulation and for clearance distances (if necessary) are conducted as alternating voltage inspections according to Table F.5.
- The clearance and creepage distances are determined on the bases specified in this standard.

OPERATING VOLTAGE / RATED VOLTAGE / NOMINAL VOLTAGE

The **max. operating voltage** (= rated voltage) is the value of a voltage that is specified by the manufacturer for a component, device, or item of equipment according to various applicable standards, and to which the operating and performance features relate. Some standards use the term "rated voltage" or "working voltage" instead of "operating voltage".

EXPLANATIONS AND DETAILS OF SAFETY REQUIREMENTS, INSPECTIONS, AND VOLTAGE DATA

In these explanations, the term "nominal voltage" is used for the value of the issued voltage indicated by the power supply company (PSC) or by the manufacturer of the voltage source for classification of the overvoltage category.

Equipment may have more than one value or one range for rated voltage (see Table F.4 in IEC 60664-1:2007 (VDE 0110-1:2008-01)).

RATED SURGE VOLTAGE

Value of an impulse withstand voltage that is indicated by the manufacturer for equipment or a part thereof, and which indicates the defined endurance of its insulation against transient (brief, duration of a few milliseconds) overvoltages. The impulse withstand voltage is the highest value of the surge voltage of a defined form and polarity which will not result in the dielectric breakdown of the insulation under defined conditions.

Depending upon the indicated pollution degree, the rated surge voltage depends upon the clearance distance between the individual contacts or contacts to the housing (see Table F.2 in IEC 60664-1:2007 (VDE 0110-1:2008-01)). You can determine the corresponding rated surge voltages for our connectors in this way if you need to take account of loads with transient overvoltages in your application.

According to this standard, the minimum clearance distances for equipment not connected directly to the low voltage mains should be measured according to the possible continuous voltages, the temporary overvoltages, or periodic peak voltages (see Table F.7 in IEC 60664-1:2007 (VDE 0110-1:2008-01)).

If a "periodic peak voltage" is present for a long time over the service life (more than approximately 60 minutes), this is not an overvoltage as regards insulation dimensioning under the terms of the standard, but must be considered a continuous voltage instead. In such cases, the "periodic peak voltage" must be used as the operating voltage.

POLLUTION DEGREE

Potentially occurring pollution combined with moisture can influence the insulation capacity on the surface of the connector.

In order to define various rating parameters, a pollution degree must be selected for the equipment according to the criteria listed below.

In the case of a connector with a degree of protection of minimum IP54 IEC 60529:2013 (VDE 0470-1:2014-09), the insulating parts may be measured enclosed according to the standard for a low pollution degree. This also applies for mated connectors for which enclosure is ensured by the connector housing and which are only disconnected for inspection and maintenance purposes.

Pollution degree 1
No or only dry, non-conductive pollution is present. The pollution has no influence. For example, computer systems and measuring instruments in clean, dry, or air-conditioned rooms.

Pollution degree 2
(= standard, if no specific pollution degree is indicated)
Only non-conductive pollution is present. However, temporary conductivity due to condensation must be anticipated. For example, devices in laboratories, residential, sales, and other business areas.

Pollution degree 3
Conductive pollution is present or dry, non-conductive pollution that will become conductive because condensation is expected. For example, devices in industrial, commercial, and agricultural operations, unheated storage areas, and workshops.

Pollution degree 4
Permanent conductivity is present, caused by conductive dust, rain, or moisture. For example, devices in the open air or outdoor facilities and construction machinery. Operating voltage (VDE: rated voltage): Value of a voltage that is specified by the manufacturer for a component, device, or item of equipment and relates to the operating and performance features.

Depending upon the indicated pollution degree, the rated voltage is dependent upon the insulating material group of the connector and the respective creepage distances between the individual contacts.

EXPLANATIONS AND DETAILS OF SAFETY REQUIREMENTS, INSPECTIONS, AND VOLTAGE DATA

CLEARANCE DISTANCE

The shortest distance in the air between two conductive parts.

CREEPAGE DISTANCE

The shortest distance between two conductive parts over the surface of an insulation material. The creepage distance is influenced by the pollution degree applied.

TEST VOLTAGES

The dielectric withstanding voltage of the connector is confirmed according to the standard corresponding to the indicated rated surge voltage by applying the test voltage according to Table F.5 over a defined time range.

