



## MM A MINI-IO CAB01/03/A/B

**PILZ**  
THE SPIRIT OF SAFETY

► Accessories PNOZmulti

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SD means Secure Digital

### Description

The connection cable MM A MINI-IO CAB01/03/A/B is used to connect an encoder to the speed monitors PNOZ m EF 1MM, PNOZ m EF 2MM or PSSu K F EI.

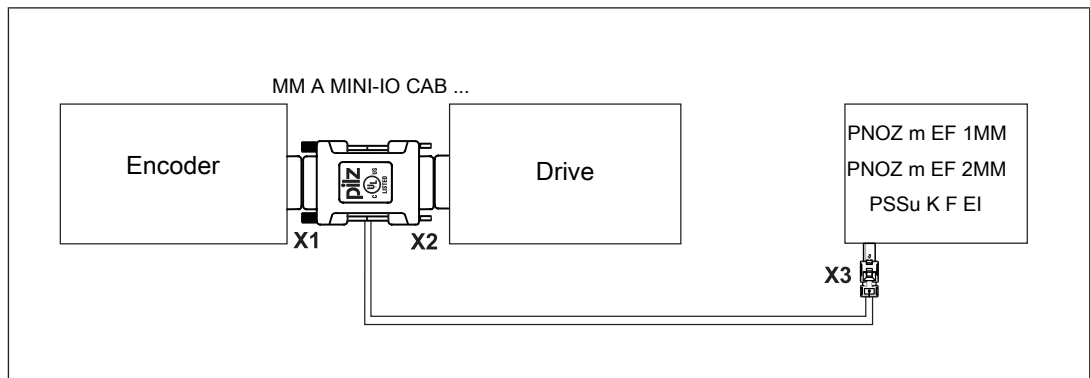
The connection to the speed monitor is made via the Mini-IO connector.



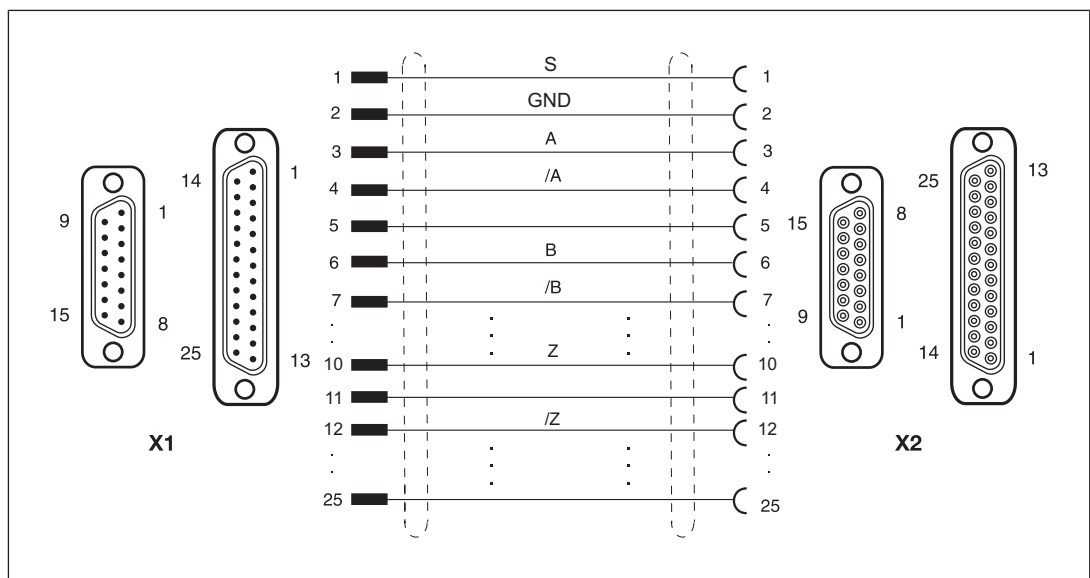
#### CAUTION!

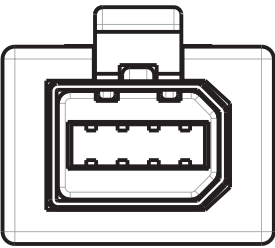
Communication errors may occur if the adapter cable is too long or there are any external sources of interference. Use an adapter cable that's less than 5 m in length. Lay the adapter cable separately from any potential sources of interference, such as drive cables leading to the motor, for example.

