

用于水处理设备的ABB 变频器

快速安装和启动指南

ACQ580-01 变频器

外形尺寸 R0 至 R5

R0-
R4

R5



中文 7 CN

英文 33 EN

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相关手册列表

变频器手册和指南	代码 (英文)	代码 (中文)
ACQ580 泵控制程序固件手册	3AXD50000035867	3ABD00045443
ACQ580-01 (0.75 至 250 kW) 硬件手册	3AXD50000035866	3ABD00045442
ACQ580-01 外形尺寸 R0 至 R5 快速安装和启动指南	3AXD50000035755	3ABD00045454
ACQ580-01 外形尺寸 R6 至 R9 快速安装和启动指南	3AXD50000037301	3ABD00045455
ACS-AP-x 助手控制盘用户手册	3AUA0000085685	
可选件手册和指南		
CDPI-01 通讯适配器模块用户手册	3AXD50000009929	
ACS-AP 控制盘 DPMP-01 安装平台	3AUA0000100140	
ACS-AP 控制盘 DPMP-02/03 安装平台	3AUA0000136205	
FDNA-01 DeviceNet™ 适配器模块用户手册	3AFE68573360	
FENA-01/-11/-21 Ethernet 适配器模块用户手册	3AUA0000093568	
FPBA-01 PROFIBUS DP 适配器模块用户手册	3AFE68573271	
FSCA-01 RS-485 适配器模块用户手册	3AUA0000109533	
外形尺寸 R6 至 R9 法兰安装快速指南	3AXD50000019099	
法兰安装补充手册	3AXD50000019100	
工具和维护手册和指南		
Drive composer PC 工具用户手册	3AUA0000094606	
变频器模块电容重整说明	3BFE64059629	
NETA-21 远程安装工具用户手册	3AUA00000969391	
NETA-21 远程安装工具安装和启动指南	3AUA0000096881	

您可以在 Internet 上查找 PDF 格式的手册和其它产品文件。请参阅封底内的 [Internet 上的文件库](#) 一节。对于在“文档”资料库内没有提供的手册，请联系当地的 ABB 代表。

3ABD00045454 版本 A 中文
 基于: 3AXD50000035755 版本 B 英文
 生效日期: 2016-12-31

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中文 – R0...R4 快速安装指南

本指南简要介绍如何安装变频器。如需了解完整的安装信息，请参阅 ACQ580-01 (0.75 至 250 kW) *硬件手册* (3ABD00045442 [中文]) 有关启动说明，请参阅第 27 页的 *中文 – 快速启动指南* 一章。

如需阅读手册，请访问 www.abb.com/drives/documents，搜索文件编号。

**R0-
R4**

遵循安全指导



警告！ 请遵循这些指导。如果您忽略指导，可能会导致受伤、死亡或设备损坏：

- 如果您不是具有资格的电工，请勿进行电气安装工作。
- 当接上主电源时，切勿在变频器、电机电缆或电机上操作。如果变频器已经连接到了输入电源，请在断开输入电源后等待 5 分钟。
- 当变频器或外部控制电路连接了电源时，切勿操作控制电缆。
- 在安装时，确保不让钻孔和研磨出的碎屑进入变频器。
- 确保变频器下方的地面和安装变频器的墙面是阻燃的。

检查电容是否需要重整

如果变频器已经有一年或更长时间未通电（存放或未用），则必须重整电容。

您可以从序列号来判断生产时间。序列号可以在变频器所贴的型号标签上找到。序列号的格式是 MYYWWRXXXX。YY 和 WW 以如下方式说明生产年份和周次：

YY: 13、14、15、... 分别代表 2013、2014、2015、...

WW: 01、02、03、... 分别代表第 1 周、第 2 周、第 3 周、...

有关电容重整的信息，请参阅互联网上的 *Converter module capacitor reforming instructions*（变频器模块电容重整说明）(3BFE64059629 [英语])，网址：
www.abb.com/drives/documents。

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选择电缆

应根据当地规范选择能承载变频器型号标签上标称电流的电缆规格。

确保冷却

R0-
R4

请参阅第 13 上的表 I (UL: 第 13 页上的表 II) 了解 散热信息。变频器的允许操作温度范围是 -15 到 +50°C (+5 到 +122°F)。不允许凝露或结霜。如需了解环境温度和降低额定值的更多信息，请参阅 ACQ580-01 (0.75 至 250 kW) 硬件手册 (3ABD00045442 [中文]) 中的 *技术数据* 一章。

保护变频器和输入电缆

请参阅表 III (第 14 页) 和 IV (第 14 页) ; (UL : 第 15 页的表 V) 了解熔断器的信息。

如果使用 gG 熔断器，请确保熔断器的熔断时间少于 0.5 秒。遵循当地法规。

在墙上安装变频器

请参阅第 61 页的图 R0...R4 Figures A。

检查供电电缆和电机的绝缘

在将输入电缆连接到变频器前，请按当地法规检查其绝缘。

请参阅第 61 页的图 B1。

1. 电缆从变频器断开后，检查电机电缆和电机的绝缘。使用 1000 V 直流测量各相导线之间的绝缘电阻，然后测量每相导线与保护性接地导线之间的绝缘电阻。典型电机的绝缘电阻必须超过 100 Mohm (参照值为 25°C 或 77°F 时测得)。对于其他电机的绝缘电阻，请参阅其制造商的说明。

注：电机外壳内部的湿气会降低绝缘电阻。如果湿气长期存在，请干燥电机后再次测量。

关闭电源并打开盖板

请参阅第 61 页的图 B1。

2. 关断变频器电源。
3. 卸下前盖：用螺丝刀松开固定螺钉 (3a)，从底部向外 (3b) 再向上 (3c) 将前盖拉出。

R0-
R4

检查与 IT（浮地）和角接地的 TN 系统的兼容性

■ EMC 滤波器

内置 EMC 滤波器不适用于 IT（浮地）系统或角接地的 TN 系统。在将变频器连接到电网前断开 EMC 滤波器的连接。查看第 10 页的表。



警告！ 请勿将连接了内置 EMC 滤波器的变频器安装在 IT 系统（浮地电网系统或高阻抗接地系统 [超过 30 ohm] 的电网系统），否则系统可能会通过变频器的 EMC 滤波器电容连接到接地线。这可能会导致危险或损坏变频器。

请勿将连接了内置 EMC 滤波器的变频器安装在角接地的 TN 系统，否则可能会损坏变频器。

注：不连接内置 EMC 滤波器，变频器的 EMC 兼容性会显著降低。

■ 压敏电阻

压敏电阻不适用于 IT（浮地）系统。在将变频器连接到电网前断开压敏电阻的连接。查看第 10 页的表。

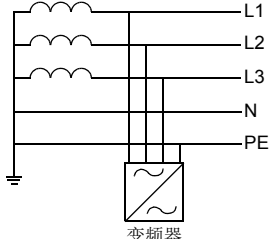


警告！ 安装变频器时请勿将压敏电阻连接到 IT 系统（未接地电网系统或高阻抗接地系统 [超过 30 ohm] 的电网系统），否则会损坏压敏电阻的电路。

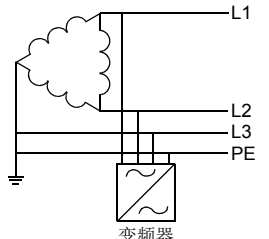
如须断开 EMC 滤波器 (EMC) 或压敏电阻 (VAR)，请查看下表。具体操作说明请参阅第 11 页。

外形尺寸	EMC 滤波器 (EMC)	压敏电阻 (VAR)	对称接地 TN 系统 (TN-S 系统) ¹	角接地 TN 系统 ²	IT 系统 (浮地或高 阻抗接地系统 [>30 ohms]) ³
R0...R3	EMC (1 个开关)	-	不断开	断开	断开
	-	VAR (1 个开关)	不断开	不断开	断开
R4	EMC (2 个螺钉)	-	不断开	外形尺寸 R4 不能用在角接地 TN 系统中。	断开
	-	VAR (1 个螺钉)	不断开		断开

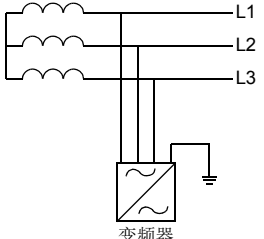
1



2



3



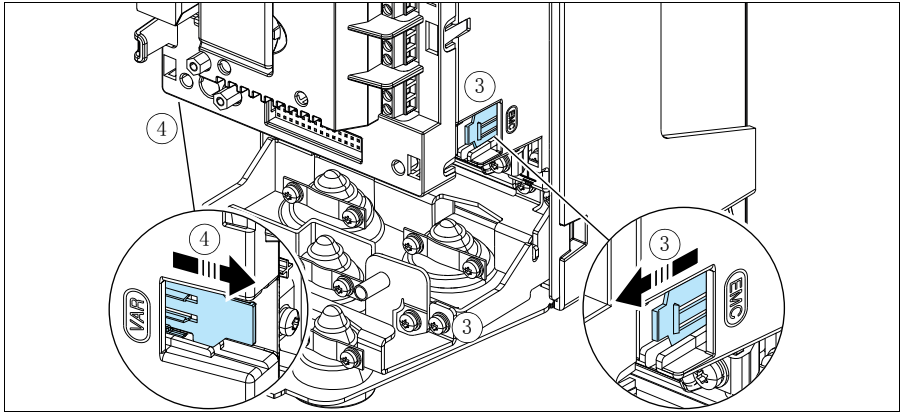
■ 断开 EMC 滤波器或压敏电阻（必要时）

如果必要时要断开内置 EMC 滤波器或压敏电阻，请执行以下操作：

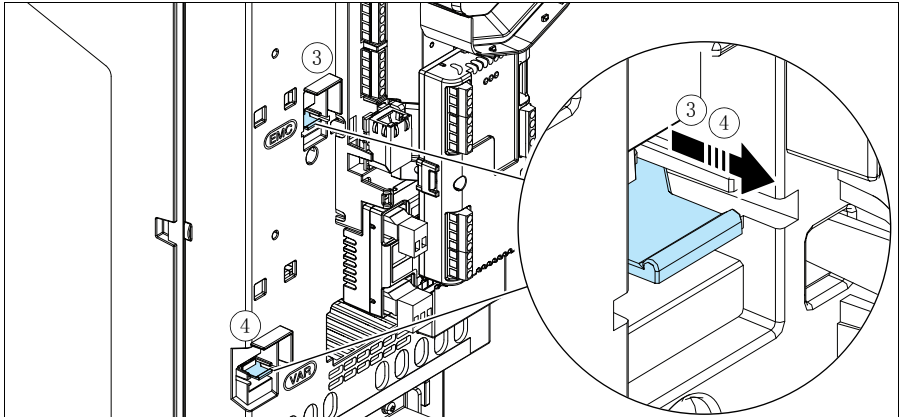
1. 关断变频器电源。
2. 打开前盖（如果尚未打开），请参阅第 61 页的图 B1。
3. R0...R3：按箭头方向滑动 EMC 开关，断开内置 EMC 滤波器。
R4：卸下两颗 EMC 螺钉，断开内置 EMC 滤波器。
4. R0...R3：按箭头方向滑动压敏电阻开关，将压敏电阻断开。
R4：卸下压敏电阻螺钉，断开压敏电阻。

R0-
R4

R0...R2



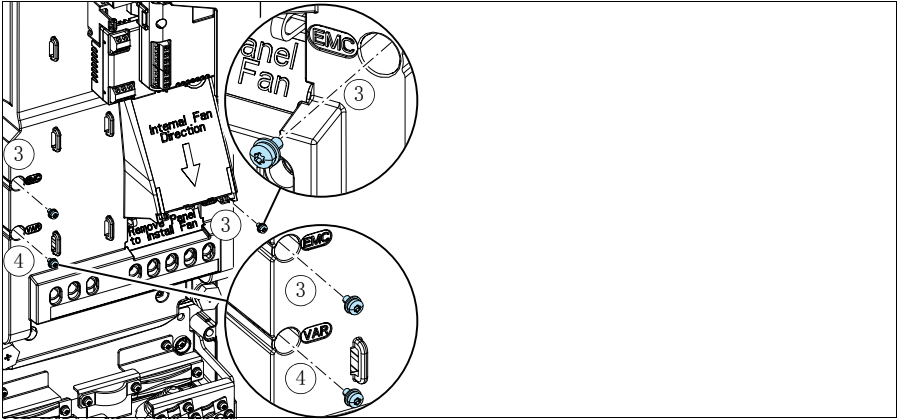
R3



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R4

R0-
R4



连接电缆

请参阅图 C1 (第 61 页)、C2、D、E、F1、G1、G1 和 G2。

1. 从引线板卸下橡胶绝缘圈。

电机电缆请使用对称屏蔽线。如果屏蔽电缆为变频器或电机的唯一保护接地线，请确保地线有足够的导电能力。

R0-
R4

2. 在橡胶绝缘圈上切出足够大的孔。将绝缘圈套入电缆。

3. 如图 3a 和 3b 所示准备好电机电缆的两端 (展示了两种不同的电机电缆)。
注：将屏蔽线裸线做 360 度接地。将黄绿色双绞屏蔽线标记为保护接地线。

4. 将电缆从底板的孔中穿过并将绝缘圈固定到孔上。

5. 连接电机电缆：

- 将供电电缆夹的接地支架紧固到电缆的剥开部分，将屏蔽线做 360 度接地 (5a)。
- 将电缆的扭绞屏蔽层连接到接地端子 (5b)。
- 将电缆的相线连接到 T1/U、T2/V 和 T3/W 端子 (5c)。按图中给出的力矩拧紧螺钉。

6. 对输入电缆重复步骤 2...4。

7. 连接输入电缆。连接电缆的附加保护接地导线 (7c)。按图中给出的力矩拧紧螺钉。

8. 安装制动电阻电缆的接地架。

9. 对制动电阻电缆重复步骤 2...4 (如有使用)。切除多余的相线 (如有)。

10. 不适用于 ACQ580-01。

11. 安装控制电缆的接地支架。

12. 将未使用的橡胶绝缘圈装回到穿孔板的孔上。

13. 将导线在变频器单元外机械紧固。

14. 在电机端将电机电缆屏蔽层接地。为实现最小的射频干扰，在电机接线盒的穿孔部分将电机电缆屏蔽层做 360 度接地。

连接控制电缆

请参阅第 63 页的图 *R0...R4 Figures H*。图中所示为一根模拟信号电缆和一根数字信号电缆的示例。请按所使用的默认配置进行连接。水处理默认配置的默认连接见第 15 页的 *默认 I/O 连接* 一节。

R0-
R4

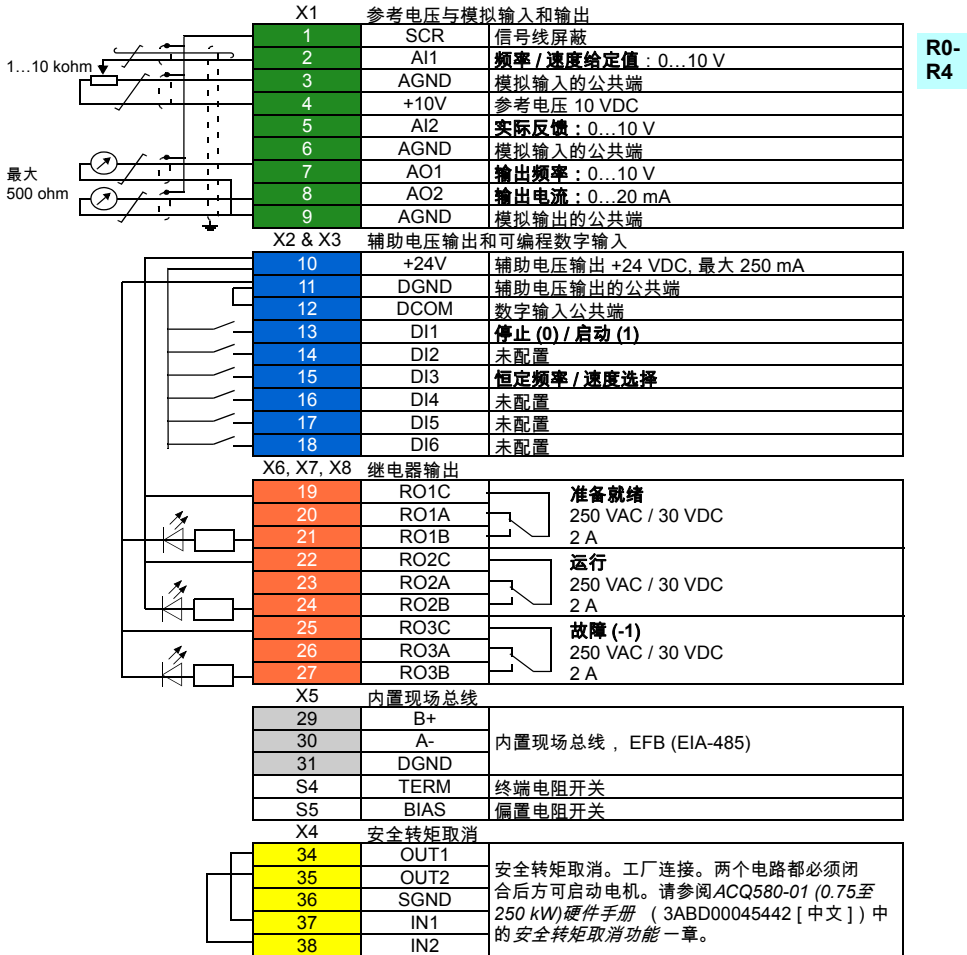
1. 卸下前盖（如果尚未卸下）。请参阅第 9 页的 *关闭电源并打开盖板* 一节。