IEC 60664-1:2007 (VDE 0110-1:2008-01): Table F.5 – test voltages for testing clearance distances at different altitudes (the voltage levels are valid only to verify the clearance distances)

Rated surge voltage û kV	Test surge voltage at sea level û kV	Test surge voltage at 200 m elevation û kV	Test surge voltage at 500 m elevation û kV
0.33	0.357	0.355	0.350
0.5	0.541	0.537	0.531
0.8	0.934	0.920	0.899
1.5	1.751	1.725	1.685
2.5	2.920	2.874	2.808
4	4.923	4.874	4.675
6	7.385	7.236	7.013
8	9.847	9.648	9.350
12	14.770	14.471	14.025

VOLTAGE DATA ACCORDING TO “IEC”

OPERATING VOLTAGE (RATED VOLTAGE)

The values stated in the catalog for rated voltage have been determined according to IEC 60664-1:2007 (VDE 0110-1:2008-01). The values in the table are achieved under these framework conditions:

- Pollution degree 2
- PEEK insulator material (insulating material group III)
- Basic insulation

If your application requires double or reinforced insulation, the rated voltages will be lower.
Applicable product standards and basic safety standards must be observed.

According to DIN VDE 0100-410:2018-10, two independent protective measures must be combined to create appropriate safety precautions against electric shock: one basic protective measure and one fault protective measure.
For applications which do not run with a safety extra-low voltage (SELV), i.e., for voltages > 50 V AC and > 120 V DC, another protective measure is required according to IEC 60364-4-41:2005 + A1:2017 (DIN VDE 0100-410:2018-10). The standard describes in more detail which protective measures are suitable and permitted.

VOLTAGE DATA ACCORDING TO “MIL”

Acc. SAE AS 13441:2004 method 3001.1

The values specified in the catalog correspond to SAE AS 13441:2004 method 3001.1. The table values were determined according to EIA 364-20F:2019. The inserts were tested while mated, and the test current was applied to the pin insert.

75 % of the dielectric withstanding voltage is used for the further calculation. The operating voltage is 1/3 of this value.

All tests were conducted at normal indoor climate and apply up to an altitude of 2,000 m. If there are any deviations, the reduction factors are to be factored in according to the applicable standards.
Test voltage: Dielectric withstanding voltage × 0.75
Operating voltage: Dielectric withstanding voltage × 0.75 × 0.33

CAUTION:
For operating voltages above 50 V AC / 120 V DC (SELV), life is in danger!

Subsequently explained procedure according SAE AS 13441:2004 method 3001.1 does not consider protection against electric shock. Suitable precautions (protective measures) such as touch protection, protective insulation, protective separation, protective earth conductor etc. must be taken.
In the case that other standards rule a specific use of the connector, the application specific safety criteria shall be considered first. This must be evaluated in the frame of equipment engineering.

For any advise on how to choose the proper connector please consult us and indicate the safety standard which your product has to meet.

Test voltage: Dielectric withstanding voltage × 0.75
Operating voltage: Dielectric withstanding voltage × 0.75 × 0.33

HOUSING MATERIALS / SURFACES

Component	Material designation	Surface
Housing	PSU[1] / PEI[1] / Brass	Chrome (metal version)
Back nut Cable collet Front nut Mounting nut	PSU[1] / PEI[1]	
Insulator	PEEK / PBT	
Hex nut	Brass	Ni
Contacts	Brass	Au

INSULATOR MATERIALS (ROHS 2011/65/EU COMPLIANT)

	Norm	Unit	PSU	PEI	PEEK	PBT
Flammability rating	UL 94		V –0 / 4.5	V –0 / 0.41	V –0 / 1.5	V –0 / 1.5
Operation temperature		C	–50 to +170°	–50 to +170°	–50 to +250°	–50 to +180°
Dielectric strength	IEC 60243-1:2013 (VDE 0303-21:2014-01)	kV/mm	17	27/1.6 (in oil)	19	27
Comparative figure of the creep resistance CTI	IEC 60112: 2009 (VDE 0303-11:2010-05)		150	150	175	600
Water absorption	ASTM D 570:1998 / ISO 62:2008-02	%	0.3	0.25	0.1	0.3
Sterilization (autoclaving)	DIN EN 13060:2019-02	Quantity	~ 20	> 200	> 200	
Insulation resistance	IEC 60512-3-1:2002 (DIN EN 60512-3-1:2003-01)	Ω			> 1 × 10^{12} Ω	> 1 × 10^{12} Ω

All values in the new condition

NOTE ON ADHESIVE

Recommended adhesive for the back nut
Scotch-Weld™, DP 190 (Gray)
ODU PART NUMBER: 890.204.000.030.025

Recommended cleaning agent: Isopropyl alcohol

Caution! Cracks may later appear with the use of unauthorized adhesives and cleaning agents.