### Connection

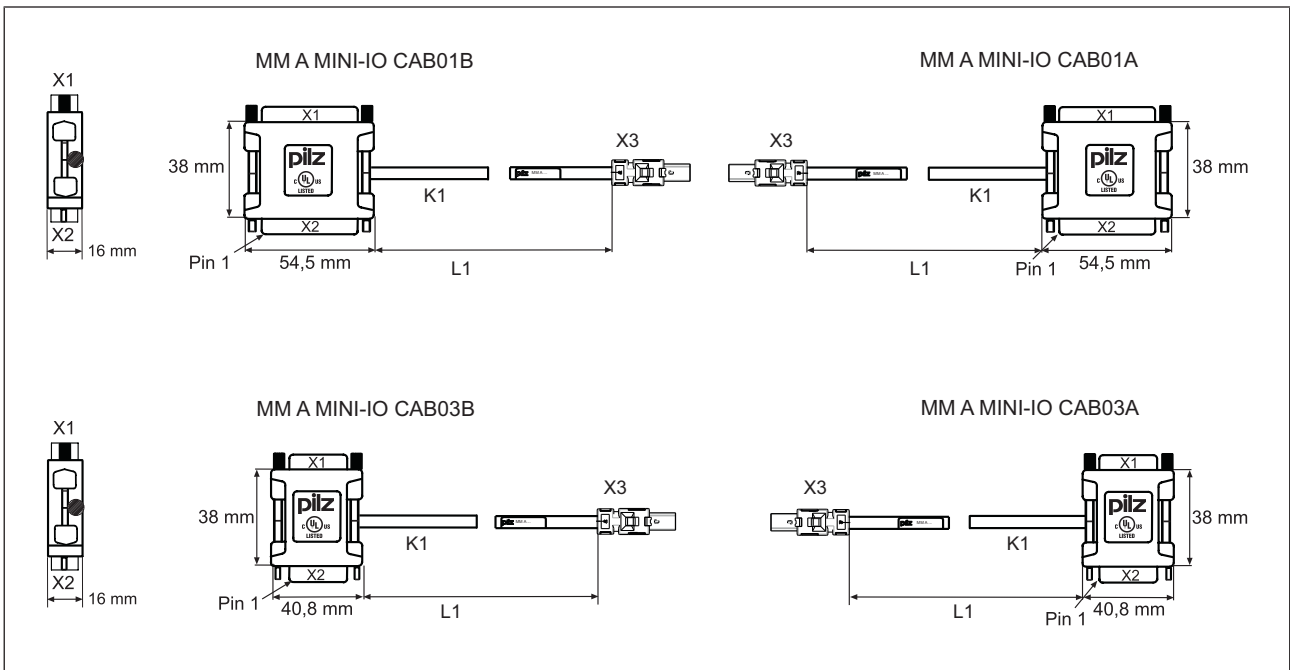


### Connector pin assignment



X3	Pin	Track
	1	S
	2	GND
	3	Z
	4	A
	5	/A
	6	/Z
	7	B
	8	/B

**Dimensions**



## Technical details Order no. 772216, 772217, 772211

General	772216	772217	772211
Approvals	cULus Listed	cULus Listed	cULus Listed
Electrical data	772216	772217	772211
Insulation resistance	10 MOhm	10 MOhm	10 MOhm
Environmental data	772216	772217	772211
Ambient temperature			
Temperature range	0 - 60 °C	0 - 60 °C	0 - 60 °C
Temperature range (moving)	0 - 60 °C	0 - 60 °C	0 - 60 °C
Storage temperature			
Temperature range	-25 - 70 °C	-25 - 70 °C	-25 - 70 °C
Condensation during operation	Not permitted	Not permitted	Not permitted
Protection type			
X1 when inserted	IP20	IP20	IP20
X2 when inserted	IP20	IP20	IP20
X3 when inserted	IP20	IP20	IP20
Housing	IP20	IP20	IP20
Mounting area (e.g. control cabinet)	IP54	IP54	IP54
Mechanical data	772216	772217	772211
Plug-in connector X1	25-pin D-Sub male connector	25-pin D-Sub male connector	25-pin D-Sub male connector
Form, plug-in connector X1	Straight	Straight	Straight
Plug-in connector X2	25-pin D-Sub female connector	25-pin D-Sub female connector	25-pin D-Sub female connector
Form, plug-in connector X2	Straight	Straight	Straight
Plug-in connector X3	8-pin Mini-IO male connector	8-pin Mini-IO male connector	8-pin Mini-IO male connector
Design of plug-in connector X3	Straight	Straight	Straight
Fixing screws	UNC 4-40	UNC 4-40	UNC 4-40
Housing material X1	Nickel steel, tin-plated	Nickel steel, tin-plated	Nickel steel, tin-plated
Housing material X2	Nickel steel, tin-plated	Nickel steel, tin-plated	Nickel steel, tin-plated
Housing material X3	PBT	PBT	PBT
Material of contact surface X1	Au	Au	Au
Material of contact surface X2	Au	Au	Au
Material of contact surface X3	Au	Au	Au
Material of pin	Cu alloy	Cu alloy	Cu alloy
Material of socket	Cu alloy	Cu alloy	Cu alloy