模拟信号电缆连接示例：

2. 在橡胶绝缘圈上切一个足够大的孔，然后将绝缘圈套入电缆。将电缆从底板的孔中穿过并将绝缘圈固定到孔上。
3. 将电缆的外屏蔽层在接地夹下做 360 度接地。靠近控制电路板端子的电缆的剥开部分要尽可能少。在 SCR1 端子处将成对电缆屏蔽和接地线也做接地。
4. 如图所示进行布线。
5. 将导线连接到控制板的对应端子上，并紧固到 0.5...0.6 N·m(0.4 lbf·ft)。
6. 将全部控制电缆都绑到提供的电缆捆绑架上。

默认 I/O 连接

水处理默认配置的默认 I/O 连接如下所示。



辅助电压输出 +24V (X2:10) 的总负载能力为 6.0 W (250 mA / 24 V DC)。

电缆规格：

0.2...2.5 mm² (24...14 AWG)：端子 +24V, DGND, DCOM, B+, A-, DGND, 外部 24V

0.14...1.5 mm² (26...16 AWG)：端子 DI, AI/O, AGND, RO, STO

紧固力矩：0.5...0.6 N·m (0.4 lbf·ft)

安装可选模块

请参阅 ACQ580-01 (0.75 至 250 kW) 硬件手册 (3ABD00045442 [中文]) 中的 电气安装一章。

R0-
R4

装回盖板

请参阅第 64 页的图 I。

1. 将盖板顶部内侧的搭扣放进外壳上的扣眼 (1a)，然后在底部按下盖板 (1b)。
2. 用螺丝刀将紧固螺钉拧紧。

有关启动说明，请参阅第 27 页的 中文 – 快速启动指南一章。

中文 – R5 快速安装指南

本指南简要介绍如何安装变频器。如需了解有关安装的完整信息，请参阅 ACQ580-01 (0.75 至 250 kW) *硬件手册* (3ABD00045442 [中文])。有关启动说明，请参阅第 27 页的 *中文 – 快速启动指南* 一章。

如需阅读手册，请访问 www.abb.com/drives/documents，搜索文件编号。

R5

遵循安全指导



警告！ 请遵循这些指导。如果您忽略指导，可能会导致受伤、死亡或设备损坏：

- 如果您不是具有资格的电工，请勿进行电气安装工作。
- 当接上主电源时，切勿在变频器、电机电缆或电机上操作。如果变频器已经连接到了输入电源，请在断开输入电源后等待 5 分钟。
- 当变频器或外部控制电路连接了电源时，切勿操作控制电缆。
- 在安装时，确保不让钻孔和研磨出的碎屑进入变频器。
- 确保变频器下方的地面和安装变频器的墙面是阻燃的。

检查电容是否需要重整

如果变频器已经有一年或更长时间未通电（存放或未用），则必须重整电容。

您可以从序列号来判断生产时间。序列号可以在变频器所贴的型号标签上找到。序列号的格式是 MYYWWRXXXX。YY 和 WW 以如下方式说明生产年份和周次：

YY: 13、14、15、... 分别代表 2013、2014、2015、...

WW: 01、02、03、... 分别代表第 1 周、第 2 周、第 3 周、...

有关电容重整的信息，请参阅互联网上的 *Converter module capacitor reforming instructions*（变频器模块电容重整说明）(3BFE64059629 [英语])，网址：
www.abb.com/drives/documents。

ZH

选择电缆

应根据当地规范选择能承载变频器型号标签上标称电流的电缆规格。

确保冷却

R5

请参阅第 91 页上的表 I (UL: 第 91 页上的表 II) 了解 散热信息。变频器的允许操作温度范围是 -15 到 +50°C (+5 到 +122°F)。不允许凝露或结霜。如需了解环境温度和降低额定值的更多信息, 请参阅 *ACQ580-01 (0.75 至 250 kW) 硬件手册* (3ABD00045442 [中文]) 中的 *技术数据* 一章。

保护变频器和输入电缆

请参阅表 III (第 91 页) 和 IV (第 91 页) ; (UL : 第 92 页的表 V) 了解熔断器的信息。

如果使用 gG 熔断器, 请确保熔断器的熔断时间少于 0.5 秒。遵循当地法规。

在墙上安装变频器

请参阅第 65 页的图 *R5 Figures A*。

检查供电电缆和电机的绝缘

在将输入电缆连接到变频器前, 请按当地法规检查其绝缘。

请参阅第 65 页的图 *B*。

1. 电缆从变频器断开后, 检查电机电缆和电机的绝缘。使用 1000 V 直流测量各相导线之间的绝缘电阻, 然后测量每相导线与保护性接地导线之间的绝缘电阻。典型电机的绝缘电阻必须超过 100 Mohm (参照值为 25°C 或 77°F 时测得)。对于其他电机的绝缘电阻, 请参阅其制造商的说明。

注: 电机外壳内部的湿气会降低绝缘电阻。如果湿气长期存在, 请干燥电机后再次测量。

关闭电源并打开盖板

请参阅第 65 页的图 B。

2. 关断变频器电源。
3. IP21, 拆卸模块盖：用螺丝刀松开固定螺钉 (3a)，从底部向外 (3b) 再向上 (3c) 将前盖拉出。
4. IP21, 拆卸箱盖：用螺丝刀松开固定螺钉 (4a)，向下滑出盖子 (4b)。
5. IP55, 拆卸前盖：用螺丝刀松开固定螺钉 (4a)，从底部向外 (4b) 再向上 (4c) 将前盖拉出。

R5

检查与 IT (浮地) 与角接地的 TN 系统的兼容性

■ EMC 滤波器

内置 EMC 滤波器不适用于 IT (浮地) 系统或角接地的 TN 系统。在将变频器连接到电网前断开 EMC 滤波器的连接。查看第 20 页的表。



警告！ 请勿将连接了内置 EMC 滤波器的变频器安装在 IT 系统 (浮地电网系统或高阻抗接地系统 [超过 30 ohm] 的电网系统)，否则系统将可能会通过变频器的 EMC 滤波器电容连接到接地线。这可能会导致危险或损坏变频器。

请勿将连接了内置 EMC 滤波器的变频器安装在角接地的 TN 系统，否则可能会损坏变频器。

注：不连接内置 EMC 滤波器，变频器的 EMC 兼容性会显著降低。

■ 压敏电阻

压敏电阻不适用于 IT (浮地) 系统。在将变频器连接到电网前断开压敏电阻的连接。查看第 20 页的表。



警告！ 安装变频器时请勿将压敏电阻连接到 IT 系统 (未接地电网系统或高阻抗接地系统 [超过 30 ohm] 的电网系统)，否则会损坏压敏电阻的电路。

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如须断开 EMC 滤波器 (EMC) 或压敏电阻 (VAR)，请查看下表。具体操作说明请参阅第 21 页。

外形尺寸	EMC 滤波器 (EMC)	压敏电阻 (VAR)	对称接地 TN 系统 (TN-S 系统) ¹	角接地 TN 系统 ²	IT 系统 (浮地或高阻抗接地系统 [>30 ohms]) ³
R5	EMC (2 个螺钉)	-	不断开	外形尺寸 R5 不能用在角接地 TN 系统中。	断开
	-	VAR (1 个螺钉)	不断开		断开

1

变频器

2

变频器

3

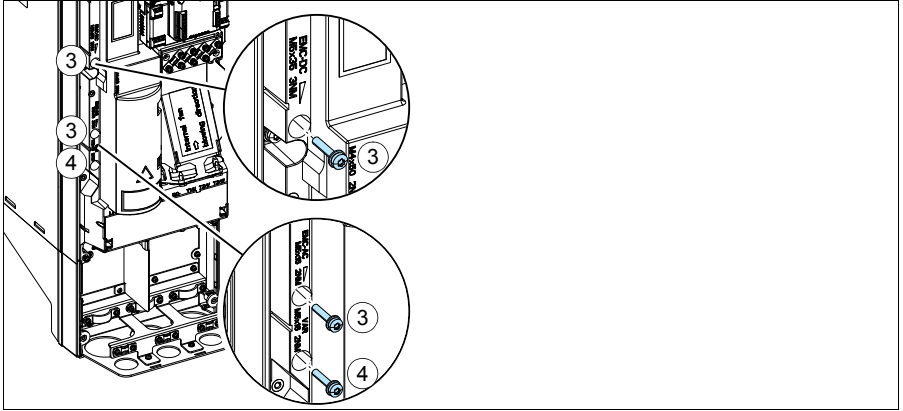
变频器

■ 断开 EMC 滤波器或压敏电阻（必要时）

如果必要时要断开内置 EMC 滤波器或压敏电阻，请执行以下操作：

1. 关断变频器电源。
2. 打开前盖（如果尚未打开），请参阅第 65 页的图 B。
3. 卸下两颗 EMC 螺钉，断开内置 EMC 滤波器。
4. 卸下压敏电阻螺钉，断开压敏电阻。

R5



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连接电缆

请参阅图 C (第 66 页)、D 和 E。

1. 将本地语言的剩余电压警告贴纸贴在控制电路板旁。
2. 用螺丝刀松开搭扣，并将护罩拉出，卸下供电电缆端子上的护罩。

电机电缆请使用对称屏蔽线。如果屏蔽电缆为变频器或电机的唯一保护接地线，请确保地线有足够的导电能力。

3. 在橡胶绝缘圈上切出足够大的孔。将绝缘圈套入电缆。
4. 如图 4a 和 4b 所示准备好电机电缆的两端 (展示了两种不同的电机电缆)。
注：将屏蔽线裸线做 360 度接地。将黄绿色双绞屏蔽线标记为保护接地线。
5. 将电缆从底板的孔中穿过并将绝缘圈固定到孔上。
6. 连接电机电缆：
 - 将供电电缆夹的接地支架紧固到电缆的剥开部分，将屏蔽线做 360 度接地 (6a)。
 - 将电缆的双绞线屏蔽层连接到接地端子 (6b)。
 - 将电缆的相线连接到 T1/U、T2/V 和 T3/W 端子 (6c)。按图中给出的力矩拧紧螺钉。
7. 对输入电缆重复步骤 3...5。
8. 连接输入电缆。按图中给出的力矩拧紧螺钉。
9. 安装电缆盒板。放好板并拧紧螺钉。
10. 将护罩顶部的搭扣放进变频器机架上的扣眼中，然后将护罩按到位，将护罩重新装到电源端子上。
11. 将导线在变频器单元外机械紧固。
12. 请参阅图 R5 Figures F (第 67 页)。在电机端将电机电缆屏蔽层接地。为实现最小的射频干扰，请在电机接线盒的穿孔部分将电机电缆屏蔽层做 360 度接地。

R5

连接控制电缆

请参阅第 68 页的图 H。图中所示为一根模拟信号电缆和一根数字信号电缆的示例。请按所使用的默认配置进行连接。水处理默认配置的默认连接见第 24 页的[默认 I/O 连接](#)一节。

1. 卸下前盖（如果尚未卸下）。请参阅第 19 页的[关闭电源并打开盖板](#)一节。

模拟信号电缆连接示例：

2. 在橡胶绝缘圈上切一个足够大的孔，然后将绝缘圈套入电缆。将电缆从底板的孔中穿过并将绝缘圈固定到孔上。
3. 将电缆的外屏蔽层在接地夹下做 360 度接地。靠近控制电路板端子的电缆的剥开部分要尽可能少。在 SCR1 端子处将成对电缆屏蔽和接地线也做接地。
4. 如图所示进行布线。
5. 将导线连接到控制板的对应端子上，并紧固到 0.5...0.6 N·m(0.4 lbf·ft)。
6. 将全部控制电缆都绑到提供的电缆捆绑架上。

R5

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最大
500 ohm

34	OUT1	安全转矩取消。工厂连接。两个电路都必须闭合后方可启动电机。请参阅ACQ580-01 (0.75至250 kW) 硬件手册 (3ABD00045442 [中文]) 中的安全转矩取消功能一章。
35	OUT2	
36	SGND	
37	IN1	
38	IN2	

电缆规格：

0.14...1.5 mm² (26...16 AWG) : 端子 DI, AI/O, AGND, RO, STO

紧固力矩：0.5...0.6 N·m (0.4 lbf·ft)

安装可选模块

请参阅 ACQ580-01 (0.75 至 250 kW) 硬件手册 (3ABD00045442 [中文]) 中的 电气安装一章。

装回盖板

请参阅第 68 页的图 H。

1. IP21, 装回箱盖：向上滑动盖子 (1a)，然后拧紧固定螺钉 (1b)。
2. IP21, 装回模块盖：将盖板顶部内侧的搭扣放进外壳上的扣眼 (2a)，在底部按下盖板 (2b)，然后拧紧固定螺钉 (2c)。
3. IP55, 装回前盖：将盖板顶部内侧的搭扣放进外壳上的扣眼 (3a)，在底部按下盖板 (3a)，然后拧紧固定螺钉 (3b)。

有关启动说明，请参阅第 27 页的 [中文 – 快速启动指南](#) 一章。

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中文 – 快速启动指南

本指南介绍如何在 Hand-Off-Auto 控制盘上使用“首次启动助手”启动变频器。如需了解有关启动的完整信息，请参阅 ACQ580 *固件手册* (3ABD00045443[英语])。

启动之前

确保按照第 7 页的 [中文 – R0...R4 快速安装指南](#) 一章（外形尺寸 R0...R4）或第 17 页的 [中文 – R5 快速安装指南](#) 一章（外形尺寸 R5）所述安装变频器。

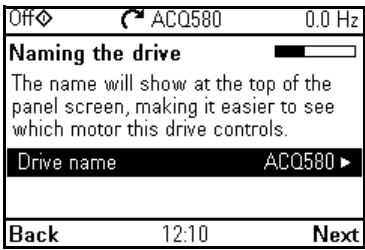
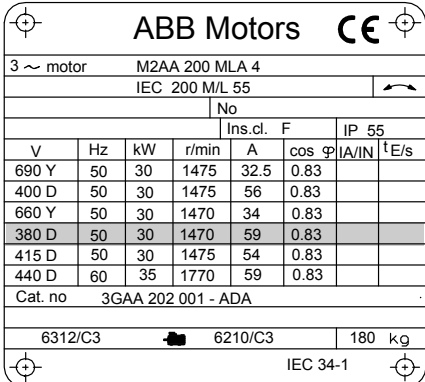
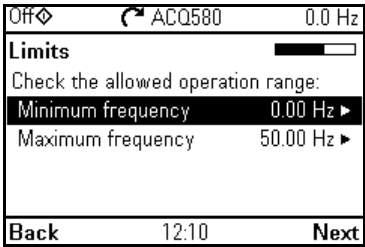
R0-
R9

在 Hand-Off-Auto 控制盘上用“初次启动助手”启动

安全	
☐	确保安装工作已经完成。确保变频器的盖板和电缆盒位置就位。
☐	 检查确保电机的启动不造成任何危险。如果由于不正确的转动方向可能导致损坏， 请将被驱动的机器断开。
使用助手型控制盘的提示	
显示屏底部的两个命令（右图的选项和菜单）显示了屏幕下方的两个软键  和  的功能。分配给软键的命令在不同上下文环境中会有所不同。 用 、、 和  键移动光标和 / 或根据当前视图修改值。  键会显示一个上下文相关的帮助页面。	
1 – 首次启动助手引导的设置： 语言、日期和时间以及电机额定值	
☐	请准备好电机铭牌数据。 给变频器上电。



