

## Standard Cable List for FAULHABER Stepper Motor Technology

2024 edition

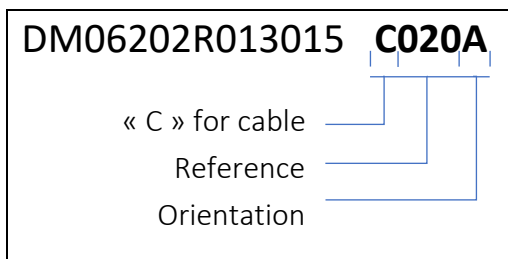
Valid for stepper motors from  $\varnothing 6$ - $\varnothing 32$ mm

### How to order a cable?

To order a standard cable in combination with one of our small stepper motors ( $\varnothing 6$ - $\varnothing 32$ mm) please follow the hereunder instructions.

The ordering code of a cable is made of a letter "C" + a reference number + an orientation letter. This ordering code follows the motor designation


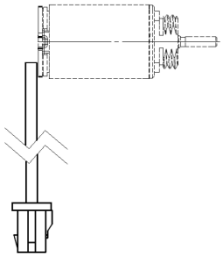
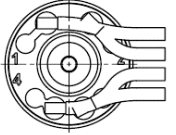
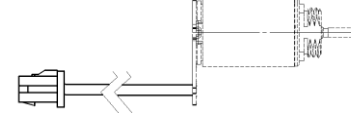
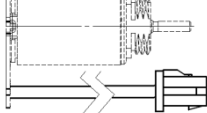
Example: Motor DM06202R013015 with a cable 50mm long with Molex connector and oriented axially towards the back of the motor.



### Encoders

For stepper combinations using the encoder IEP3-4096 (AM0820, AM1020 and AM1524) or the encoder IE3-1024 (AM3248), it is mandatory to also add a cable from this list.

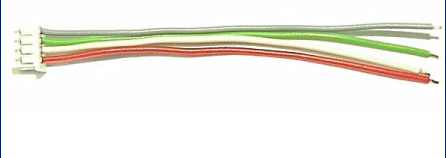

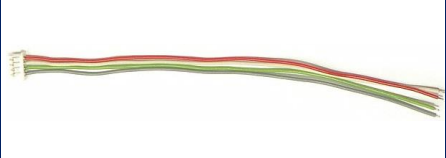
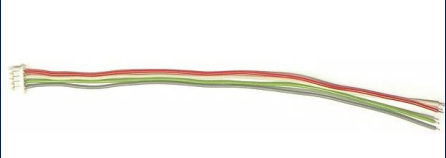
### Orientation

A	B	C*		E**
	Not proposed		Round PCB	
		Not proposed	Solder Tag PCB	

\*The orientation "C" might implies slight length differences between the wires on certain motors (AM0820, AM1020 and DM1220)

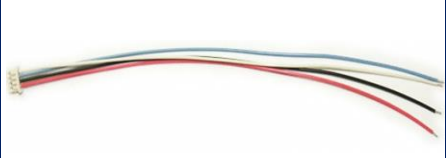
\*\* The orientation "E" is reserved and mandatory for combinations with AM0820 or AM1020 motors and the IEP3 encoder.