[1] Corresponding to the version, either the material PSU or PEI is used for all plastic component parts (except insulator) of a complete plug, in-line receptacle or receptacle.

TERMINATION TECHNOLOGIES

In general, insulators with socket contacts are installed in the live part (to provide protection from accidental touch). The means of mounting the contacts in the insulator is important on account of the termination technologies. Termination technologies for ODU MEDI-SNAP® connectors include: soldering, crimping and PCB.

SOLDER TERMINATION

CRIMP-CLIP-CONTACT FOR PEEK INSULATOR

PRINT TERMINATION

TERMINATION TECHNOLOGIES FOR TURNED CONTACTS

Solder termination

The contacts are mounted in the insulator before the single connectors are assembled.
An insulator with pre-installed contacts is referred to as a contact insert.

Crimp termination

Here, the individual contact is connected to the individual wires via deformation in the termination area. Then the contacts are individually installed in the insulator. Accordingly, insulators and individual contacts – and not complete contact inserts – are supplied for the crimp termination. The contact processing for the production of connecting cables via crimping creates a secure, durable and corrosion-free contact. Cold compaction (crimping) compresses the conductor and contact material to the press points so as to form a gas-tight connection with tensile strength to fit the conductor material. 8-point deformation is generally used for turned crimp contacts.

PCB termination

This is only used in the receptacle if the receptacle is to be mounted directly on a printed circuit board (PCB). Further information is available upon request.

CONVERSIONS/AWG (AMERICAN WIRE GAUGE)

Circular wire					
AWG	Diameter		Cross-section	Weight	Max. resistance
	Inch	mm	mm^2	kg/km	Ω/km
10 (1)	0.1019	2.590	5.26	46.77	3.45
10 (37/26)	0.1150	2.921	4.74	42.10	4.13
12 (1)	0.0808	2.050	3.31	29.41	5.45
12 (19/25)	0.0930	2.362	3.08	27.36	6.14
12 (37/28)	0.0910	2.311	2.97	26.45	6.36
14 (1)	0.0641	1.630	2.08	18.51	8.79
14 (19/27)	0.0730	1.854	1.94	17.23	9.94
14 (37/30)	0.0735	1.867	2.08	18.870	10.50
16 (1)	0.0508	1.290	1.31	11.625	13.94
16 (19/29)	0.0590	1.499	1.23	10.928	15.70
18 (1)	0.0403	1.020	0.823	7.316	22.18
18 (19/30)	0.0052	1.321	0.963	8.564	20.40
20 (1)	0.0320	0.813	0.519	4.613	35.10
20 (7/28)	0.0390	0.991	0.563	5.003	34.10
20 (19/32)	0.0420	1.067	0,616	5.473	32.00
22 (1)	0.0253	0.643	0,324	2.883	57.70
22 (7/30)	0.0288	0.732	0,324	2.965	54.80
22 (19/34)	0.0330	0.838	0.382	3.395	51.80
24 (1)	0.0201	0.511	0.205	1.820	91.20
24 (7/32)	0.0250	0.635	0.227	2.016	86.00
24 (19/36)	0.0270	0.686	0.241	2.145	83.30
26 (1)	0.0159	0.404	0.128	1.139	147.00
26 (7/34)	0.0200	0.508	0.141	1.251	140.00
26 (19/38)	0.0220	0.559	0.154	1,370	131.00
28 (1)	0.0126	0.320	0.0804	0.715	231.00
28 (7/36)	0.0160	0.406	0.0889	0.790	224.00
28 (19/40)	0.0170	0.432	0.0925	0.823	207.00
30 (1)	0.0100	0.254	0.0507	0.450	374.00
30 (7/38)	0.0130	0.330	0.0568	0.505	354.00
30 (19/42)	0.0123	0.312	0.0720	0.622	310.00
32 (1)	0.0080	0.203	0.0324	0.288	561.00
32 (7/40)	0.0110	0.279	0.0341	0.303	597.10
32 (19/44)	0.0100	0.254	0.0440	0.356	492.00
34 (1)	0.0063	0.160	0.0201	0.179	951.00
34 (7/42)	0.0070	0.180	0.0222	0.197	1,491.00
36 (1)	0.0050	0.127	0.0127	0.1126	1,519.00
36 (7/44)	0.0060	0.150	0.0142	0.1263	1,322.00

The American Wire Gauge (AWG) is based on the principle that the cross-section of the wire changes by 26 % from one gauge number to the next. The AWG numbers decrease as the wire diameter increases, while the AWG numbers increase as the wire diameter decreases. This only applies to solid wire.