□	“首次启动助手”会引导您完成首次启动。助手会自动开始运行。等待控制控制盘进入如右图所示的画面。 选择您想使用的语言（如果尚未选中），然后按 (OK)。 注：选择了语言后，控制盘需要几分钟时间来激活。	
□	选择启动设置并按 (下一步)。	
□	设置日期和时间以及日期时间显示格式。 - 按 进入所选行的编辑视图。 - 用 和 滚动视图。 按 (下一步) 进入下一个视图。	
□	在编辑视图上修改数值：左右移动光标 - 用 和 左右移动光标。 - 用 和 修改数值。 按 (保存) 接受新设置，或按 (取消) 来返回原先视图而不做任何修改。	
□	如果需要，可在控制盘上修改单位： - 按 进入所选行的编辑视图。 - 用 和 滚动视图。 按 进入下一个视图 (下一步)。	

☐ 要给变频器命名（显示在顶部），按 。 如果您不想改变默认名称 (ACQ580)，按  (下一步) 继续。 有关编辑文字的更多信息，请参阅 <i>ACQ580 固件手册</i> (3ABD00045443 [英语])。 提示：为变频器命名，例如，泵 1。	
电机的下列额定值设置请参考电机或泵铭牌。完全按照电机或泵铭牌所示输入值。 感应（异步）电机铭牌示例： 	☐ 检查确认电机数据正确。这些值是根据变频器规格预先定义的，但是您应该确认它们与电机对应。 从输入电机类型开始。 - 按  进入所选行的编辑视图。 - 用  和  滚动视图。 电机额定 $\cos \phi$ 和额定转矩是选填项目。 按  (下一步) 继续。
☐ 根据需要调节限值。 - 按  进入所选行的编辑视图。 - 用  和  滚动视图。 按  显示下一个视图 (下一步)。	

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R9

□	如果想备份到目前为止的设置，选择备份并按 (下一步)。 如果不想做备份，选择不做备份并按 (下一步)。	
□	初步启动现在完成，变频器已准备好使用。按 (完成) 进入主页视图。	
□	主页视图会显示面板上显示的所选信号的值。 有关在主页视图上更改信号及其显示格式，参阅 <i>ACS-AP-x 助手控制盘用户手册</i> (3AUA0000085685 [英语])。	

2 - 主设置菜单中的附加设置

□	要做一个附加调节，例如，泵保护，从主菜单开始 - 按 (菜单) 进入主菜单。 选择主设置并按 (选择) (或)。 在主设置菜单中，选择泵保护并按 (选择) (或)。 更多关于主设置项的信息，按 打开帮助页面。	
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ZH

3 - 手动 / 关闭 / 自动运行

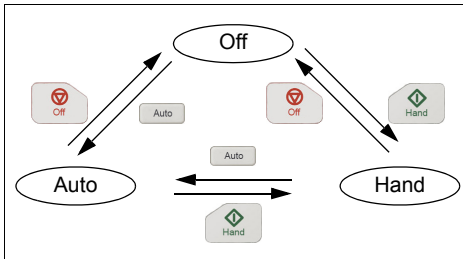
变频器可以通过远程控制或本地控制，在本地控制中，又有两种不同的模式。远程控制：从 I/O 或现场总线控制变频器。

- 视图的顶行显示 Auto。

本地控制：从控制盘控制变频器。

- 视图顶行显示 Off，也就是说，变频器处于关闭模式。变频器停止运行。
- 视图顶行显示 Hand，也就是说，变频器处于手动模式。变频器运行中。Hand 模式中的初始参照值复制自变频器的参照值。
顶行的符号 $\blacktriangleleft$ 表示您可以用 $\blacktriangleleft$ 和 $\blacktriangleright$ 修改参照值。

下列图表显示了当您按下 Hand、Off 或 Auto 按钮时的状态变化。



注：当您在故障 7081 控制盘丢失状态下重新启动变频器时，模式从 Hand 或 Off 变为 Auto。

Auto	ACQ580	30.0 Hz
Output frequency	Hz	30.00
Motor current	A	0.46
Motor torque	%	8.9
12:30	Menu	
Off	ACQ580	0.0 Hz
Output frequency	Hz	0.00
Motor current	A	0.00
Motor torque	%	0.0
12:37	Menu	
Hand	ACQ580	30.0 Hz
Output frequency	Hz	30.00
Motor current	A	0.46
Motor torque	%	8.8
Reference	12:38	Menu
Off	ACQ580	0.0 Hz
Fault 7081	Aux code: 0000 0000	
Control panel loss	12:41:43	
Control panel loss fault		
Hide	12:42	Reset

R0-
R9

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EN – R0...R4 Quick installation guide

This guide briefly describes how to install the drive. For complete information on installation, see *ACQ580-01 (0.75 to 250 kW) hardware manual* (3AXD50000035866 [English]). For start-up instructions, see chapter *EN – Quick start-up guide* on page 53.

R0-
R4

To read a manual, go to www.abb.com/drives/documents and search for the document number.

Obey the safety instructions



WARNING! Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur:

- If you are not a qualified electrician, do not do electrical installation work.
- Do not work on the drive, motor cable or motor when main power is applied. If the drive is already connected to the input power, wait for 5 minutes after disconnecting the input power.
- Do not work on the control cables when power is applied to the drive or to the external control circuits.
- Make sure that debris from borings and grindings does not enter the drive when installing.
- Make sure that the floor below the drive and the wall where the drive is installed are non-flammable.

EN

Check if capacitors need to be reformed

If the drive has not been powered (either in storage or unused) for over one year, you must reform the capacitors.

You can determine the manufacturing time from the serial number, which you find on the type designation label attached to the drive. The serial number is of format MYYWWRXXXX. YY and WW tell the manufacturing year and week as follows:

YY: 13, 14, 15, ... for 2013, 2014, 2015, ...

WW: 01, 02, 03, ... for week 1, week 2, week 3, ...

For information on reforming the capacitors, see *Converter module capacitor reforming instructions* (3BFE64059629 [English]), available on the Internet at www.abb.com/drives/documents.

Select the power cables

Size the power cables according to local regulations to carry the nominal current given on the type designation label of your drive.

R0-
R4

Ensure the cooling

See table [I](#) on page [13](#) (UL: table [II](#) on page [13](#)) for the heat dissipation. The allowed operating temperature range of the drive is -15 to +50 °C (+5 to +122 °F). No condensation or frost is allowed. For more information on the ambient temperature and derating, see chapter *Technical data* in *ACQ580-01 (0.75 to 250 kW) hardware manual* (3AXD50000035866 [English]).

Protect the drive and input power cable

EN

See tables [III](#) (on page [14](#)) and [IV](#) (on page [14](#)); (UL: table [V](#) on page [15](#)) for the fuses.

If you use gG fuses, make sure that the operating time of the fuse is below 0.5 seconds. Follow the local regulations.

Install the drive on the wall

See figure [R0...R4 Figures A](#) on page [61](#).

Check the insulation of the power cables and the motor

Check the insulation of the input cable according to local regulations before connecting it to the drive.

See figure [B1](#) on page [61](#).

1. Check the insulation of the motor cable and motor when the cable is disconnected from the drive. Measure the insulation resistance between each phase conductor and then between each phase conductor and the Protective Earth conductor using a measuring voltage of 1000 V DC. The insulation resistance of a typical motor must exceed 100 Mohm (reference value at 25 °C or 77 °F). For the insulation resistance of motors, see the manufacturer's instructions.

Note: Moisture inside the motor casing will reduce the insulation resistance. If moisture is suspected, dry the motor and repeat the measurement.

Switch off the power and open the cover

See figure [B1](#) on page [61](#).

2. Switch off the power from the drive.
3. Remove the front cover: Loosen the retaining screw with a screwdriver (3a) and lift the cover from the bottom outwards (3b) and then up (3c).
4. Attach the residual voltage warning sticker in the local language.

**R0-
R4**

Check the compatibility with IT (ungrounded) and corner-grounded TN systems

■ EMC filter

The internal EMC filter is not suitable for use on an IT (ungrounded) system or on a corner-grounded TN system. Disconnect the EMC filter before connecting the drive to the supply network. Check the table on page [36](#).

EN

WARNING! Do not install the drive with the internal EMC filter connected on an IT system (an ungrounded power system or a high-resistance-grounded [over 30 ohms] power system), otherwise the system will be connected to ground potential through the EMC filter capacitors of the drive. This can cause danger, or damage the drive.

Do not install the drive with the internal EMC filter connected on a corner-grounded TN system, otherwise the drive will be damaged.

Note: When the internal EMC filter is disconnected, the drive EMC compatibility is considerably reduced.

■ Ground-to-phase varistor

The ground-to-phase varistor is not suitable for use on an IT (ungrounded) system. Disconnect the ground-to-phase varistor before connecting the drive to the supply network. Check the table on page [36](#).

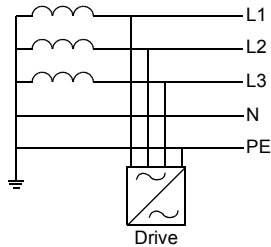


WARNING! Do not install the drive with the ground-to-phase varistor connected on an IT system (an ungrounded power system or a high-resistance-grounded [over 30 ohms] power system), otherwise the varistor circuit can be damaged.

Check from the table below if you have to disconnect the EMC filter (EMC) or ground-to-phase varistor (VAR). For instructions on how to do this, see page 37.

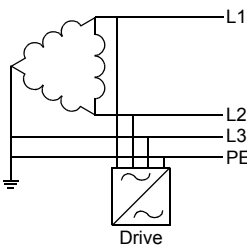
Frame sizes	EMC filter (EMC)	Ground-to-phase varistor (VAR)	Symmetrically grounded TN systems (TN-S systems) ¹	Corner grounded TN systems ²	IT systems (ungrounded or high-resistance grounded [>30 ohms]) ³
R0...R3	EMC (1 switch)	-	Do not disconnect	Disconnect	Disconnect
	-	VAR (1 switch)	Do not disconnect	Do not disconnect	Disconnect
R4	EMC (2 screws)	-	Do not disconnect	Frame R4 cannot be used in corner grounded TN systems.	Disconnect
	-	VAR (1 screw)	Do not disconnect		Disconnect

1



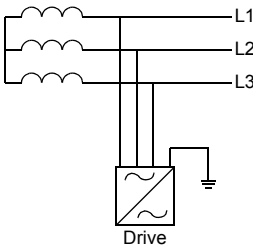
Drive

2



Drive

3



Drive

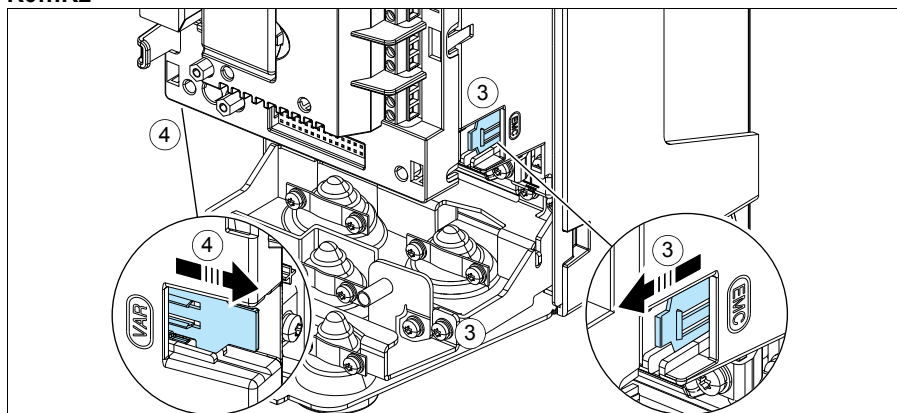
■ Disconnect EMC filter or ground-to-phase varistor, if needed

To disconnect the internal EMC filter or ground-to-phase varistor, if needed, do as follows:

1. Switch off the power from the drive.
2. Open the front cover, if not already opened, see figure [B1](#) on page [61](#).
3. R0...R3: To disconnect the internal EMC filter, slide the EMC switch in the direction shown by the arrow.
R4: To disconnect the internal EMC filter, remove the two EMC screws.
4. R0...R3: To disconnect the ground-to-phase varistor, slide the varistor switch in the direction shown by the arrow.
R4: To disconnect the ground-to-phase varistor, remove the varistor screw.

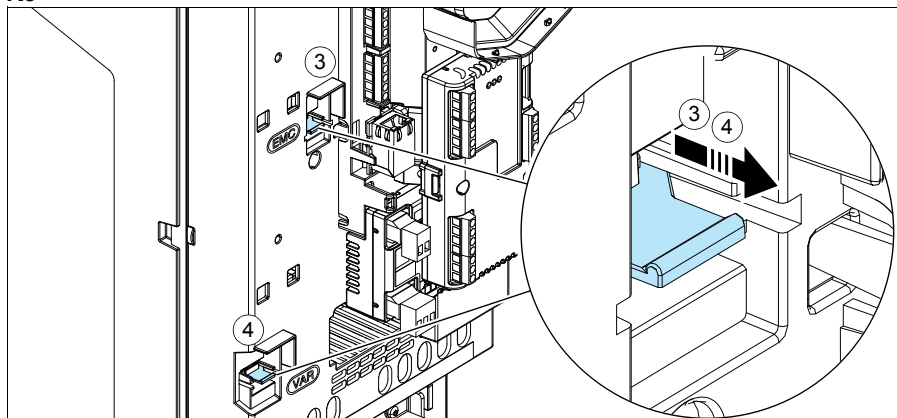
R0-
R4

R0...R2



EN

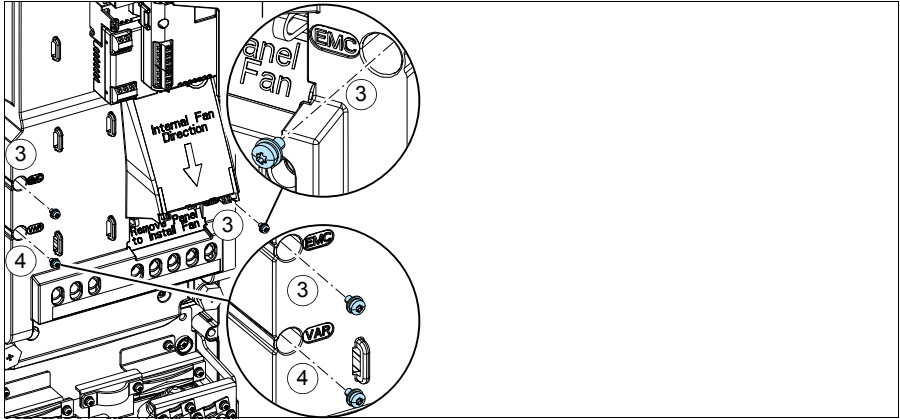
R3



R4

R0-
R4

EN



Connect the power cables

See figures [C1](#) (page [61](#)), [C2](#), [D](#), [E](#), [F1](#), [G1](#), [G1](#) and [G2](#).

1. Remove the rubber grommets from the lead-through plate.

Use symmetrical shielded cable for motor cabling. If the cable shield is the sole PE conductor for drive or motor, make sure that it has sufficient conductivity for the PE.

2. Cut an adequate hole into the rubber grommet. Slide the grommet onto the cable.
3. Prepare the ends of the motor cable as illustrated in figures 3a and 3b (two different motor cable types are shown). **Note:** The bare shield will be grounded 360 degrees. Mark the pigtail made from the shield as a PE conductor with yellow-and-green color.
4. Slide the cable through the hole of the bottom plate and attach the grommet to the hole.
5. Connect the motor cable:
 - Ground the shield 360 degrees by tightening the clamp of the power cable grounding shelf onto the stripped part of the cable (5a).
 - Connect the twisted shield of the cable to the grounding terminal (5b).
 - Connect the phase conductors of the cable to the T1/U, T2/V and T3/W terminals (5c). Tighten the screws to the torque given in the figure.
6. Repeat steps [2...4](#) for the input power cable.
7. Connect the input power cable. Connect the additional PE conductor of the cable (7c). Tighten the screws to the torque given in the figure.
8. Install the grounding shelf for the brake resistor cable.
9. Repeat steps [2...4](#) for the brake resistor cable (if used). Cut off extra phase conductors (if any).
10. Not for ACQ580-01.
11. Install the grounding shelf for the control cables.
12. Put the unused rubber grommets to the holes in the lead-through plate.
13. Secure the cables outside the unit mechanically.
14. Ground the motor cable shield at the motor end. For minimum radio frequency interference, ground the motor cable shield 360 degrees at the lead-through of the motor terminal box.

