

EXPERT

EXAL18V-160



Powered by



安全规章



请阅读所有安全规章和指示。
不遵照以下警告和说明可能导致电击、着火和/或严重伤害。

妥善保存本使用说明书。

在完全了解机器的所有功能，以及能够不受限制地执行各功能或取得相关的使用指示之后，才能够使用本充电器。

- ▶ **儿童和身体、感官或精神上有缺陷或缺乏经验与知识的人员不得使用本充电器。对于八岁以上的儿童和身体、感官或精神上有缺陷或缺乏经验与知识的人员，倘若其得到负责其安全的人员监护或接受过监护人有关充电器使用的指导并了解到可能的危险，则可以使用本充电器。否则会有误操作和人身伤害的危险。**
- ▶ **在使用、清洁和保养时请看管好儿童。确保儿童不会使用本充电器玩耍。**
- ▶ **只能给容量在1.3安培小时以上的Bosch锂离子电池或AMPShare合作款电池充电。电池电压必须与充电器的电池的充电电压相匹配。切勿给非充电型电池充电。否则存在着着火和爆炸的危险。**



仅在密闭空间内使用本充电器，并使其远离潮湿。水进入充电器将增加电击危险。

- ▶ **保持充电器的清洁。污染会产生触电的危险。**
- ▶ **每次使用前都要检查充电器，包括电源线和插头。一旦发现充电器损坏，请勿使用。请勿自行打开充电器，只能由Bosch或由经授权的客户服务中心用原厂配件进行维修。损坏的充电器、电源线和插头会增加使用者触电的危险。**
- ▶ **不要在可燃的底板（如纸张、织物等）上或可燃环境中使用充电器。因充电器在充电时会变热，存在火灾危险。**
- ▶ **不要盖住充电器的通风孔。否则充电器会过热并且无法正常工作。**
- ▶ **只用制造商规定的充电器充电。将适用于某种电池盒的充电器用到其他电池盒时会发生着火危险。**
- ▶ **如果充电电池损坏或者未按照规定使用，充电电池中也会散发出有毒蒸汽。工作场所必须保持空气流通，如果身体有任何不适必须马上就医。蓄电池散发的蒸汽会刺激呼吸道。**
- ▶ **在滥用条件下，液体会从电池中溅出；避免接触。如果意外碰到了，用水冲洗。如果液体碰到了眼睛，还要寻求医疗帮助。从电池中溅出的液体会发生腐蚀或燃烧。**
- ▶ **使用过程中，请将家用电器的电源插头完全插入电源插座中，并保持电源插头与插座接触良好。**
- ▶ **产品出现异常噪声、异常气味、异常高温或故障时，请立即停止使用，关闭开关，切断电源。**
- ▶ **从插座上拔下插头时，不应対电源线施加拉力。**

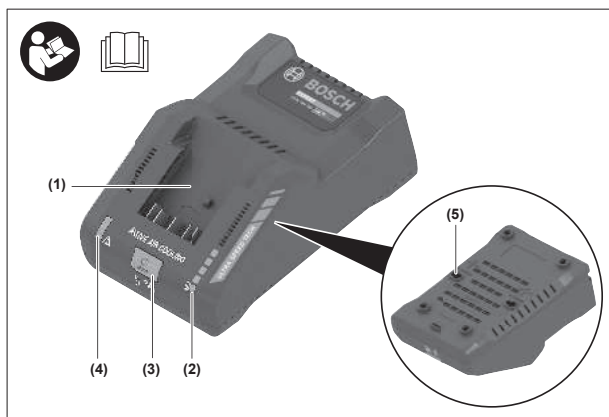
产品和性能说明

按照规定使用

充电器用于为可重复充电的Bosch或AMPShare合作伙伴的锂离子充电电池充电。

插图上的机件

图示组件的编号和充电器插图上的一致。



- (1) 充电槽
- (2) 绿色电量指示灯
- (3) MODE按钮
- (4) 温度监控/错误红色指示灯
- (5) 墙壁悬挂装置

技术数据

充电器	EXAL18V-160
保护等级	IP / II
充电电流 ^{A)}	16安培
充电电池充电电压（自动辨识电压）	14.4–18伏特
重量 ^{B)}	0.95公斤