However, stranded wire is predominately used in practice. This has the advantage of a longer service life under bending and vibration as well as greater flexibility in comparison with solid wire.

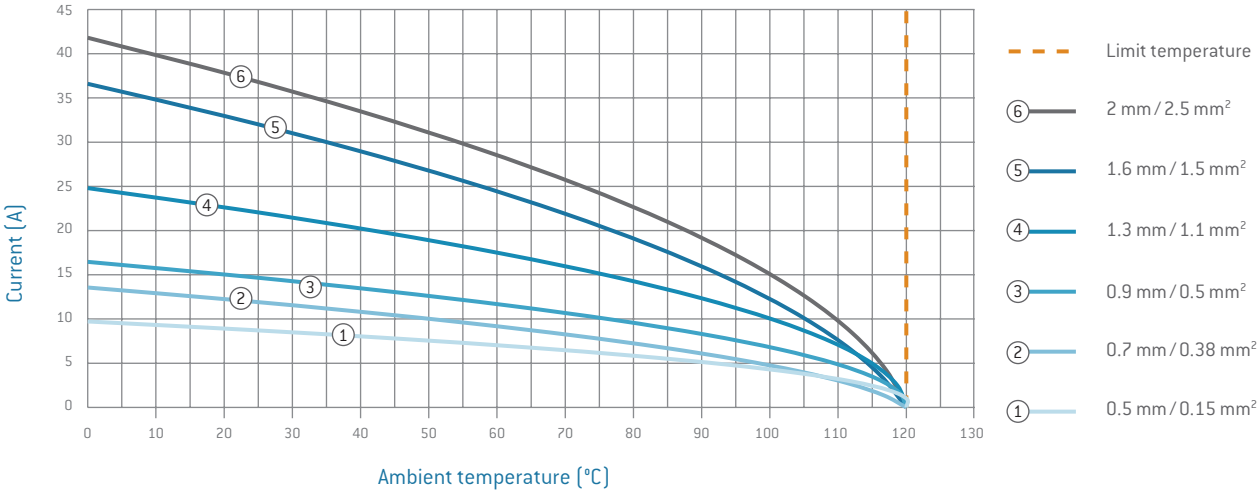
Stranded wires are made of multiple, smaller-gauge wires (higher AWG number). The stranded wire then receives the AWG numbers of a solid wire with the next closest cross-section to that of the stranded wire. In this case, the cross-section of the stranded wire refers to the sum of the copper cross-sections of the individual wires.

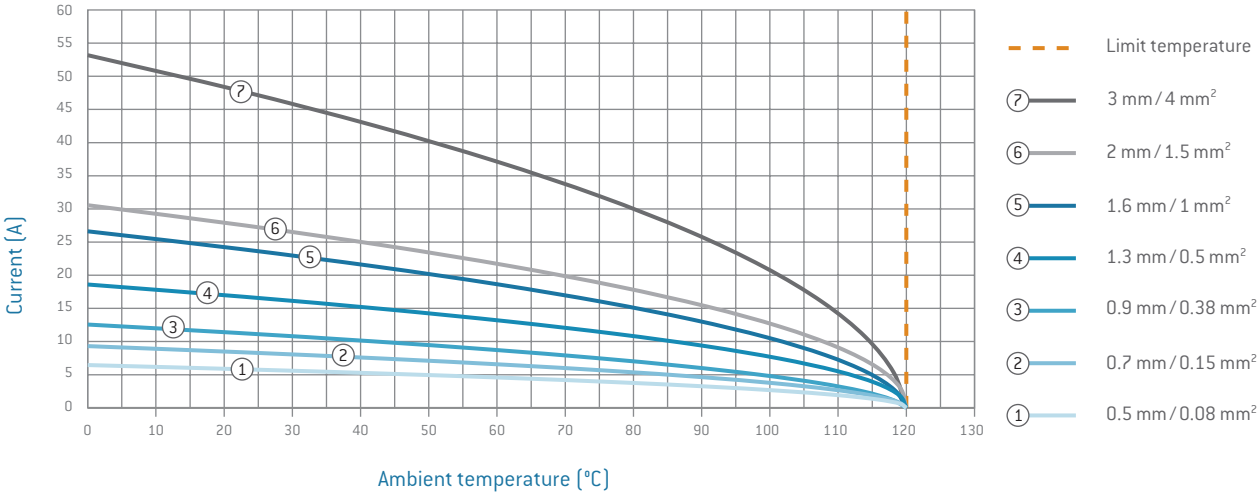
Accordingly, strands with the same AWG number but different numbers of wires differ in cross-section. For instance, an AWG 20 strand of 7 AWG 28 wires has a cross-section of 0.563 mm^2, while an AWG 20 strand of 19 AWG 32 wires has a cross-section of 0.616 mm^2.