R0-
R4

EN

Connect the control cables

See figure *R0...R4 Figures H* on page 63. It shows an example with one analog signal cable and one digital signal cable. Make the connections according to the default configuration in use. The default connections of the Water default configuration are shown in section *Default I/O connections* on page 41.

**R0-
R4**

4. Remove the front cover, if not already removed. See section *Switch off the power and open the cover* on page 35.

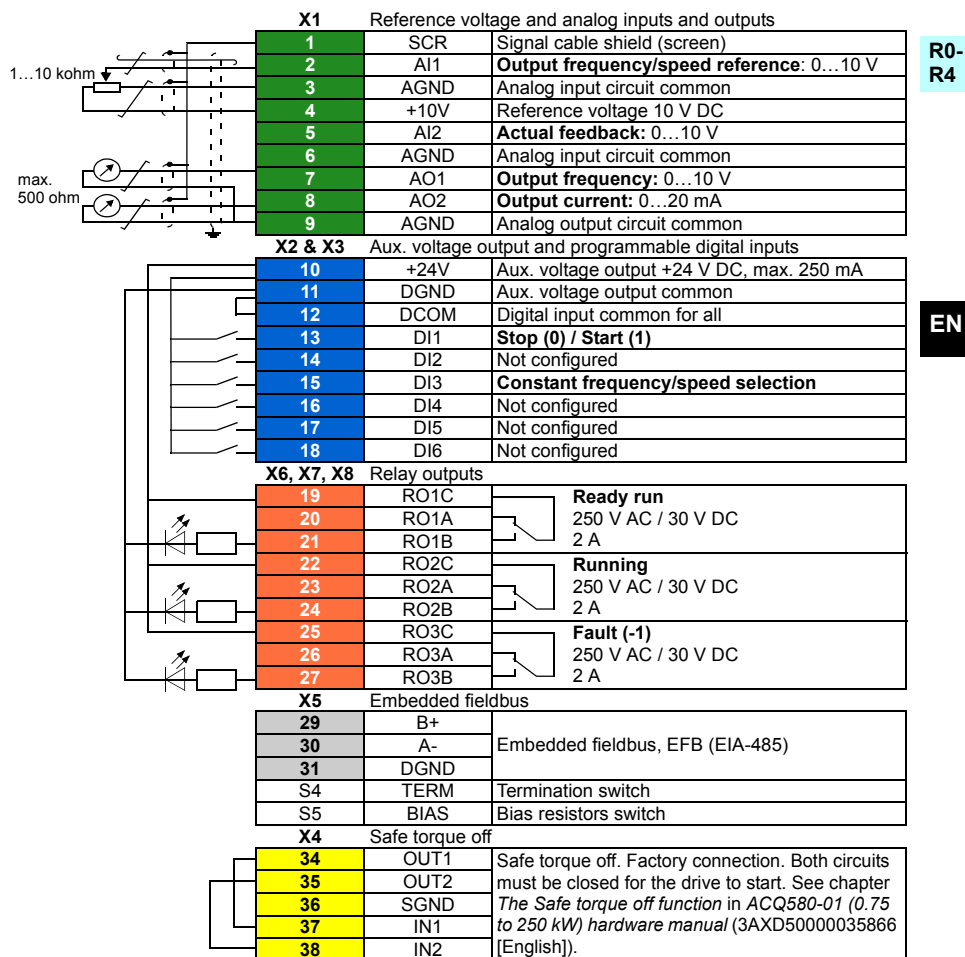
Example of connecting an analog signal cable:

EN

5. Cut an adequate hole into the rubber grommet and slide the grommet onto the cable. Slide the cable through a hole of the bottom plate and attach the grommet to the hole.
 6. Ground the outer shield of the cable 360 degrees under the grounding clamp. Keep the cable unstripped as close to the terminals of the control board as possible. Ground also the pair-cable shields and grounding wire at the SCR1 terminal.
 7. Route the cable as shown in the figure.
 8. Connect the conductors to the appropriate terminals of the control board and tighten to 0.5...0.6 N·m (0.4 lbf·ft).
 9. Tie all control cables to the provided cable tie mounts.
-

Default I/O connections

Default I/O connections of the Water default configuration are shown below.



Total load capacity of the Auxiliary voltage output +24V (X2:10) is 6.0 W (250 mA / 24 V DC).

Wire sizes:

0.2...2.5 mm² (24...14 AWG): Terminals +24V, DGND, DCOM, B+, A-, DGND, Ext. 24V

0.14...1.5 mm² (26...16 AWG): Terminals DI, AI, AO, AGND, RO, STO

Tightening torques: 0.5...0.6 N·m (0.4 lbf·ft)

Install optional modules, if any

See chapter *Electrical installation* in *ACQ580-01 (0.75 to 250 kW) hardware manual* (3AXD50000035866 [English]).

R0-
R4

Reinstall cover

See figure [1](#) on page [64](#).

1. Put the tabs on the inside of the cover top in their counterparts on the housing (1a) and then press the cover at the bottom (1b).
2. Tighten the retaining screw with a screwdriver.

EN

For start-up instructions, see chapter [EN – Quick start-up guide](#) on page [53](#).

EN – R5 Quick installation guide

This guide briefly describes how to install the drive. For complete information on installation, see *ACQ580-01 (0.75 to 250 kW) hardware manual* (3AXD50000035866 [English]). For start-up instructions, see chapter *EN – Quick start-up guide* on page 53.

To read a manual, go to www.abb.com/drives/documents and search for the document number.

R5

Obey the safety instructions



WARNING! Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur:

- If you are not a qualified electrician, do not do electrical installation work.
- Do not work on the drive, motor cable or motor when main power is applied. If the drive is already connected to the input power, wait for 5 minutes after disconnecting the input power.
- Do not work on the control cables when power is applied to the drive or to the external control circuits.
- Make sure that debris from borings and grindings does not enter the drive when installing.
- Make sure that the floor below the drive and the wall where the drive is installed are non-flammable.

EN

Check if capacitors need to be reformed

If the drive has not been powered (either in storage or unused) for over one year, you must reform the capacitors.

You can determine the manufacturing time from the serial number, which you find on the type designation label attached to the drive. The serial number is of format MYYWWRXXXX. YY and WW tell the manufacturing year and week as follows:

YY: 13, 14, 15, ... for 2013, 2014, 2015, ...

WW: 01, 02, 03, ... for week 1, week 2, week 3, ...

For information on reforming the capacitors, see *Converter module capacitor reforming instructions* (3BFE64059629 [English]), available on the Internet at www.abb.com/drives/documents.

Select the power cables

Size the power cables according to local regulations to carry the nominal current given on the type designation label of your drive.

Ensure the cooling

R5

See table [I](#) on page [91](#) (UL: table [II](#) on page [91](#)) for the heat dissipation. The allowed operating temperature range of the drive is -15 to +50 °C (+5 to +122 °F). No condensation or frost is allowed. For more information on the ambient temperature and derating, see chapter *Technical data* in *ACQ580-01 (0.75 to 250 kW) hardware manual* (3AXD50000035866 [English]).

Protect the drive and input power cable

EN

See tables [III](#) (on page [91](#)) and [IV](#) (on page [91](#)); (UL: table [V](#) on page [92](#)) for the fuses.

If you use gG fuses, make sure that the operating time of the fuse is below 0.5 seconds. Follow the local regulations.

Install the drive on the wall

See figure [R5 Figures A](#) on page [65](#).

Check the insulation of the power cables and the motor

Check the insulation of the input cable according to local regulations before connecting it to the drive.

See figure [B](#) on page [65](#).

1. Check the insulation of the motor cable and motor when the cable is disconnected from the drive. Measure the insulation resistance between each phase conductor and then between each phase conductor and the Protective Earth conductor using a measuring voltage of 1000 V DC. The insulation resistance of a typical motor must exceed 100 Mohm (reference value at 25 °C or 77 °F). For the insulation resistance of motors, see the manufacturer's instructions.

Note: Moisture inside the motor casing will reduce the insulation resistance. If moisture is suspected, dry the motor and repeat the measurement.

Switch off the power and open the cover

See figure [B](#) on page [65](#).

2. Switch off the power from the drive.
3. IP21, Remove the module cover: Loosen the retaining screws with a screwdriver (3a) and lift the cover from the bottom outwards (3b) and then up (3c).
4. IP21, Remove the box cover: Loosen the retaining screws with a screwdriver (4a) and slide the cover downwards (4b).
5. IP55, Remove the front cover: Loosen the retaining screws with a screwdriver (4a) and lift the cover from the bottom outwards (4b) and then up (4c).

R5

Check the compatibility with IT (ungrounded) and corner-grounded TN systems

EN

■ EMC filter

The internal EMC filter is not suitable for use on an IT (ungrounded) system or on a corner-grounded TN system. Disconnect the EMC filter before connecting the drive to the supply network. Check the table on page [46](#).



WARNING! Do not install the drive with the internal EMC filter connected on an IT system (an ungrounded power system or a high-resistance-grounded [over 30 ohms] power system), otherwise the system will be connected to ground potential through the EMC filter capacitors of the drive. This can cause danger, or damage the drive.

Do not install the drive with the internal EMC filter connected on a corner-grounded TN system, otherwise the drive will be damaged.

Note: When the internal EMC filter is disconnected, the drive EMC compatibility is considerably reduced.

■ Ground-to-phase varistor

The ground-to-phase varistor is not suitable for use on an IT (ungrounded) system. Disconnect the ground-to-phase varistor before connecting the drive to the supply network. Check the table on page [46](#).



WARNING! Do not install the drive with the ground-to-phase varistor connected on an IT system (an ungrounded power system or a high-resistance-grounded [over 30 ohms] power system), otherwise the varistor circuit can be damaged.

Check from the table below if you have to disconnect the EMC filter (EMC) or ground-to-phase varistor (VAR). For instructions on how to do this, see page 47.

Frame sizes	EMC filter (EMC)	Ground-to-phase varistor (VAR)	Symmetrically grounded TN systems (TN-S systems) ¹	Corner grounded TN systems ²	IT systems (ungrounded or high-resistance grounded [$>30\text{ ohms}$]) ³
R5	EMC (2 screws)	-	Do not disconnect	Frame R5 cannot be used in corner grounded TN systems.	Disconnect
	-	VAR (1 screw)	Do not disconnect		Disconnect

1

Drive

2

Drive

3

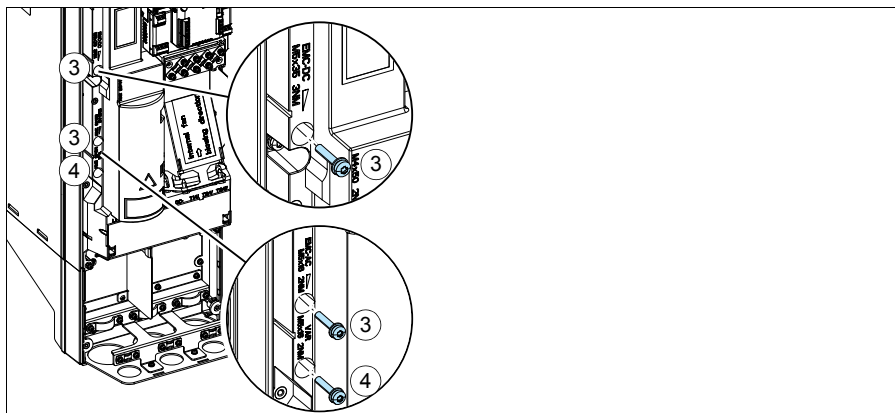
Drive

■ Disconnect EMC filter or ground-to-phase varistor, if needed

To disconnect the internal EMC filter or ground-to-phase varistor, if needed, do as follows:

1. Switch off the power from the drive.
2. Open the front cover, if not already opened, see figure [B](#) on page [65](#).
3. To disconnect the internal EMC filter, remove the two EMC screws.
4. To disconnect the ground-to-phase varistor, remove the varistor screw.

R5



EN

Connect the power cables

See figures [C](#) (page 66), [D](#) and [E](#).

1. Attach the residual voltage warning sticker in the local language next to the control board.
2. Remove the shroud on the power cable terminals by releasing the clips with a screwdriver and pulling the shroud out.

R5

Use symmetrical shielded cable for motor cabling. If the cable shield is the sole PE conductor for drive or motor, make sure that it has sufficient conductivity for the PE.

3. Cut an adequate hole into the rubber grommet. Slide the grommet onto the cable.
4. Prepare the ends of the motor cable as illustrated in figures 4a and 4b (two different motor cable types are shown). **Note:** The bare shield will be grounded 360 degrees. Mark the pigtail made from the shield as a PE conductor with yellow-and-green color.
5. Slide the cable through the hole of the bottom plate and attach the grommet to the hole.
6. Connect the motor cable:
 - Ground the shield 360 degrees by tightening the clamp of the power cable grounding shelf onto the stripped part of the cable (6a).
 - Connect the twisted shield of the cable to the grounding terminal (6b).
 - Connect the phase conductors of the cable to the T1/U, T2/V and T3/W terminals (6c). Tighten the screws to the torque given in the figure.
7. Repeat steps [3...5](#) for the input power cable.
8. Connect the input power cable. Tighten the screws to the torque given in the figure.
9. Install the cable box plate. Position the plate and tighten the screw.
10. Reinstall the shroud on the power terminals by putting the tabs at the top of the shroud in their counterparts on the drive frame and then pressing the shroud in place.
11. Secure the cables outside the unit mechanically.
12. See figure [R5 Figures F](#) (page 67). Ground the motor cable shield at the motor end. For minimum radio frequency interference, ground the motor cable shield 360 degrees at the lead-through of the motor terminal box.

EN

Connect the control cables

See figure [H](#) on page [68](#). It shows an example with one analog signal cable and one digital signal cable. Make the connections according to the default configuration in use. The default connections of the Water default configuration are shown in section [Default I/O connections](#) on page [50](#).

3. Remove the front cover, if not already removed. See section [Switch off the power and open the cover](#) on page [45](#).

R5

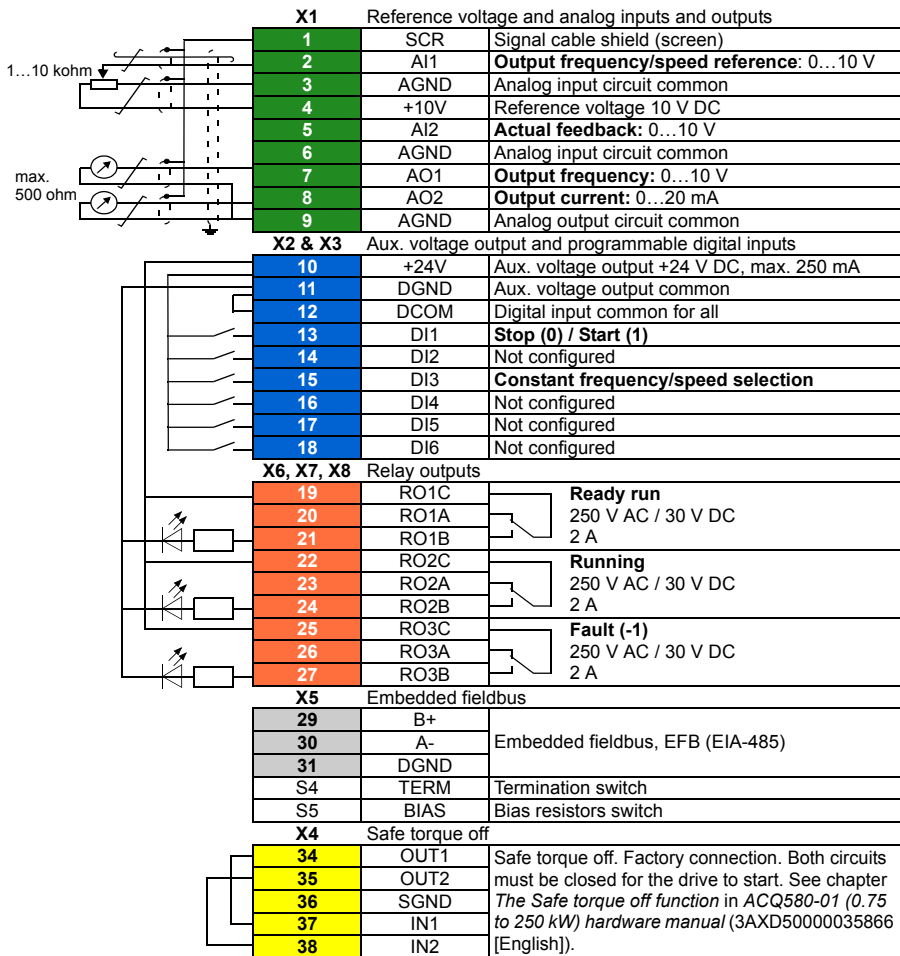
Example of connecting an analog signal cable:

4. Cut an adequate hole into the rubber grommet and slide the grommet onto the cable. Slide the cable through a hole of the bottom plate and attach the grommet to the hole.
5. Ground the outer shield of the cable 360 degrees under the grounding clamp. Keep the cable unstripped as close to the terminals of the control board as possible. Ground also the pair-cable shields and grounding wire at the SCR1 terminal.
6. Route the cable as shown in the figure.
7. Connect the conductors to the appropriate terminals of the control board and tighten to 0.5...0.6 N·m (0.4 lbf·ft).
8. Tie all control cables to the provided cable tie mounts.