## Cable list

PVC CABLES WITH CONNECTOR									
Ref.	Picture	Specifications		Phase & Pinout			Compatibility		
020		Cable length	50 mm	Phase	Color	Pin	Motor	Orientation	
		Housing material	PVC	A+	Red	1	DM0620	A	B C
		Copper cross section	7x0.127 mm <sup>2</sup>	A-	White	2	AM0820	✓	✗ ✗
		AWG	28	B+	Green	3	AM1020	✓	✗ ✗
		Max. temperature	70°C	B-	Grey	4	DM1220	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
		Connector	Molex 51021-0400				AM1524	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
							AM2224	✓	✗ ✓
							AM3248	✓	✗ ✓
021		Cable length	100 mm	Phase	Color	Pin	Motor	Orientation	
		Housing material	PVC	A+	Red	1	DM0620	A	B C
		Copper cross section	7x0.127 mm <sup>2</sup>	A-	White	2	AM0820	✓	✗ ✗
		AWG	28	B+	Green	3	AM1020	✓	✗ ✗
		Max. temperature	70°C	B-	Grey	4	DM1220	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
		Connector	Molex 51021-0400				AM1524	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
							AM2224	✓	✗ ✓
							AM3248	✓	✗ ✓
022		Cable length	150 mm	Phase	Color	Pin	Motor	Orientation	
		Housing material	PVC	A+	Red	1	DM0620	A	B C
		Copper cross section	7x0.127 mm <sup>2</sup>	A-	White	2	AM0820	✓	✗ ✓
		AWG	28	B+	Green	3	AM1020	✓	✗ ✓
		Max. temperature	70°C	B-	Grey	4	DM1220	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
		Connector	Molex 51021-0400				AM1524	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
							AM2224	✓	✗ ✓
							AM3248	✓	✗ ✓
023		Cable length	300 mm	Phase	Color	Pin	Motor	Orientation	
		Housing material	PVC	A+	Red	1	DM0620	A	B C
		Copper cross section	7x0.127 mm <sup>2</sup>	A-	White	2	AM0820	✓	✗ ✓
		AWG	28	B+	Green	3	AM1020	✓	✗ ✓
		Max. temperature	70°C	B-	Grey	4	DM1220	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
		Connector	Molex 51021-0400				AM1524	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
							AM2224	✓	✗ ✓
							AM3248	✓	✗ ✓

1. Only with solder tag PCB

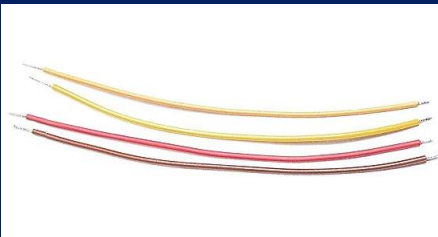
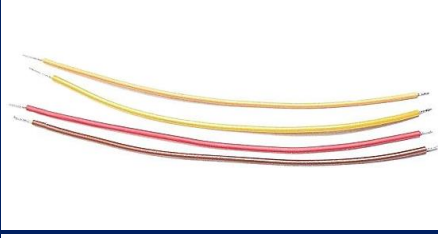
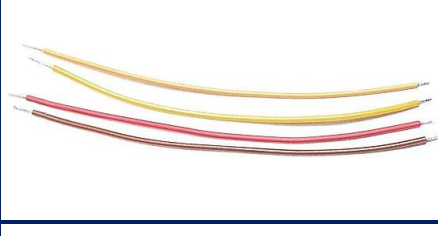
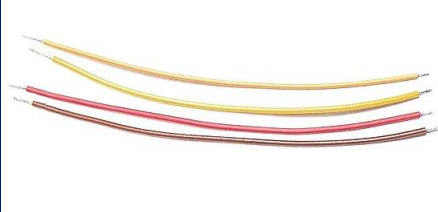
2. Only with round PCB

ETFE CABLES WITH CONNECTOR									
Ref.	Picture	Specifications		Phase & Pinout			Compatibility		
030		Cable length	150 mm	Phase	Color	Pin	Motor	Orientation	
		Housing material	ETFE/PTFE	A+	Red	1	DM0620	A	B C
		Copper cross section	19x0.102 mm <sup>2</sup>	A-	Black	2	AM0820	✓	✗ ✓
		AWG	26	B+	Blue	3	AM1020	✓	✗ ✓
		Max. temperature	150°C	B-	White	4	DM1220	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
		Connector	Molex 51021-0400				AM1524	✓	✓ <sup>1</sup> ✓ <sup>2</sup>
							AM2224	✓	✗ ✓
							AM3248	✓	✗ ✓