Source: ASTM

CURRENT LOAD OF TURNED CONTACTS

Nominal single contact current load for pin / slotted socket (nominal diameter 0.5 mm – 2 mm)





UPPER LIMIT TEMPERATURE OF STANDARD CONTACTS: +120 °C

The wire cross-section shown in the legend was connected as test cable. In the case of multi-position connectors and cables, the heating is greater than it is with individual contacts. For that reason, it is calculated with a reduction factor.
For connectors, the reduction factors for multi-core cables pursuant to VDE 0298-4:2013 are applied. The reduction factor is factored in at 5 live wires and up.

DERATING CURVE

The corrected current-carrying capacity curve, derived from the base curve determined (0.8 x measured current). It factors in manufacturing tolerances as well as uncertainties in temperature measurement and measurement arrangement, see derating measurement method.

RATED CURRENT (NOMINAL CURRENT)

The metrologically determined current which is permitted to flow continuously through all contacts at the same time and will increase the contact temperature by 45 Kelvin.
The amperage is determined according to the derating measurement method (IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003-01)) and derived from the derating curve.

DERATING FACTOR

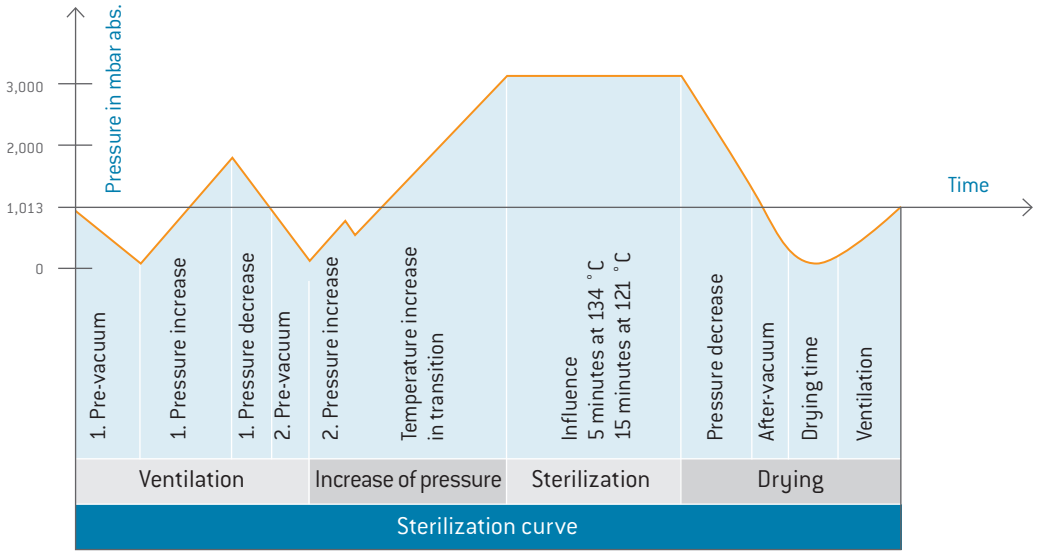
Number of loaded wires	Derating factor
5	0.75
7	0.65
10	0.55
14	0.5
19	0.45
24	0.4

AUTOCLAVING OF ODU MEDI-SNAP®

The ODU MEDI-SNAP® connectors are also available for the following sterilization processes:
Steam sterilization with pre-vacuum or gravitation process. The connectors are tested with autoclave equipment in accordance with DIN EN 13060:2019-02 at 134 °C and 200 cycles (housing elements made of PEI).