EN

Default I/O connections

Default I/O connections of the Water default configuration are shown below.



Total load capacity of the Auxiliary voltage output +24V (X2:10) is 6.0 W (250 mA / 24 V DC).

Wire sizes:

0.2...2.5 mm² (24...14 AWG): Terminals +24V, DGND, DCOM, B+, A-, DGND, Ext. 24V

0.14...1.5 mm² (26...16 AWG): Terminals DI, AI, AO, AGND, RO, STO

Tightening torques: 0.5...0.6 N·m (0.4 lbf·ft)

Install optional modules, if any

See chapter *Electrical installation* in ACQ580-01 (0.75 to 250 kW) hardware manual (3AXD50000035866 [English]).

Reinstall cover

See figure [H](#) on page [68](#).

1. IP21, Reinstall the box cover: Slide the cover upwards (1a) and tighten the retaining screws (1b).
2. IP21, Reinstall the module cover: Put the tabs on the inside of the cover top in their counterparts on the housing (2a), press the cover at the bottom (2b) and tighten the retaining screws (2c).
3. IP55, Reinstall the front cover: Put the tabs on the inside of the cover top in their counterparts on the housing (3a), press the cover at the bottom (3a) and tighten the retaining screws (3b).

For start-up instructions, see chapter [EN – Quick start-up guide](#) on page [53](#).

R5

EN

R5

EN

EN – Quick start-up guide

This guide describes how to start-up the drive using the First start assistant on the Hand-Off-Auto control panel. For complete information on start-up, see ACQ580 *firmware manual* (3AXD50000035867 [English]).

Before you start

Ensure that the drive has been installed as described in chapter [EN – R0...R4 Quick installation guide](#) on page 33 (frames R0...R4) or in chapter [EN – R5 Quick installation guide](#) page 43 (frame R5).

R0-
R9

Start-up with the First start assistant on a Hand-Off-Auto control panel

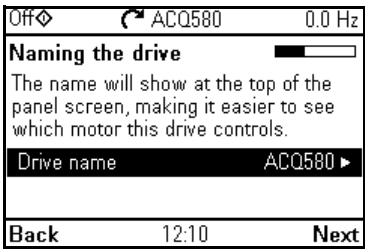
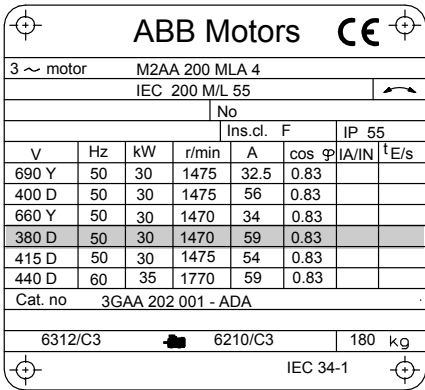
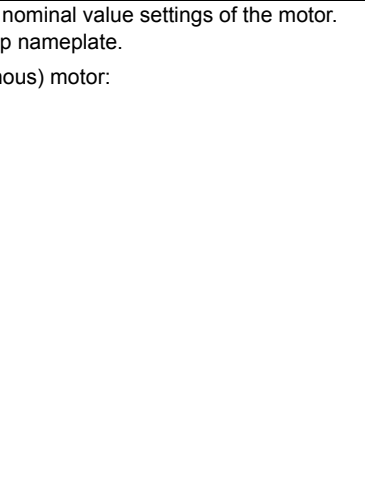
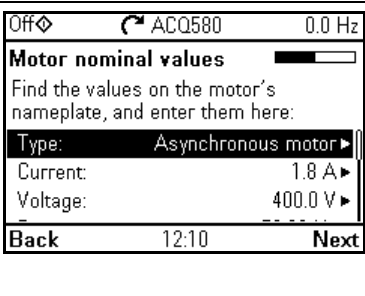
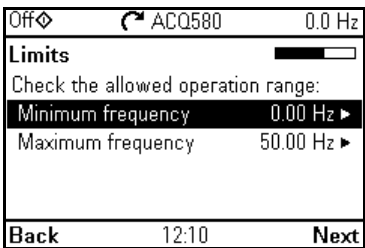
EN

Safety	
☐	Make sure that the installation work is complete. Make sure that cover of the drive and the cable box, if included, are on place.
☐	 Check that the starting of the motor does not cause any danger. De-couple the driven machine if there is a risk of damage in case of an incorrect direction of rotation.
Hints on using the assistant control panel	
The two commands at the bottom of the display (Options and Menu in the figure on the right), show the functions of the two softkeys  and  located below the display. The commands assigned to the softkeys vary depending on the context. Use keys , ,  and  to move the cursor and/or change values depending on the active view. Key  shows a context-sensitive help page.	
1 – First start assistant guided settings: Language, date and time, and motor nominal values	
☐	Have the motor or pump name plate data at hand. Power up the drive.

R0-
R9

EN

☐	The First start assistant guides you through the first start-up. The assistant begins automatically. Wait until the control panel enters the view shown on the right. Select the language you want to use by highlighting it (if not already highlighted) and pressing (OK). Note: After you have selected the language, it takes a few minutes for the control panel to wake up.	
☐	Select Start set-up and press (Next).	
☐	Set the date and time as well as date and time display formats. - Go to the edit view of a selected row by pressing . - Scroll the view with and . Go to the next view by pressing (Next).	
☐	To change a value in an edit view: - Use and to move the cursor left and right. - Use and to change the value. - Press (Save) to accept the new setting, or press (Cancel) to go back to the previous view without making changes.	
☐	Change the units shown on the panel if needed. - Go to the edit view of a selected row by pressing . - Scroll the view with and . Go to the next view by pressing (Next).	

☐	To give the drive a name that will be shown at the top, press . If you do not want to change the default name (ACQ580), continue by pressing  (Next). For information on editing text, see <i>ACQ580 firmware manual</i> (3AXD50000035867 [English]). Hint: Name the drive, for example, Pump 1.	 Naming the drive The name will show at the top of the panel screen, making it easier to see which motor this drive controls. Drive name ACQ580  Back 12:10 Next
	Refer to the motor or pump nameplate for the following nominal value settings of the motor. Enter the values <u>exactly</u> as shown on the motor or pump nameplate. Example of a nameplate of an induction (asynchronous) motor: 	 Motor nominal values Find the values on the motor's nameplate, and enter them here: Type: Asynchronous motor  Current: 1.8 A  Voltage: 400.0 V  Back 12:10 Next
☐	Check that the motor data is correct. Values are predefined on the basis of the drive size but you should verify that they correspond to the motor. Start with the motor type. - Go to the edit view of a selected row by pressing . - Scroll the view with  and . Motor nominal $\cos\Phi$ and nominal torque are optional. Press  (Next) to continue.	 Limits Check the allowed operation range: Minimum frequency 0.00 Hz  Maximum frequency 50.00 Hz  Back 12:10 Next
☐	Adjust the limits according to your needs. - Go to the edit view of a selected row by pressing . - Scroll the view with  and . Go to the next view by pressing  (Next).	 Limits Check the allowed operation range: Minimum frequency 0.00 Hz  Maximum frequency 50.00 Hz  Back 12:10 Next

R0-R9



EN

R0-
R9

EN

□	If you want to make a backup of the settings made so far, select Backup and press (Next). If you do not want to make a backup, select Not now and press (Next).	
□	The first start is now complete and the drive is ready for use. Press (Done) to enter the Home view.	
□	The Home view monitoring the values of the selected signals is shown on the panel. For changing the signals and their display style shown in the Home view, see <i>ACS-AP-x assistant control panels user's manual</i> (3AUA0000085685 [English]).	

2 – Additional settings in the Primary settings menu

□	Make any additional adjustments, for example, pump protections, starting from the Main menu – press (Menu) to enter the Main menu. Select Primary settings and press (Select) (or). In the Primary settings menu, select Pump protections and press (Select) (or). To get more information on the Primary settings menu items, press to open the help page.	
---	--	--

3 – Hand/Off/Auto operation

- ☐ The drive can be in remote control or local control, and in local control there are additionally two different modes.

Remote control: Drive is controlled from the I/O or the fieldbus.

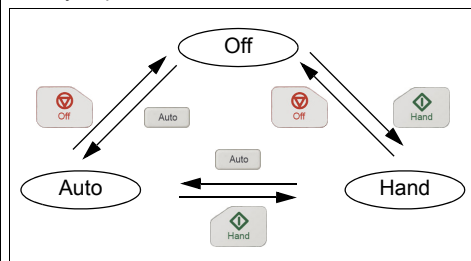
- Top row of the view shows Auto.

Local control: Drive is controlled from the control panel.

- Top row of the view shows Off, that is, the drive is in the Off mode. Drive is stopped.
- Top row of the view shows Hand, that is, the drive is in the Hand mode. Drive is running. The initial reference in the Hand mode is copied from the drive reference.

Symbol $\diamond$ on the top row indicates that you can change the reference with $\blacktriangle$ and $\blacktriangledown$.

The following diagram shows the state transitions when you press the Hand, Off or Auto button:



Note: When you restart the drive while fault 7081 Control panel loss is active, the mode changes from Hand or Off to Auto.

Auto	ACQ580	30.0 Hz
Output frequency	Hz	30.00
Motor current	A	0.46
Motor torque	%	8.9
12:30		Menu

Off $\diamond$	ACQ580	0.0 Hz
Output frequency	Hz	0.00
Motor current	A	0.00
Motor torque	%	0.0
12:37		Menu

Hand $\diamond$	ACQ580	$\diamond$ 30.0 Hz
Output frequency	Hz	30.00
Motor current	A	0.46
Motor torque	%	8.8
Reference	12:38	Menu

Off $\diamond$	ACQ580	0.0 Hz
Fault 7081 Aux code: 0000 0000 Control panel loss 12:41:43 Control panel loss fault		
Hide	12:42	Reset

R0-R9



EN



Compliance with the European Machinery Directive 2006/42/EC

Declaration of conformity



EU Declaration of Conformity

(According to Machinery Directive 2006/42/EC)

R5

We

Manufacturer: ABB Oy, Drives
Address: Hiomotie 13, P.O Box 184, 00381 Helsinki, Finland.

hereby declare that the product

ACQ580-01 (frame sizes R0, R1, R2, R3, R4, R5, R6, R7, R8 and R9)

with regard to the following safety function

Safe torque off

fulfils all the relevant safety component requirements of EC Machinery Directive 2006/42/EC, when the listed safety function is used for safety component functionality.

The following harmonized standards below were used:

EN 61800-5-2: 2007	<i>Adjustable speed electrical power drive systems – Part 5-2: Safety requirements - Functional</i>
EN 62061: 2015	<i>Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems</i>
EN ISO 13849-1: 2008 + AC: 2009	<i>Safety of machinery – Safety-related parts of control systems. Part 1: General requirements</i>
EN ISO 13849-2: 2012	<i>Safety of machinery – Safety-related parts of the control systems. Part 2: Validation</i>
EN 60204-1:2006 + A1:2009 + AC:2010	<i>Safety of machinery – Electrical equipment of machines – Part 1: General requirements</i>

Other used standards:

IEC 61508 ed. 2: 2010	Functional safety of electrical / electronic / programmable electronic safety-related systems
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The products referred in this Declaration of Conformity fulfil the relevant provisions of the Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC. Declaration of conformity according to these directives is available from the manufacturer.

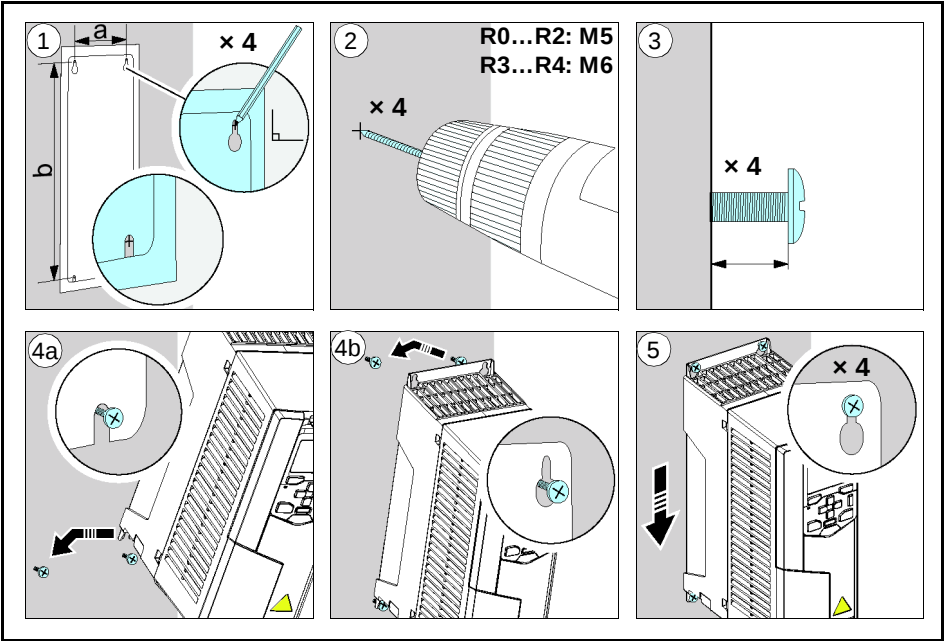
Person authorized to compile the technical file:

Name: Risto Mynttinen
Address: P.O. Box 184, FIN-00381 Helsinki, Finland

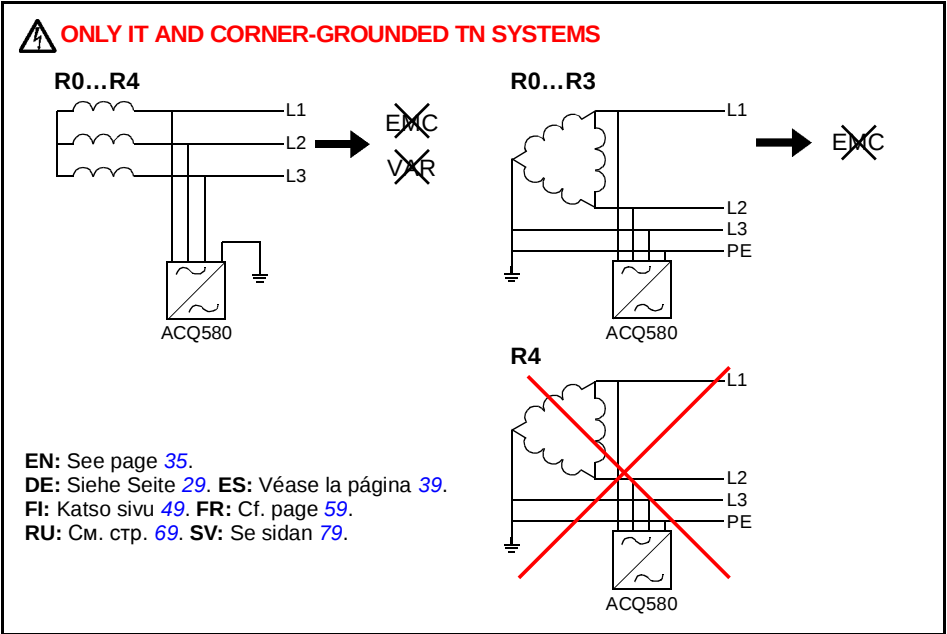
Helsinki, 2016-02-24


Tuomo Höysniemi
Vice President
ABB Oy

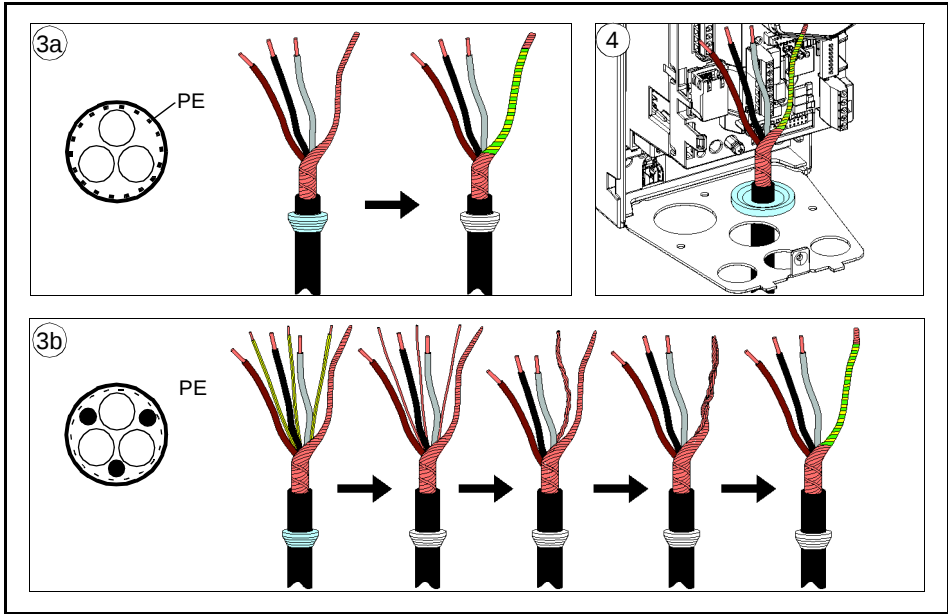
R0...R4 Figures A



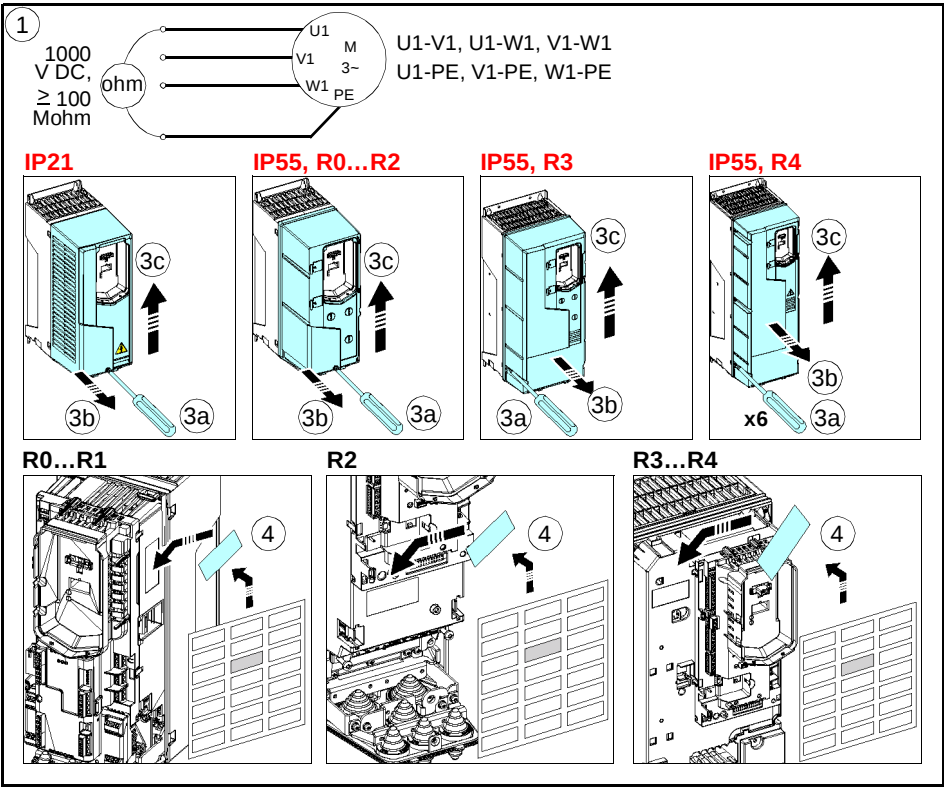
B2



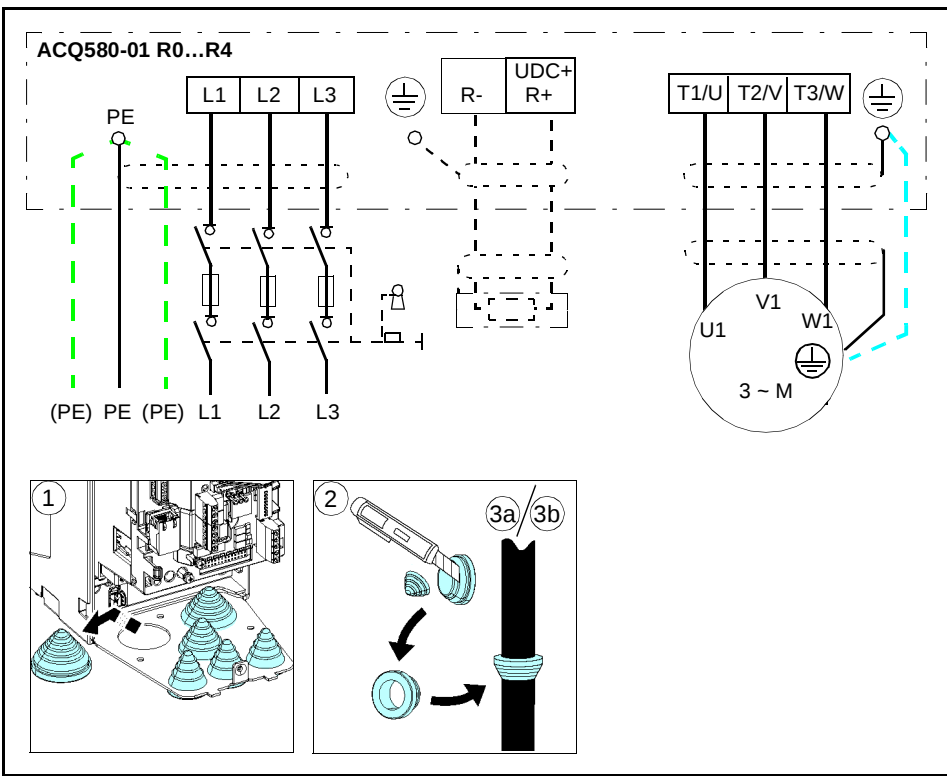
C2



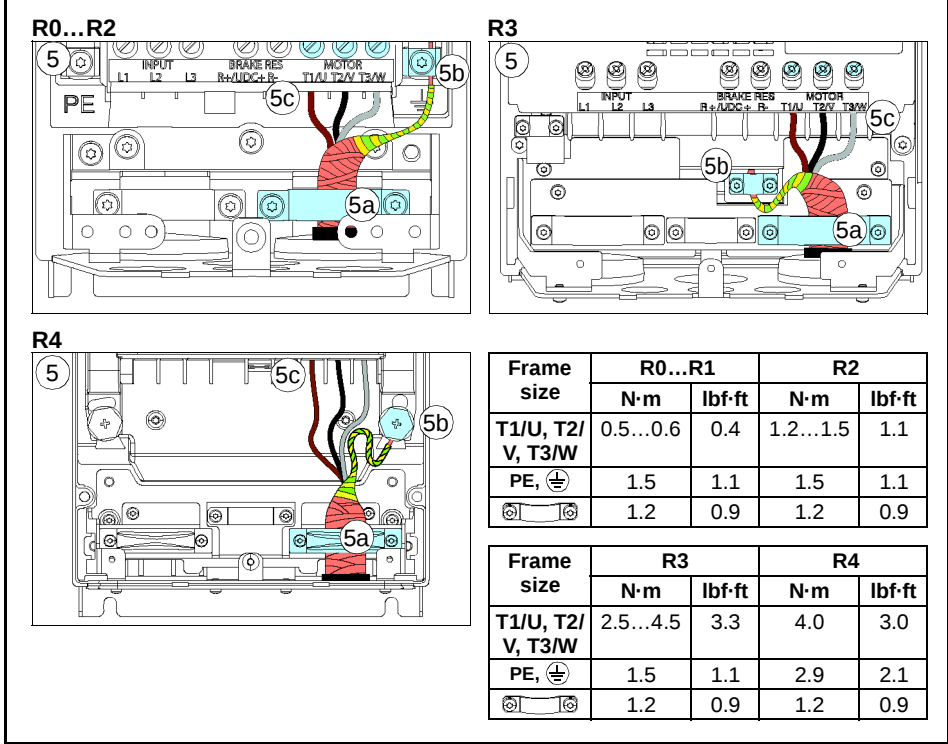
B1



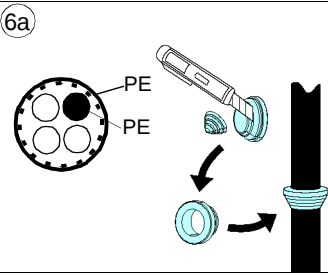
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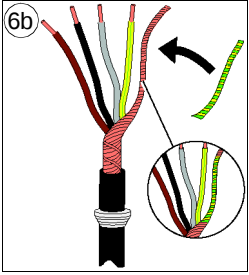
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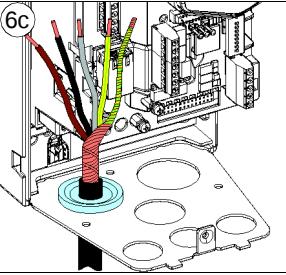
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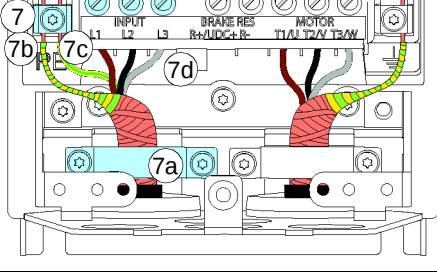
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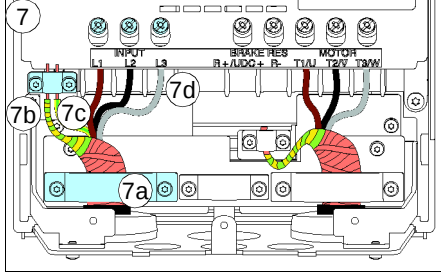
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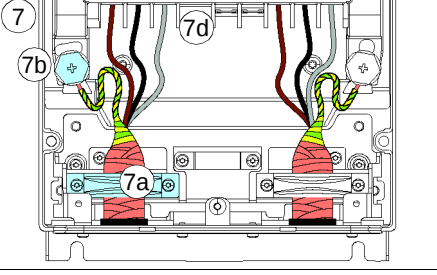
R0...R2



R3



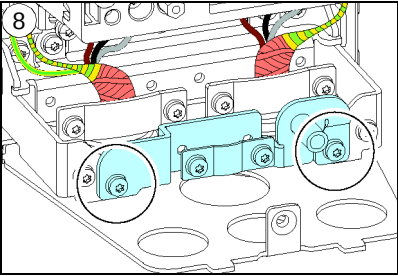
R4



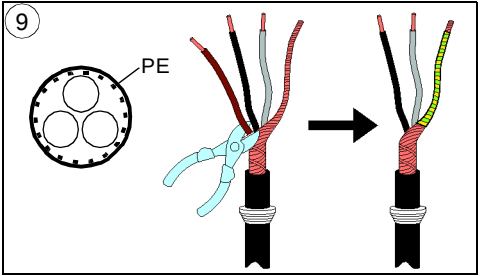
Frame size	R0...R1		R2	
	N·m	lbf·ft	N·m	lbf·ft
L1, L2, L3	0.5...0.6	0.4	1.2...1.5	1.1
PE, $\oplus$	1.5	1.1	1.5	1.1
	1.2	0.9	1.2	0.9

Frame size	R3		R4	
	N·m	lbf·ft	N·m	lbf·ft
L1, L2, L3	2.5...4.5	3.3	4.0	3.0
PE, $\oplus$	1.5	1.1	2.9	2.1
	1.2	0.9	1.2	0.9

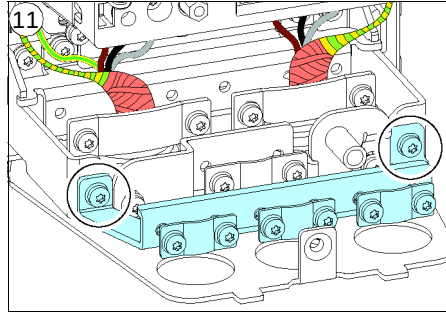
R0...R3



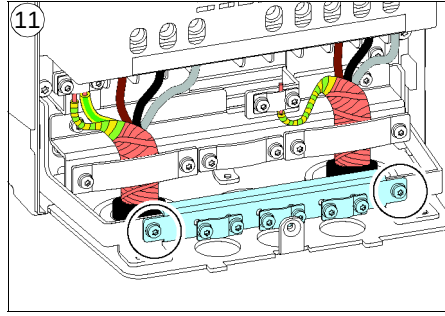
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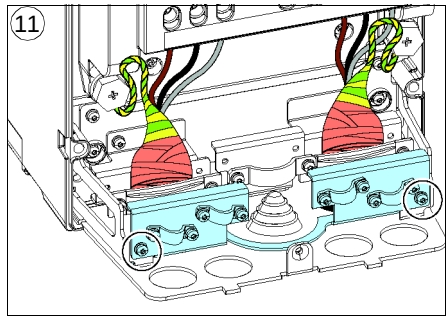
R0...R2



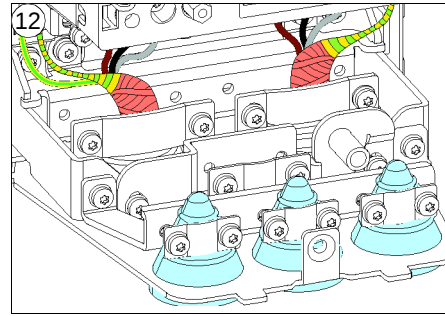
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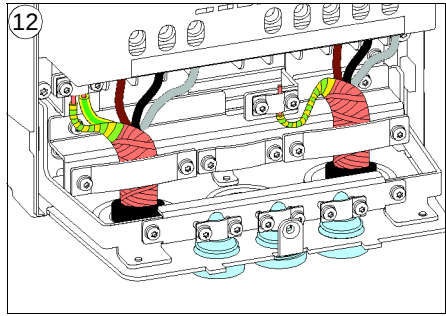
R4