1. Only with solder tag PCB

2. Only with round PCB

## PTFE CABLES WITHOUT CONNECTOR

Ref.	Picture	Specifications	Phase & Pinout	Compatibility																																																		
040		Cable length 50 mm Housing material PTFE Copper cross section 19x0.102 mm <sup>2</sup> AWG 26 Max. temperature 260°C Connector -	<table border="1"> <thead> <tr> <th>Phase</th> <th>Color</th> <th>Pin</th> </tr> </thead> <tbody> <tr> <td>A+</td> <td>Brown</td> <td>1</td> </tr> <tr> <td>A-</td> <td>Red</td> <td>2</td> </tr> <tr> <td>B+</td> <td>Oran.</td> <td>3</td> </tr> <tr> <td>B-</td> <td>Yello.</td> <td>4</td> </tr> </tbody> </table>	Phase	Color	Pin	A+	Brown	1	A-	Red	2	B+	Oran.	3	B-	Yello.	4	<table border="1"> <thead> <tr> <th rowspan="2">Motor</th> <th colspan="3">Orientation</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>DM0620</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM0820</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM1020</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>DM1220</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM1524</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM2224</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM3248</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> </tbody> </table>	Motor	Orientation			A	B	C	DM0620	✓	✗	✓	AM0820	✓	✗	✓	AM1020	✓	✗	✓	DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM2224	✓	✗	✓	AM3248	✓	✗	✓
Phase	Color	Pin																																																				
A+	Brown	1																																																				
A-	Red	2																																																				
B+	Oran.	3																																																				
B-	Yello.	4																																																				
Motor	Orientation																																																					
	A	B	C																																																			
DM0620	✓	✗	✓																																																			
AM0820	✓	✗	✓																																																			
AM1020	✓	✗	✓																																																			
DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM2224	✓	✗	✓																																																			
AM3248	✓	✗	✓																																																			
041		Cable length 100 mm Housing material PTFE Copper cross section 19x0.102 mm <sup>2</sup> AWG 26 Max. temperature 260°C Connector -	<table border="1"> <thead> <tr> <th>Phase</th> <th>Color</th> <th>Pin</th> </tr> </thead> <tbody> <tr> <td>A+</td> <td>Brown</td> <td>1</td> </tr> <tr> <td>A-</td> <td>Red</td> <td>2</td> </tr> <tr> <td>B+</td> <td>Oran.</td> <td>3</td> </tr> <tr> <td>B-</td> <td>Yello.</td> <td>4</td> </tr> </tbody> </table>	Phase	Color	Pin	A+	Brown	1	A-	Red	2	B+	Oran.	3	B-	Yello.	4	<table border="1"> <thead> <tr> <th rowspan="2">Motor</th> <th colspan="3">Orientation</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>DM0620</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM0820</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM1020</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>DM1220</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM1524</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM2224</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM3248</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> </tbody> </table>	Motor	Orientation			A	B	C	DM0620	✓	✗	✓	AM0820	✓	✗	✓	AM1020	✓	✗	✓	DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM2224	✓	✗	✓	AM3248	✓	✗	✓
Phase	Color	Pin																																																				
A+	Brown	1																																																				
A-	Red	2																																																				
B+	Oran.	3																																																				
B-	Yello.	4																																																				
Motor	Orientation																																																					
	A	B	C																																																			
DM0620	✓	✗	✓																																																			
AM0820	✓	✗	✓																																																			
AM1020	✓	✗	✓																																																			
DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM2224	✓	✗	✓																																																			
AM3248	✓	✗	✓																																																			
042		Cable length 150 mm Housing material PTFE Copper cross section 19x0.102 mm <sup>2</sup> AWG 26 Max. temperature 260°C Connector -	<table border="1"> <thead> <tr> <th>Phase</th> <th>Color</th> <th>Pin</th> </tr> </thead> <tbody> <tr> <td>A+</td> <td>Brown</td> <td>1</td> </tr> <tr> <td>A-</td> <td>Red</td> <td>2</td> </tr> <tr> <td>B+</td> <td>Oran.</td> <td>3</td> </tr> <tr> <td>B-</td> <td>Yello.</td> <td>4</td> </tr> </tbody> </table>	Phase	Color	Pin	A+	Brown	1	A-	Red	2	B+	Oran.	3	B-	Yello.	4	<table border="1"> <thead> <tr> <th rowspan="2">Motor</th> <th colspan="3">Orientation</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>DM0620</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM0820</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM1020</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>DM1220</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM1524</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM2224</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM3248</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> </tbody> </table>	Motor	Orientation			A	B	C	DM0620	✓	✗	✓	AM0820	✓	✗	✓	AM1020	✓	✗	✓	DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM2224	✓	✗	✓	AM3248	✓	✗	✓
Phase	Color	Pin																																																				
A+	Brown	1																																																				
A-	Red	2																																																				
B+	Oran.	3																																																				
B-	Yello.	4																																																				
Motor	Orientation																																																					
	A	B	C																																																			
DM0620	✓	✗	✓																																																			
AM0820	✓	✗	✓																																																			
AM1020	✓	✗	✓																																																			
DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM2224	✓	✗	✓																																																			
AM3248	✓	✗	✓																																																			
043		Cable length 300 mm Housing material PTFE Copper cross section 19x0.102 mm <sup>2</sup> AWG 26 Max. temperature 260°C Connector -	<table border="1"> <thead> <tr> <th>Phase</th> <th>Color</th> <th>Pin</th> </tr> </thead> <tbody> <tr> <td>A+</td> <td>Brown</td> <td>1</td> </tr> <tr> <td>A-</td> <td>Red</td> <td>2</td> </tr> <tr> <td>B+</td> <td>Oran.</td> <td>3</td> </tr> <tr> <td>B-</td> <td>Yello.</td> <td>4</td> </tr> </tbody> </table>	Phase	Color	Pin	A+	Brown	1	A-	Red	2	B+	Oran.	3	B-	Yello.	4	<table border="1"> <thead> <tr> <th rowspan="2">Motor</th> <th colspan="3">Orientation</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>DM0620</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM0820</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM1020</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>DM1220</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM1524</td> <td>✓</td> <td>✓<sup>1</sup></td> <td>✓<sup>2</sup></td> </tr> <tr> <td>AM2224</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> <tr> <td>AM3248</td> <td>✓</td> <td>✗</td> <td>✓</td> </tr> </tbody> </table>	Motor	Orientation			A	B	C	DM0620	✓	✗	✓	AM0820	✓	✗	✓	AM1020	✓	✗	✓	DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>	AM2224	✓	✗	✓	AM3248	✓	✗	✓
Phase	Color	Pin																																																				
A+	Brown	1																																																				
A-	Red	2																																																				
B+	Oran.	3																																																				
B-	Yello.	4																																																				
Motor	Orientation																																																					
	A	B	C																																																			
DM0620	✓	✗	✓																																																			
AM0820	✓	✗	✓																																																			
AM1020	✓	✗	✓																																																			
DM1220	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM1524	✓	✓ <sup>1</sup>	✓ <sup>2</sup>																																																			
AM2224	✓	✗	✓																																																			
AM3248	✓	✗	✓																																																			