<b>Mechanical data</b>	<b>772216</b>	<b>772217</b>	<b>772211</b>
Mating cycles X1	50	50	50
Mating cycles X2	50	50	50
Mating cycles X3	1500	1500	1500
Cable length L1	1,5 m	1,5 m	2,5 m
Cable length tolerance K1	+/- 0,15 m	+/- 0,15 m	+/- 0,15 m
Colour of external cable insulation K1	Green, similar to RAL6018	Green, similar to RAL6018	Green, similar to RAL6018
Colour of housing	Black RAL 9005	Black RAL 9005	Black RAL 9005
Cable insulation material K1	PUR	PUR	PUR
Drag chain suitable K1	yes	yes	yes
Min. bending radius (fixed permanently) K1	8 x Ø	8 x Ø	8 x Ø
Min. bending radius (moving) K1	10 x Ø	10 x Ø	10 x Ø
Cable diameter K1	5,8 mm	5,8 mm	5,8 mm
Max. cable diameter K1	6 mm	6 mm	6 mm
Conductor cross section K1	0,14 mm <sup>2</sup>	0,14 mm <sup>2</sup>	0,14 mm <sup>2</sup>
Conductor cross section AWG K1	26	26	26
Wire colour K1	1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red	1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red	1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red
Shielding K1	yes	yes	yes
Wire layer separation K1	No	No	No
No. of wires K1	8	8	8
Approval cable K1	UL AWM-Style 20233	UL AWM-Style 20233	UL AWM-Style 20233
Approval of plug-in connector X1	UL94 V-0	UL94 V-0	UL94 V-0
Approval of plug-in connector X2	UL94 V-0	UL94 V-0	UL94 V-0
Approval of plug-in connector X3	UL94 V-0	UL94 V-0	UL94 V-0
Material			
Housing	TPE-SEBS UL 94 HB	TPE-SEBS UL 94 HB	TPE-SEBS UL 94 HB
Dimensions			
Height	38 mm	38 mm	38 mm
Width	54,5 mm	54,5 mm	54,5 mm
Depth	16 mm	16 mm	16 mm
Weight	131 g	126 g	139 g

## Technical details Order no. 772212, 772213, 772214

General	772212	772213	772214
Approvals	cULus Listed	cULus Listed	cULus Listed
Electrical data	772212	772213	772214
Insulation resistance	10 MOhm	10 MOhm	10 MOhm
Environmental data	772212	772213	772214
Ambient temperature			
Temperature range	0 - 60 °C	0 - 60 °C	0 - 60 °C
Temperature range (moving)	0 - 60 °C	0 - 60 °C	0 - 60 °C
Storage temperature			
Temperature range	-25 - 70 °C	-25 - 70 °C	-25 - 70 °C
Condensation during operation	Not permitted	Not permitted	Not permitted
Protection type			
X1 when inserted	IP20	IP20	IP20
X2 when inserted	IP20	IP20	IP20
X3 when inserted	IP20	IP20	IP20
Housing	IP20	IP20	IP20
Mounting area (e.g. control cabinet)	IP54	IP54	IP54
Mechanical data	772212	772213	772214
Plug-in connector X1	25-pin D-Sub male connector	15-pin D-Sub male connector	15-pin D-Sub male connector
Form, plug-in connector X1	Straight	Straight	Straight
Plug-in connector X2	25-pin D-Sub female connector	15-pin D-Sub female connector	15-pin D-Sub female connector
Form, plug-in connector X2	Straight	Straight	Straight
Plug-in connector X3	8-pin Mini-IO male connector	8-pin Mini-IO male connector	8-pin Mini-IO male connector
Design of plug-in connector X3	Straight	Straight	Straight
Fixing screws	UNC 4-40	UNC 4-40	UNC 4-40
Housing material X1	Nickel steel, tin-plated	Nickel steel, tin-plated	Nickel steel, tin-plated
Housing material X2	Nickel steel, tin-plated	Nickel steel, tin-plated	Nickel steel, tin-plated
Housing material X3	PBT	PBT	PBT
Material of contact surface X1	Au	Au	Au
Material of contact surface X2	Au	Au	Au
Material of contact surface X3	Au	Au	Au
Material of pin	Cu alloy	Cu alloy	Cu alloy
Material of socket	Cu alloy	Cu alloy	Cu alloy