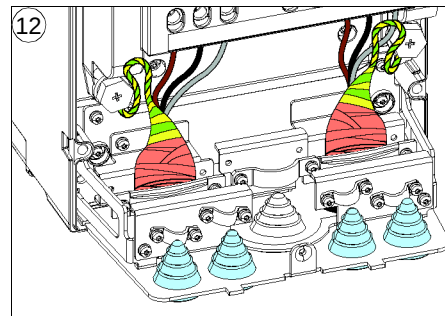
R0...R2



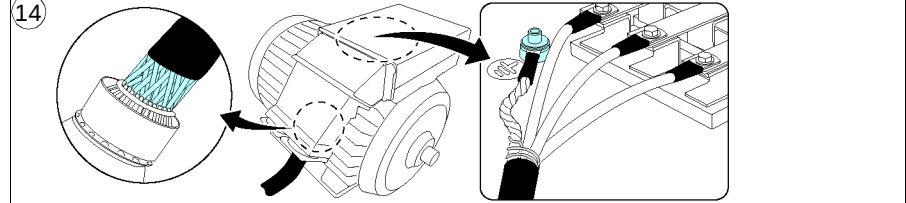
R3



R4

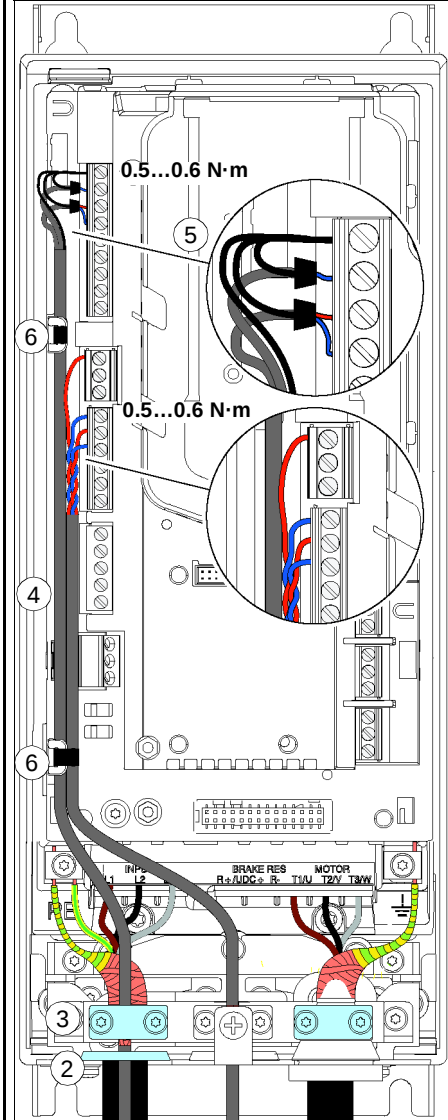


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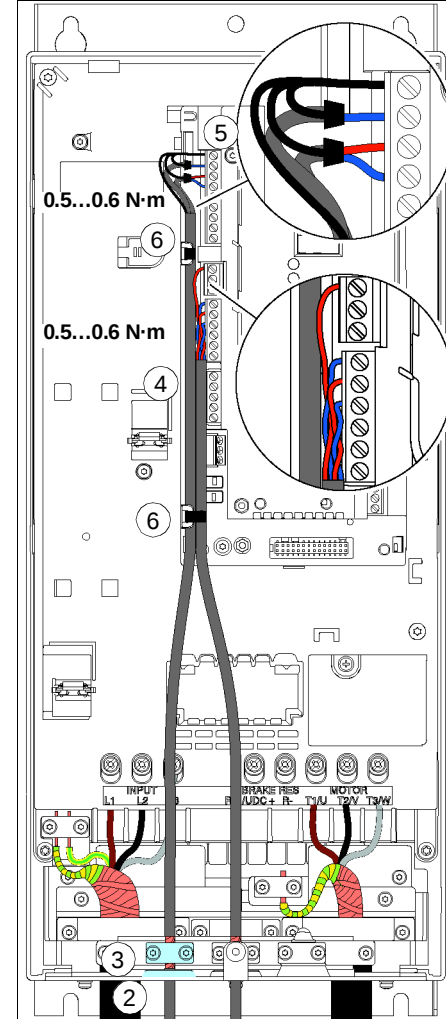




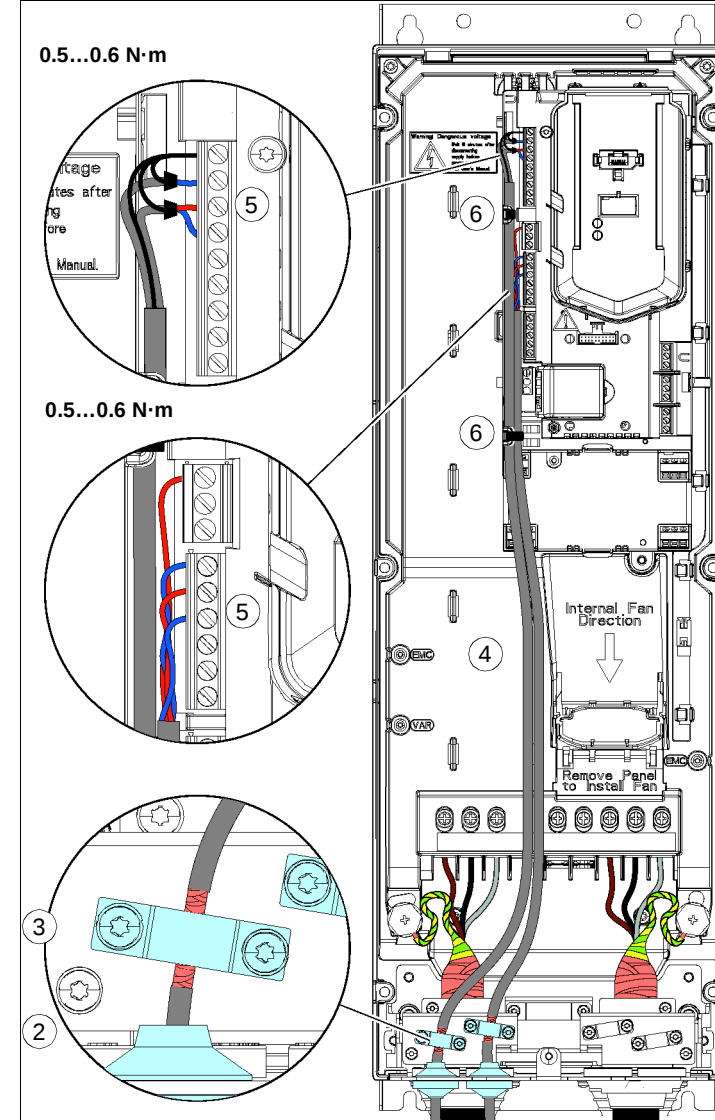
R0...R2

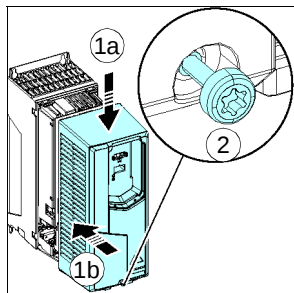
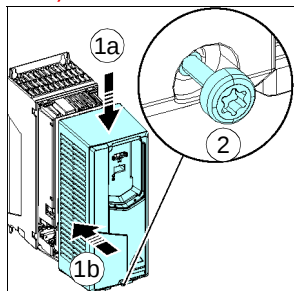
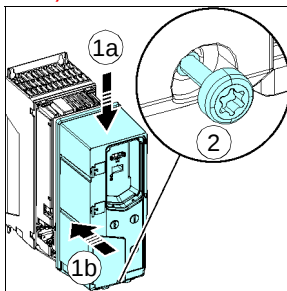
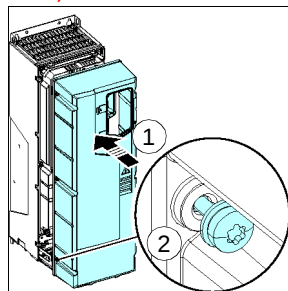


R3

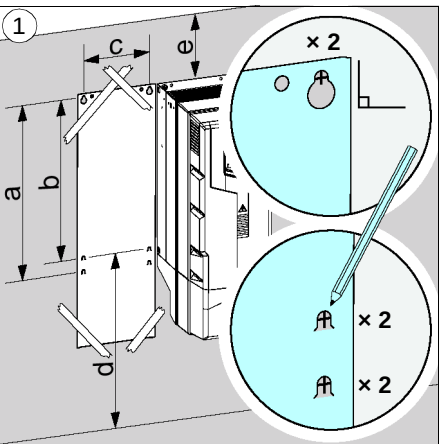


R4



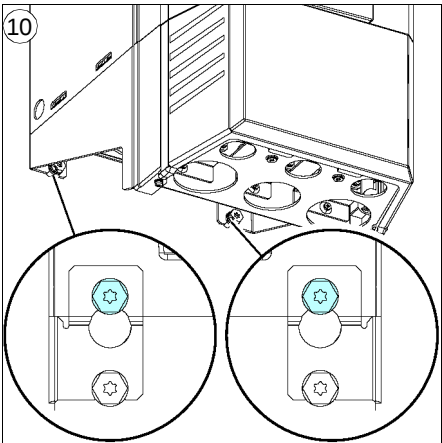
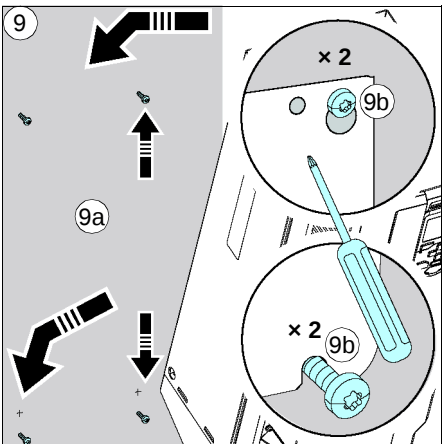
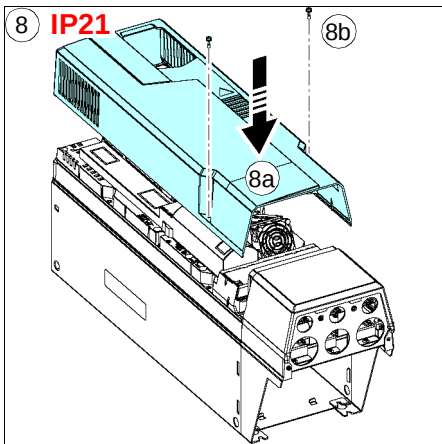
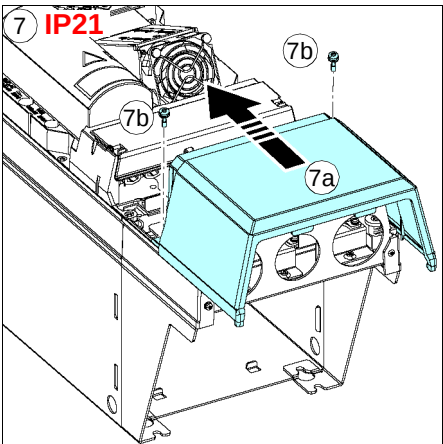
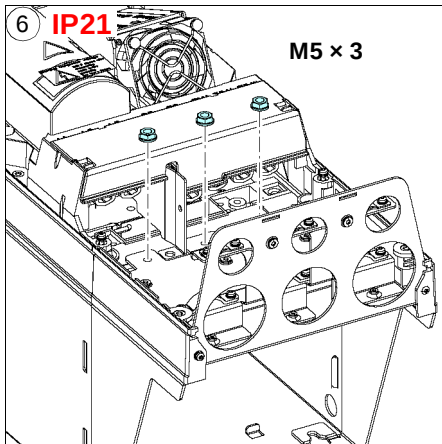
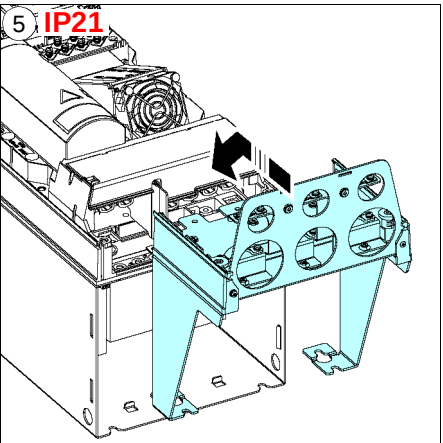
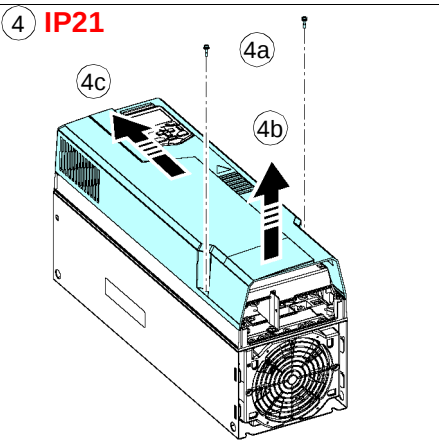
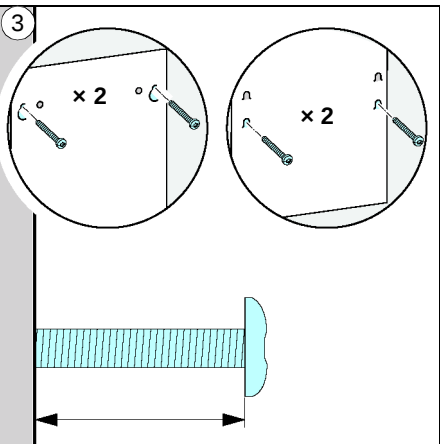
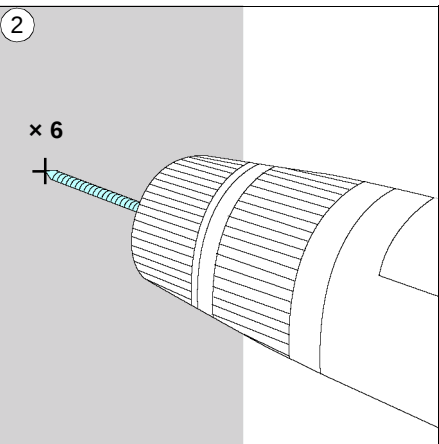
IP21**IP55, R0...R2****IP55, R3****IP55, R4**

R5 Figures A

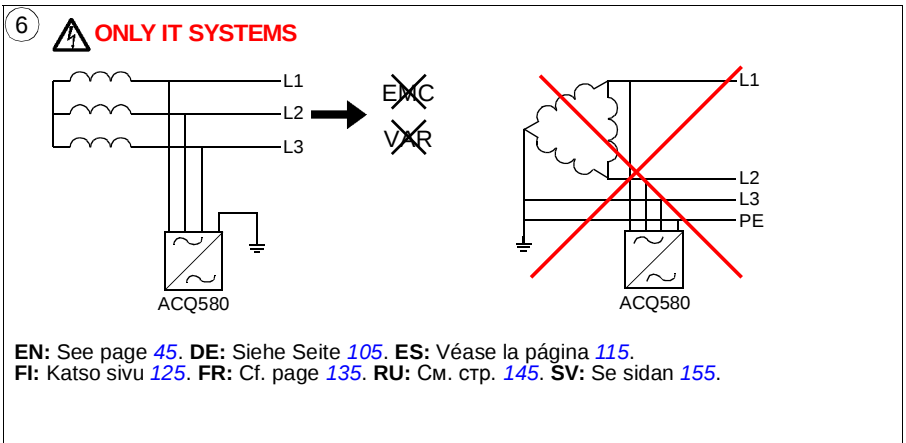
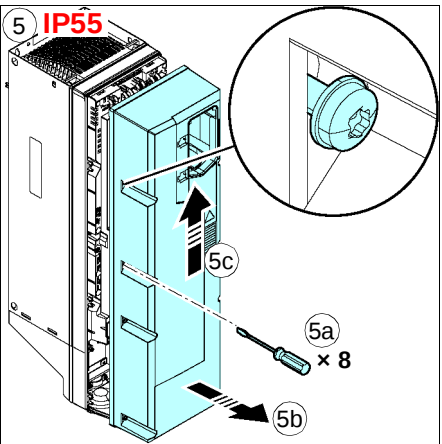
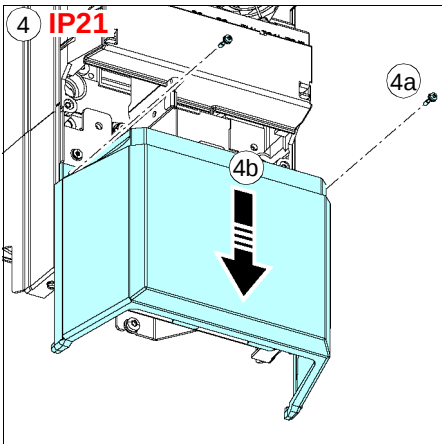
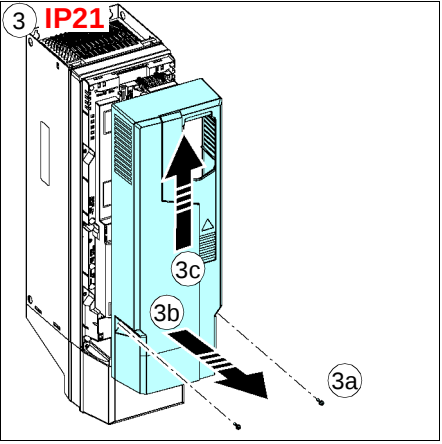
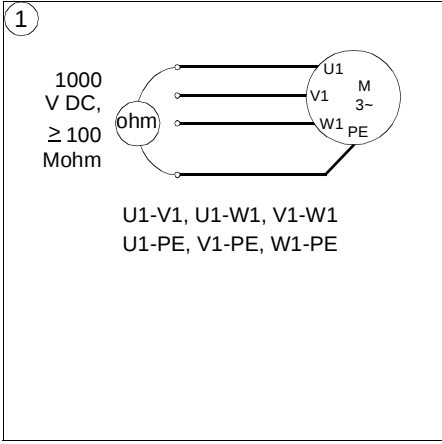


	R5 IP21		R5 IP55	
	mm	in	mm	in
a	612	24.09	612	24.09
b	581	22.87	581	22.87
c	160	6.30	160	6.30
d >	200	7.9	200	7.9
e >	200	7.9	200	7.9