1. Only with solder tag PCB
2. Only with round PCB

## Legal notices

**Copyrights.** All rights reserved. No part of this Application Note may be copied, reproduced, saved in an information system, altered or processed in any way without the express prior written consent of Dr. Fritz Faulhaber & Co. KG.

**Industrial property rights.** In publishing the Application Note Dr. Fritz Faulhaber & Co. KG does not expressly or implicitly grant any rights in industrial property rights on which the applications and functions of the Application Note described are directly or indirectly based nor does it transfer rights of use in such industrial property rights.

**No part of contract; non-binding character of the Application Note.** Unless otherwise stated the Application Note is not a constituent part of contracts concluded by Dr. Fritz Faulhaber & Co. KG. The Application Note is a non-binding description of a possible application. In particular Dr. Fritz Faulhaber & Co. KG does not guarantee and makes no representation that the processes and functions illustrated in the Application Note can always be executed and implemented as described and that they can be used in other contexts and environments with the same result without additional tests or modifications.

**No liability.** Owing to the non-binding character of the Application Note Dr. Fritz Faulhaber & Co. KG will not accept any liability for losses arising in connection with it.

**Amendments to the Application Note.** Dr. Fritz Faulhaber & Co. KG reserves the right to amend Application Notes. The current version of this Application Note may be obtained from Dr. Fritz Faulhaber & Co. KG by calling +49 7031 638 385 or sending an e-mail to [mcsupport@faulhaber.de](mailto:mcsupport@faulhaber.de).