<b>Mechanical data</b>	<b>772212</b>	<b>772213</b>	<b>772214</b>
Mating cycles X1	<b>50</b>	<b>50</b>	<b>50</b>
Mating cycles X2	<b>50</b>	<b>50</b>	<b>50</b>
Mating cycles X3	<b>1500</b>	<b>1500</b>	<b>1500</b>
Cable length L1	<b>2,5 m</b>	<b>2,5 m</b>	<b>2,5 m</b>
Cable length tolerance K1	<b>+/- 0,15 m</b>	<b>+/- 0,15 m</b>	<b>+/- 0,15 m</b>
Colour of external cable insulation K1	<b>Green, similar to RAL6018</b>	<b>Green, similar to RAL6018</b>	<b>Green, similar to RAL6018</b>
Colour of housing	<b>Black RAL 9005</b>	<b>Black RAL 9005</b>	<b>Black RAL 9005</b>
Cable insulation material K1	<b>PUR</b>	<b>PUR</b>	<b>PUR</b>
Drag chain suitable K1	<b>yes</b>	<b>yes</b>	<b>yes</b>
Min. bending radius (fixed permanently) K1	<b>8 x Ø</b>	<b>8 x Ø</b>	<b>8 x Ø</b>
Min. bending radius (moving) K1	<b>10 x Ø</b>	<b>10 x Ø</b>	<b>10 x Ø</b>
Cable diameter K1	<b>5,8 mm</b>	<b>5,8 mm</b>	<b>5,8 mm</b>
Max. cable diameter K1	<b>6 mm</b>	<b>6 mm</b>	<b>6 mm</b>
Conductor cross section K1	<b>0,14 mm<sup>2</sup></b>	<b>0,14 mm<sup>2</sup></b>	<b>0,14 mm<sup>2</sup></b>
Conductor cross section AWG K1	<b>26</b>	<b>26</b>	<b>26</b>
Wire colour K1	<b>1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red</b>	<b>1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red</b>	<b>1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red</b>
Shielding K1	<b>yes</b>	<b>yes</b>	<b>yes</b>
Wire layer separation K1	<b>No</b>	<b>No</b>	<b>No</b>
No. of wires K1	<b>8</b>	<b>8</b>	<b>8</b>
Approval cable K1	<b>UL AWM-Style 20233</b>	<b>UL AWM-Style 20233</b>	<b>UL AWM-Style 20233</b>
Approval of plug-in connector X1	<b>UL94 V-0</b>	<b>UL94 V-0</b>	<b>UL94 V-0</b>
Approval of plug-in connector X2	<b>UL94 V-0</b>	<b>UL94 V-0</b>	<b>UL94 V-0</b>
Approval of plug-in connector X3	<b>UL94 V-0</b>	<b>UL94 V-0</b>	<b>UL94 V-0</b>
Material			
Housing	<b>TPE-SEBS UL 94 HB</b>	<b>TPE-SEBS UL 94 HB</b>	<b>TPE-SEBS UL 94 HB</b>
Dimensions			
Height	<b>38 mm</b>	<b>38 mm</b>	<b>38 mm</b>
Width	<b>54,5 mm</b>	<b>40,8 mm</b>	<b>40,8 mm</b>
Depth	<b>16 mm</b>	<b>16 mm</b>	<b>16 mm</b>
Weight	<b>134 g</b>	<b>134 g</b>	<b>128 g</b>