A 取决于温度和充电电池类型

B 不含电源线和电源插头的重量

数值可能因不同产品而异，并且受到应用和环境条件影响。更多信息请参见www.bosch-professional.com/wac。

充电过程

- ▶ **注意电源电压！** 电源的电压必须和充电器铭牌上标示的电压数据一致。

① 确保充电槽(1)和充电电池触点上没有大块污物。确保已将充电电池完全插入。

一旦充电器的电源插头插入电源插座，充电电池插入充电槽(1)，充电过程就启动。

② 仅当充电电池的温度在许可的充电温度范围内时，才可以充电：

- GBA 18V...: 0摄氏度至45摄氏度
- EXBA18V...: -10摄氏度至55摄氏度

通过智能充电法，能够自动识别充电电池的电量，并根据充电电池的电压和温度以及所选的充电模式以最佳充电电流进行充电。

充电后如果充电电池的使用时间明显缩短，代表充电电池已经损坏，必须更换新的充电电池。

在持续或者不间断地先后使用充电器后，可能导致充电器变热。不过无需担心，这并不表示充电器存在技术故障。

充电时间

以下表格列举了充电至期望电量所需的大致时间（取决于电池类型和充电模式），单位为分钟。充电时间可能有所差别。更多信息请参见：

www.bosch-professional.com/wac。

Power Boost充电模式

充电电池		
EXBA18V-40	≈ 9	≈ 30
EXBA18V-55	≈ 11	≈ 31
EXBA18V-80	≈ 16	≈ 39
EXBA18V-150	≈ 27	≈ 60



相当于 ≈ 50 % 的电量



相当于满电量

标准充电模式

充电电池	
EXBA18V-40	≈ 37
EXBA18V-55	≈ 35
EXBA18V-80	≈ 46
EXBA18V-150	≈ 60



相当于满电量

充电过程

如需为充电电池充电，有3种不同的充电模式可供选择。按压MODE按钮(3)，以便在以下充电模式之间切换：

- 标准充电模式
- Power Boost充电模式
- Long Life充电模式

标准充电模式



将充电电池充满电。此充电模式已在充电器上预设。MODE按钮(3)未亮起。标准充电模式是快速充电时间和充电电池充满电的结合方式。

Power Boost充电模式

EXBA18V...	-40	-55	-80	-150
Power Boost  ≈ 50%	9 min	11 min	16 min	27 min
Power Boost  ≈ 100%	30 min	31 min	39 min	60 min

在此模式下会以最快的充电速度将充电电池充满电。从表格中查看使用Power Boost的充电时间：(参见“充电时间”，页 3)



MODE按钮(3)在快速充电期间呈红色亮起。

Long Life充电模式



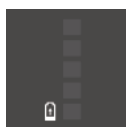
将充电电池充满电。此时将更温和、更缓慢地为充电电池充电。这种方式会显著延长充电电池的使用寿命。