With PSU housing 20 autoclave cycles. With PEI housing 200 autoclave cycles.
For other sterilization processes like Sterrad / ETO and Gamma, please contact the appropriate indoor service.

Sterilization curve



TECHNICAL TERMS

AMBIENT TEMPERATURE

Temperature of the air or other medium in which a piece of equipment is intended to be used. (IEC 44/709/CDV:2014 (VDE 0113-1:2019-06).

AUTOCLAVABILITY

See page 123

AWG

American Wire Gauge – see page 121

BASE CURVE

A current-carrying capacity curve metrologically determined according to the method described in IEC 60512-5-2:2002 (DIN EN 60512-3-1:2003-01) depending on the permissible limit temperature of the materials.

CHEMICAL RESISTANCE

Many secondary processing procedures use adhesives, cleaning agents or other chemicals on our products. Contact with unsuitable chemicals may have an adverse effect on the mechanical and electrical properties of the insulation and housing materials which specified properties may not be able to withstand. Please observe our processing suggestions and technical instructions in this catalog.

CLEARANCE DISTANCE

The shortest distance in the air between two conductive parts.

CONNECTORS

Also known as connectors without breaking capacity (COC): (IEC 61984:2008 (VDE 0627:2009-11). An element which enables electrical conductors to be connected and is intended to create and/or separate connections with a suitable counterpart.

CONNECTOR WITHOUT BREAKING CAPACITY (COC)

Connector which is not deemed to be engaged or disengaged in normal use when live under load.

CONTACT RESISTANCE

Total resistance value measured from terminal to terminal. In this case, the resistance is significantly lower than the contact resistance. The specifications are average values.

CORES

Electrical conductor, solid wire or multi-wire strand, with insulation as well as any conductive layers. Cables or leads may have one or more cores.

CREEPAGE DISTANCES

The shortest distance between two conductive parts along the surface of a solid insulation material. This factors in all elevations and recesses in the insulator, as long as defined minimum dimensions are on hand.

CRIMP BARREL

A terminal sleeve which can accommodate one or more conductors and be crimped by a crimping tool.

CRIMP CONNECTION (CRIMP TERMINATION)

The permanent, non-detachable and solder-free mounting of a contact to a conductor via deforming or shaping under pressure to make a good electrical and mechanical connection. Executed with crimping tool, press or automatic crimping machine (see page 108).

CRIMPING AREA

The specified area of the crimp barrel in which the crimp termination is executed by means of deforming or shaping the barrel under pressure around the conductor.

DEGREE OF POLLUTION

The effect of pollution is factored in as degree of pollution when measuring clearance and creepage distances. Four degrees of pollution are defined for the micro-environment: IEC 60664-1:2007 (VDE 0110-1:2008-01).

DELIVERY FORM

Connectors can be delivered in assembled form or as individual parts.

DERATING FACTOR

According to VDE 0298-4:2013-06, with connectors and cables over 5 contacts, the heating is greater than it is with individual contacts. For that reason, the aforementioned standard is calculated with a reduction factor.

DERATING CURVE

See page 122

TECHNICAL TERMS

DERATING MEASUREMENT METHOD IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003-01)

Measurement method to determine the current carrying capacity of connectors in consideration of the maximum permissible limit temperature (see page 122).

FIXED CONNECTORS

Intended for mounting on a fixed surface such as a frame, dock, device or wall (with ODU also receptacle or panel-mounted plug).

FREE CONNECTORS

Intended for mounting on free ends of mobile leads and cables (with ODU also connectors, plugs, in-line receptacles).

INSULATOR

Part of a connector which separates conductive parts with different potentials from one another; usually identical to the contact carrier.

CODING (ORIENTATION)

Arrangement with which differing polarization of otherwise identical connectors prevents interchangeability. This is a good idea if two or more identical connectors are attached to the same device (see also compatible connectors, see pages 37, 68, 94).

LOWERMOST LIMIT TEMPERATURE

The lowest permissible temperature at which a connector may be operated. At ODU MEDI-SNAP®, it amounts to –50 °C.

MATERIALS (STANDARD DESIGN)

See page 119

MATING AND UNMATING FORCE

The force required to fully insert or withdraw pluggable elements without the influence of a coupling or locking device.

MATING CYCLES

Mechanical actuation of connectors and plug devices via push and pull action: A mating cycle consists of one insertion and withdrawal action. The default value for the ODU MEDI-SNAP® push-pull connectors is 2,000 mating cycles, for the break-away plugs it is up to 5,000 mating cycles.