	R5 IP21		R5 IP55	
	kg	lb	kg	lb
	28.3	62.4	28.6	63.1

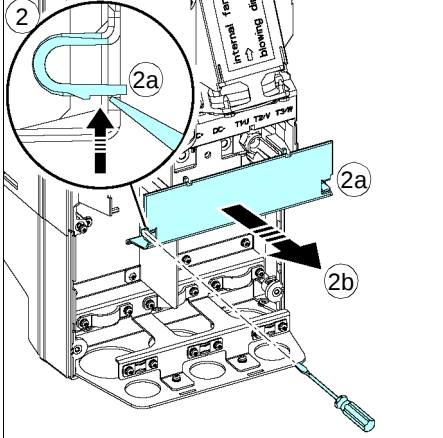
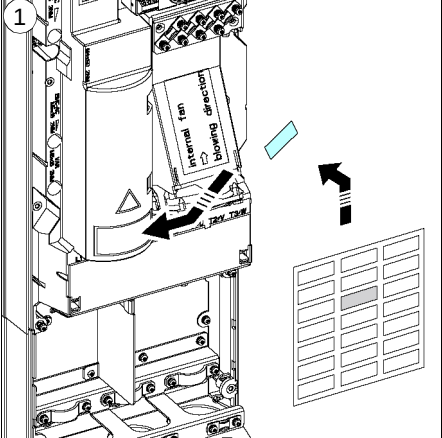


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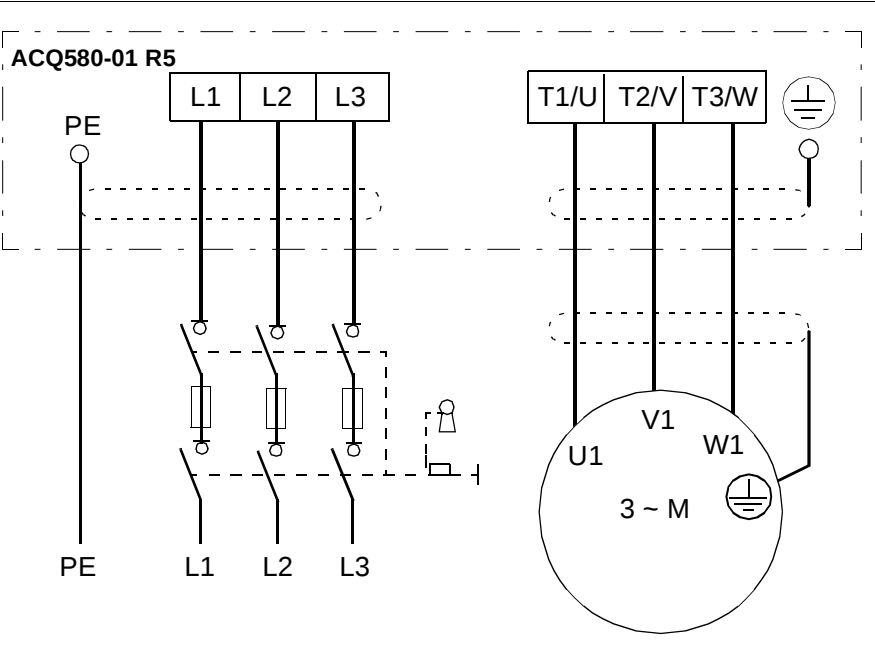


EN: See page 45. DE: Siehe Seite 105. ES: Véase la página 115.
FI: Katso sivu 125. FR: Cf. page 135. RU: См. стр. 145. SV: Se sidan 155.

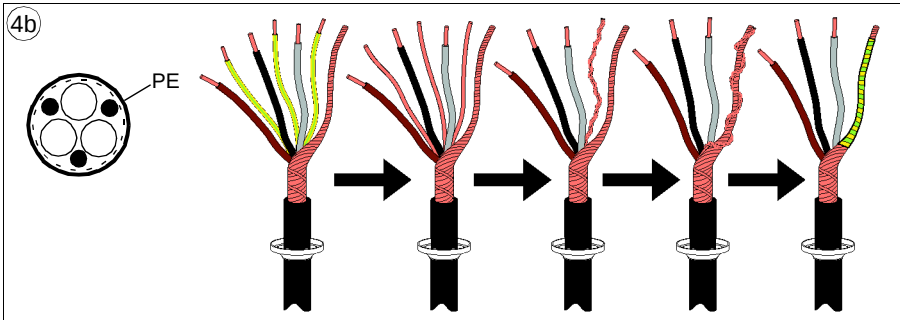
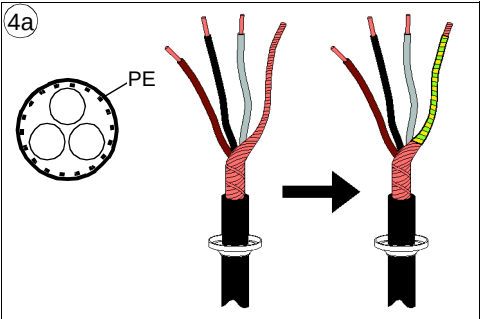
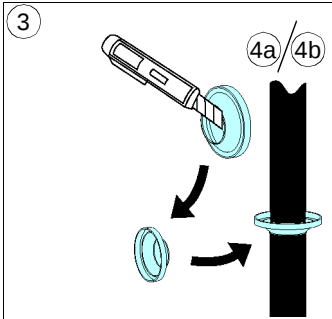
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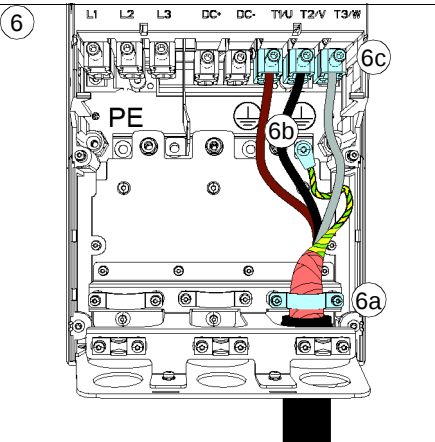
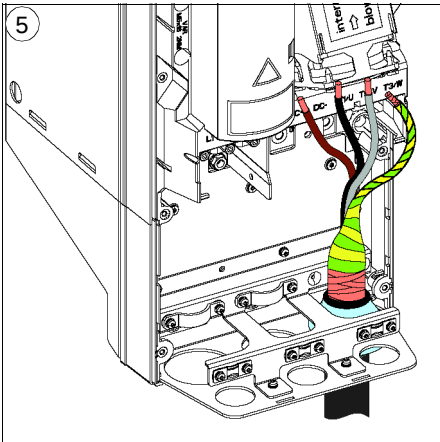


ACQ580-01 R5



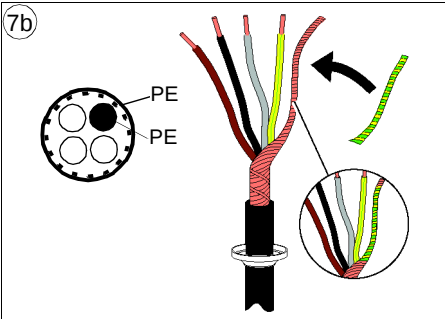
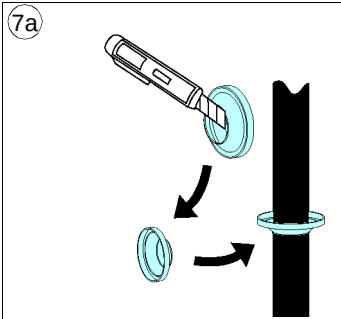
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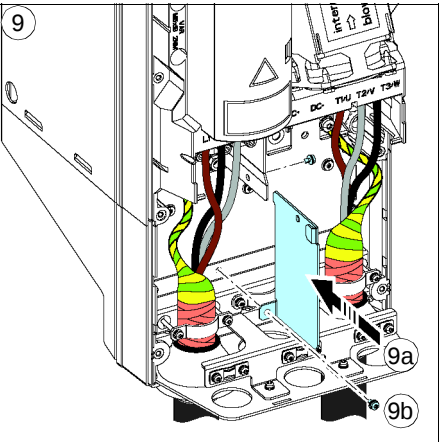
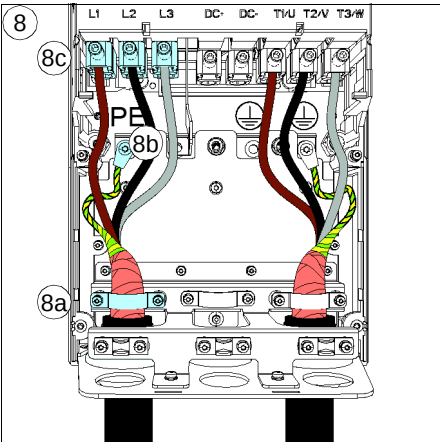




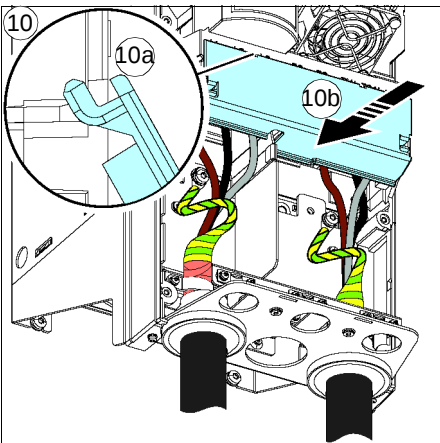
Frame size	T1/U, T2/V, T3/W		PE, $\perp$				
	N·m	lbf·ft	M	N·m	lbf·ft	N·m	lbf·ft
R5	5.6	4.1	M5	4.5	3.3	1.2	0.9

E



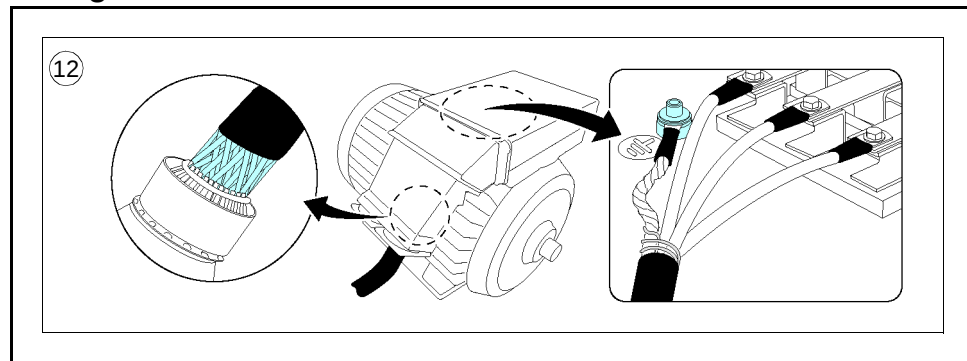


Frame size	L1, L2, L3,		PE, $\perp$				
	N·m	lbf·ft	M	N·m	lbf·ft	N·m	lbf·ft
R5	5.6	4.1	M5	4.5	3.3	1.2	0.9

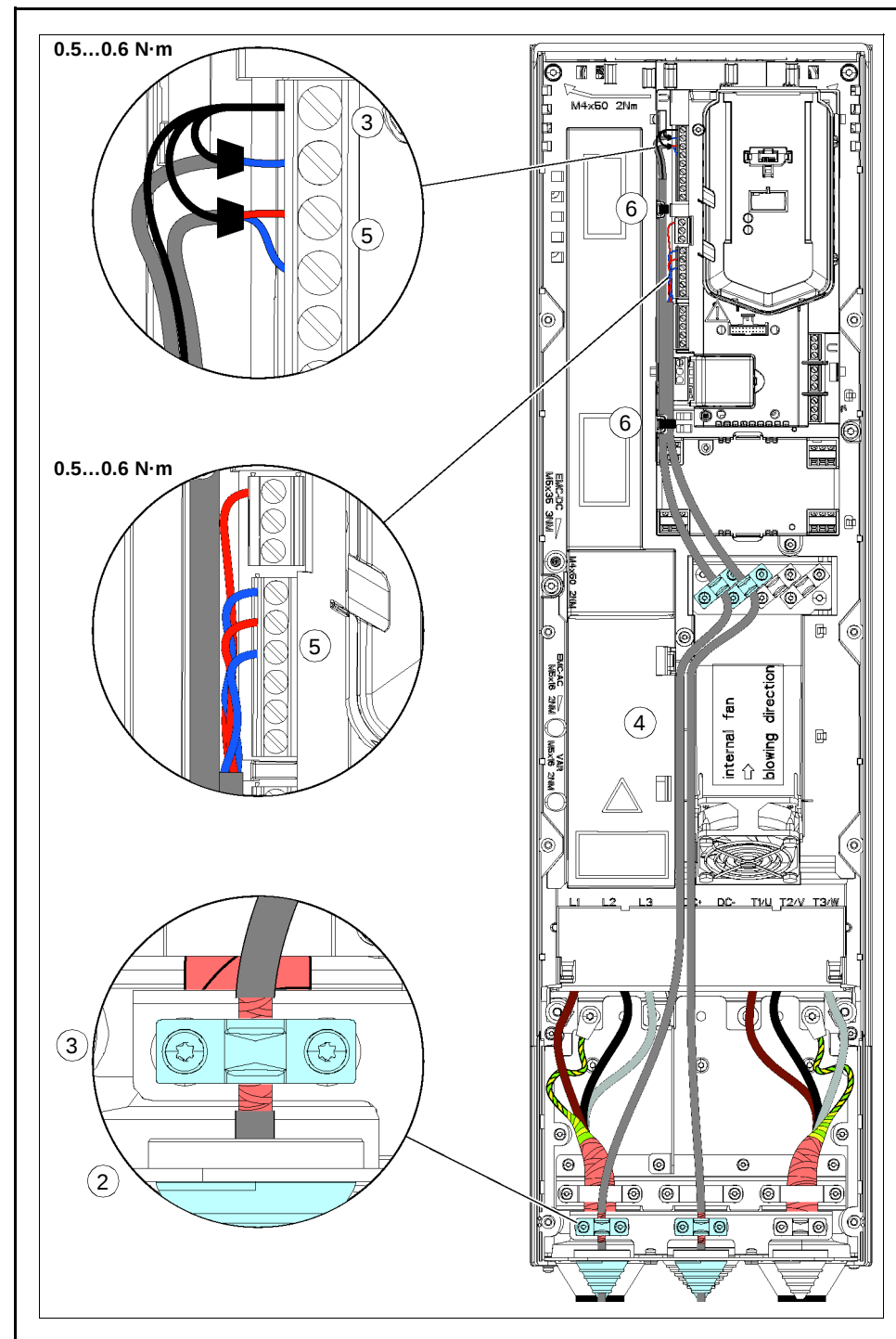




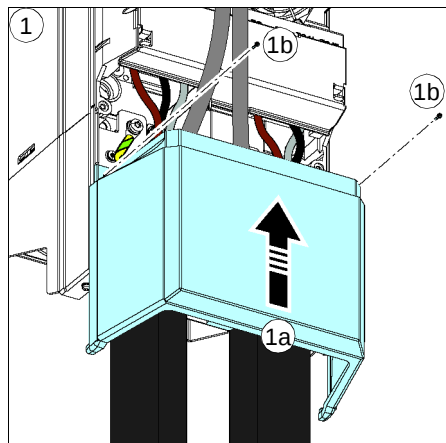
R5 Figures F



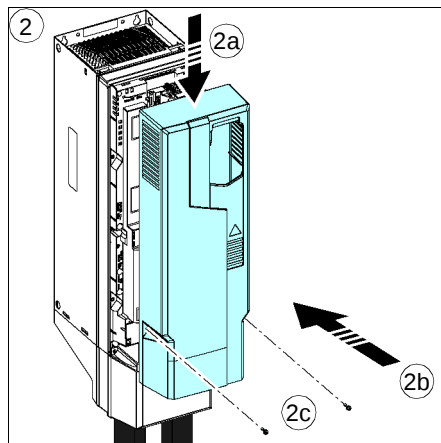
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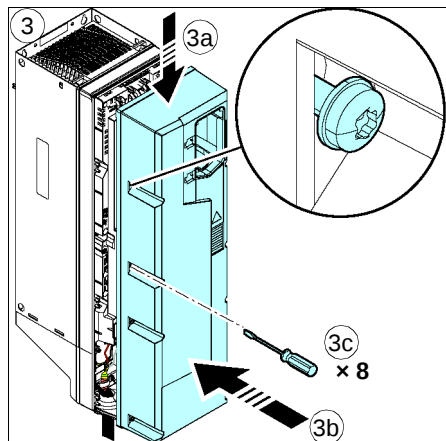
IP21



IP21



IP55



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