MODE按钮(3)在充电期间呈绿色亮起。

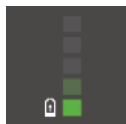
指示灯号的代表含义

绿色电量指示灯

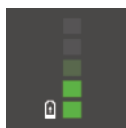
电量指示灯(2)闪烁表示正在进行充电。



0–20 %



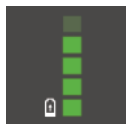
21–40 %



41–60 %



61–80 %



81–99 %



充满电

温度监控红色指示灯常亮



红色指示灯(4)常亮表示充电电池的温度超出了允许的充电温度范围(参见“充电过程”，页 2)。一旦达到所允许的温度范围，充电过程即开始。

故障红色指示灯闪烁



红色指示灯(4)闪烁灯光表示充电电池或充电器损坏。

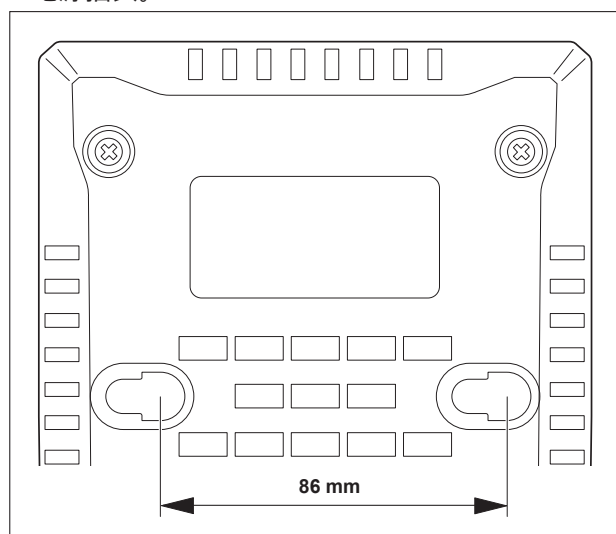
Active Air Cooling (冷却充电电池)

集成在充电器中的风扇控制装置监控插入的蓄电池的温度。一旦充电电池温度高于约0摄氏度，则风扇会自动开启。风扇接通后会发出通风噪音。

如果风扇不转动，说明风扇损坏或充电电池温度小于0 °C。因此充电时间可能会延长。

壁式安装

- 在充电器上进行所有操作之前都必须从插座上拔出电源插头。



充电器可以竖立使用（在桌面上使用），也可以悬挂在墙壁上使用。

如需固定在墙壁上：按照86 mm的间隔钻两个孔。使用直径5毫米至最大6.5毫米的圆头螺栓进行固定。

故障排除

充电电池不充电



无法为充电电池充电且温度监控/故障红色指示灯(4)闪烁红光。

成因：充电器发现一个内部故障。

解决措施：确保将所有充电电池完全插入。拔下再重新插入电源插头。如果该故障再次出现，则将充电器交给Bosch电动工具授权的客户服务中心检查。

成因：未插好充电电池

解决措施：将充电电池正确插入充电器。

成因：充电电池和充电触点受到污染

解决措施：拔下电源插头，清洁充电电池和充电触点（干燥）。

成因：充电电池损坏

解决措施：更换充电电池。



无法为充电电池充电且指示灯(4)亮起红色。

成因：充电电池温度超出允许的充电温度范围

解决措施：请等待直到充电电池温度再次位于许可充电温度范围(参见“充电过程”，页 2)内。

指示灯不亮

没有指示灯亮起，无法为充电电池充电。

成因：插座、电线或充电器有故障

解决措施：确保充电器已连接在与之匹配的功能正常的插座上。如果该故障再次出现，必要时将充电器交给授权的客户服务中心检查。

成因：未插上或者未正确插好充电器的电源插头

解决措施：将电源插头（完全）插入插座。

常见问题解答



哪种充电器适用于我的充电电池？

所有18伏充电电池均与所有Bosch Professional 18伏充电器及所有AMPShare合作伙伴的18伏充电器兼容。

对于专业用户，我们建议将充电器与充电时间在1个小时以内的充电电池结合使用。

所有充电时间均可在线操作说明书或Bosch Professional网站上查看。



充电电池的充电时间为多久？

充电电池的充电时长取决于2个因素：

– 电池类型和电池容量

– 充电速度

所有充电时间均可在在线操作说明书(参见“充电时间”, 页 3)或博世官方网站上查看。



我可以调整充电器的充电速度吗？

您可以根据需要调整EXAL18V-160的充电速度。

EXAL18V-160具备3种充电模式，这些模式已为充电电池的多样化使用做了优化：

- 带标准充电速度的标准充电模式：标准充电模式在出厂时已预设(参见“标准充电模式”，页 3)。
- Power Boost充电模式：Power Boost充电模式可以通过充电器上的MODE按钮激活。
- Long Life充电模式：延长使用寿命充电模式可以通过充电器上的MODE按钮激活(参见“Long Life充电模式”，页 3)。主要采用延长使用寿命充电模式充电可以延长充电电池的使用寿命。