MAX. CONTINUOUS CURRENT

The metrologically determined amperage at room temperature (approx. 20 °C) which increases the contact temperature to the limit temperature. The values specified in the catalog apply to either individual contacts or completely assembled inserts/modules, as indicated.

NOMINAL SINGLE CONTACT CURRENT LOAD

The current-carrying capacity which each individual contact can be loaded with on its own (see page 122).

NOMINAL VOLTAGE

The voltage which the manufacturer specifies for a connector and relates to the operating and performance features.

OPERATING TEMPERATURE FOR ODU MEDI-SNAP®

Range between the uppermost and lowermost temperature limits. –50 °C to +120 °C (see page 15).

OPERATING VOLTAGE

The nominal voltage of the power source for which the connector is being used. The operating voltage may not be higher than the nominal voltage of the connector.

PCB (A.K.A. "PRINTED CIRCUIT BOARD")

A PCB is a carrier for electronic components. It serves the purposes of mechanical mounting and electrical connection.

PCB TERMINATION

Production of a conductive connection between the PCB and an element in through-hole assembly, THT (through-hole technology).

RATED CURRENT (NOMINAL CURRENT)

See page 122

RATED VOLTAGE

According to IEC 60664-1:2007 (VDE 0110-1:2008-01) standard "Value of a voltage which is specified by the manufacturer for a component, device or operating medium and relates to the operating and performance features."

TECHNICAL TERMS

SOLDER CONNECTION (SOLDER TERMINATION)

Termination technology in which a molten additional metal (solder) with a lower melting point than the base materials to be connected is used to attach two metallic materials to one another.

TERMINATION CROSS-SECTION

The specified cross-sections correspond to a "fine-wire" conductor structure pursuant to IEC 60228:2004 (VDE 0295:2005-09; Class 5) or a "fine-wire" conductor structure (7/19 wire) according to AWG (ASTM B258-14).

TERMINATION TECHNOLOGIES

Methods for connecting the leads to the electro-mechanical element, such as solder-free connections pursuant to IEC 60352 (DIN EN 60352): crimp, screw connection etc. or soldering connection (see page 120).

TEST VOLTAGE

The voltage which a conductor can withstand under defined conditions without dielectric breakdown or flashover.

TIGHTNESS IEC 60529:2013 (VDE 0470-1:2014-09)

See protection types on page 114

UPPERMOST LIMIT TEMPERATURE

The maximum permissible temperature at which a connector may be operated. It includes contact heating through current-carrying capacity. With ODU MEDI-SNAP® standard TURNTAC® contacts, it amounts to +120 °C. Please consult ODU for high-temperature applications.

WIRE

Wires (solid conductors) are available with an insulator sleeve and/or electrical shielding. Cables or conductors may be made up of one or more wires.

GENERAL NOTE

The connectors listed in this catalog are intended for use in high voltage and frequency ranges. Suitable precautionary measures must be taken to ensure that people do not come into contact with live conductors during installation and operation.
All entries in this catalog were thoroughly reviewed before printing. ODU reserves the right to make changes based on the current state of knowledge without prior notice without being obliged to provide replacement deliveries or refinements of older designs.

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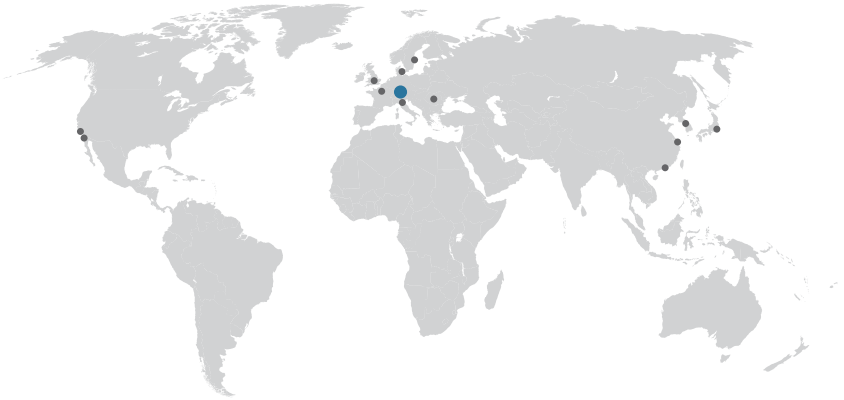

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