充电电池充满电后可以留在充电器中吗？

在充电电池充满电并且充电器显示充满电后，充电过程结束。

充电电池可以暂时留在充电器内，但不推荐将充电器用于长时间存放充电电池。



充电、使用及存放充电电池时的温度要求？

- 作业及存放时许可的环境温度为-20摄氏度至50摄氏度之间。
- 充电过程中推荐的环境温度为0摄氏度至35摄氏度之间。
- 为优化充电电池的使用寿命，建议将其存放在0摄氏度至20摄氏度之间。



如需长期存放，电池电量为多少合适？

如需长期存放，推荐的电池电量为30–50 %。



Bosch Professional充电电池是否与其他品牌兼容？

所有18伏特Bosch Professional充电电池均与以下产品兼容：

- 所有Bosch Professional 18伏系统的产品
- 所有AMPShare合作伙伴的产品



如想延长充电电池使用寿命，电池电量为多少合适？

如想延长充电电池使用寿命，推荐的电池电量为80%。

维修和服务

维修和清洁

如果必须更换电源线，务必把这项工作交给**Bosch**或者经授权的**Bosch**电动工具顾客服务执行，以避免危害机器的安全性能。

客户服务和应用咨询



<https://www.bosch-pt.com/serviceaddresses>

中国大陆

电话：400 826 8484-3-2

制造商地址：

Robert Bosch Power Tools GmbH

罗伯特·博世电动工具有限公司

70538 Stuttgart / GERMANY

70538 斯图加特 / 德国

询问和订购备件时，务必提供机器铭牌上标示的10位数物品代码。

处理废弃物

必须以符合环保的方式回收再利用充电器、附件和包装材料。



不可以把充电器丢入一般的家庭垃圾中！

制造商保修



<https://www.bosch-pt.com/guarantee/202601>

产品中有害物质的名称及含有的信息表										
部件名称	有害物质									
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBBs)	多溴二苯 醚 (PBDEs)	邻苯二 甲酸二 正丁酯 (DBP)	邻苯二 甲酸二 异丁酯 (DIBP)	邻苯二 甲酸丁 苄酯 (BBP)	邻苯二 甲酸二 (2-乙 基)己酯 (DEHP)
电路板①	O	O	O	O	O	O	O	O	O	O
端子②	X	O	O	O	O	O	O	O	O	O

注1:

o: 表示该有害物质在该部件所有均质材料中的含量均不超出电器电子产品有害物质限制使用国家标准要求。

x: 表示该有害物质至少在该部件的某一均质材料中的含量超出电器电子产品有害物质限制使用国家标准要求。

注2:

以上未列出的部件, 表明其有害物质含量均不超出电器电子产品有害物质限制使用国家标准要求。

①适用于电池包和充电器

②仅适用于充电器

产品环保使用期限内的使用条件参见产品说明书。

Legal Information and Licenses

1. Open Source Components

1.1 Name: **ARM_CMSIS_5**

Version: **5.7.0**

License: **Apache-2.0**

Copyright 2009-2020 Arm Limited. All rights reserved.

Copyright (C) 2020 Arm Limited (or its affiliates). All rights reserved.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

1.2 Name: **STM32G0_HAL**

Version: **1.3.0**

License: **BSD-3-Clause**

COPYRIGHT(c) 2014-2019 STMicroelectronics

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

1.3 Name: **cmsis_device_g0**

Version: **1.4.2**

License: **Apache-2.0**

Copyright (c) 2018-2021 STMicroelectronics. All rights reserved.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

2. Common Licenses

2.1 Apache License 2.0 (Apache-2.0)

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Warranty Disclaimer

This product contains Open Source Software components which underly Open Source Software Licenses. Please note that Open Source Licenses contain disclaimer clauses. The text of the Open Source Licenses that apply are included in this manual under "Legal Information and Licenses".