### Technical details Order no. 772215, 772210

<b>General</b>	<b>772215</b>	<b>772210</b>
Approvals	cULus Listed	cULus Listed
<b>Electrical data</b>	<b>772215</b>	<b>772210</b>
Insulation resistance	10 MOhm	10 MOhm
<b>Environmental data</b>	<b>772215</b>	<b>772210</b>
Ambient temperature		
Temperature range	0 - 60 °C	0 - 60 °C
Temperature range (moving)	0 - 60 °C	0 - 60 °C
Storage temperature		
Temperature range	-25 - 70 °C	-25 - 70 °C
Condensation during operation	Not permitted	Not permitted
Protection type		
X1 when inserted	IP20	IP20
X2 when inserted	IP20	IP20
X3 when inserted	IP20	IP20
Housing	IP20	IP20
Mounting area (e.g. control cabinet)	IP54	IP54
<b>Mechanical data</b>	<b>772215</b>	<b>772210</b>
Plug-in connector X1	25-pin D-Sub male connector	25-pin D-Sub male connector
Form, plug-in connector X1	Straight	Straight
Plug-in connector X2	25-pin D-Sub female connector	25-pin D-Sub female connector
Form, plug-in connector X2	Straight	Straight
Plug-in connector X3	8-pin Mini-IO male connector	8-pin Mini-IO male connector
Design of plug-in connector X3	Straight	Straight
Fixing screws	UNC 4-40	UNC 4-40
Housing material X1	Nickel steel, tin-plated	Nickel steel, tin-plated
Housing material X2	Nickel steel, tin-plated	Nickel steel, tin-plated
Housing material X3	PBT	PBT
Material of contact surface X1	Au	Au
Material of contact surface X2	Au	Au
Material of contact surface X3	Au	Au
Material of pin	Cu alloy	Cu alloy
Material of socket	Cu alloy	Cu alloy
Mating cycles X1	50	50
Mating cycles X2	50	50
Mating cycles X3	1500	1500
Cable length L1	5 m	5 m
Cable length tolerance K1	+/- 0,15 m	+/- 0,15 m
Colour of external cable insulation K1	Green, similar to RAL6018	Green, similar to RAL6018
Colour of housing	Black RAL 9005	Black RAL 9005
Cable insulation material K1	PUR	PUR

<b>Mechanical data</b>	<b>772215</b>	<b>772210</b>
Drag chain suitable K1	<b>yes</b>	<b>yes</b>
Min. bending radius (fixed permanently) K1	<b>8 x Ø</b>	<b>8 x Ø</b>
Min. bending radius (moving) K1	<b>10 x Ø</b>	<b>10 x Ø</b>
Cable diameter K1	<b>5,8 mm</b>	<b>5,8 mm</b>
Max. cable diameter K1	<b>6 mm</b>	<b>6 mm</b>
Conductor cross section K1	<b>0,14 mm<sup>2</sup></b>	<b>0,14 mm<sup>2</sup></b>
Conductor cross section AWG K1	<b>26</b>	<b>26</b>
Wire colour K1	<b>1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red</b>	<b>1: white, 2: brown, 3: green, 4: yellow, 5: grey, 6: pink, 7: blue, 8: red</b>
Shielding K1	<b>yes</b>	<b>yes</b>
Wire layer separation K1	<b>No</b>	<b>No</b>
No. of wires K1	<b>8</b>	<b>8</b>
Approval cable K1	<b>UL AWM-Style 20233</b>	<b>UL AWM-Style 20233</b>
Approval of plug-in connector X1	<b>UL94 V-0</b>	<b>UL94 V-0</b>
Approval of plug-in connector X2	<b>UL94 V-0</b>	<b>UL94 V-0</b>
Approval of plug-in connector X3	<b>UL94 V-0</b>	<b>UL94 V-0</b>
<b>Material</b>		
Housing	<b>TPE-SEBS UL 94 HB</b>	<b>TPE-SEBS UL 94 HB</b>
<b>Dimensions</b>		
Height	<b>38 mm</b>	<b>38 mm</b>
Width	<b>54,5 mm</b>	<b>54,5 mm</b>
Depth	<b>16 mm</b>	<b>16 mm</b>
Weight	<b>225 g</b>	<b>225 g</b>

### Order references

<b>Product type</b>	<b>Features</b>	<b>Connector X1</b>	<b>Connector X2</b>	<b>Connector X3</b>	<b>Order no.</b>
MM A MINI-IO CAB01A 1.5m	1.5 m	25-pin D-Sub male connector	25-pin D-Sub female connector	8-pin Mini-IO male connector	772 216
MM A MINI-IO CAB01B 1.5m	1.5 m	25-pin D-Sub male connector	25-pin D-Sub female connector	8-pin Mini-IO male connector	772 217
MM A MINI-IO CAB01A 2.5m	2.5 m	25-pin D-Sub male connector	25-pin D-Sub female connector	8-pin Mini-IO male connector	772 211
MM A MINI-IO CAB01B 2.5m	2.5 m	25-pin D-Sub male connector	25-pin D-Sub female connector	8-pin Mini-IO male connector	772 212
MM A MINI-IO CAB03A 2.5m	2.5 m	15-pin D-Sub male connector	15-pin D-Sub female connector	8-pin Mini-IO male connector	772 213

Product type	Features	Connector X1	Connector X2	Connector X3	Order no.
MM A MINI-IO CAB03B 2.5m	2.5 m	15-pin D-Sub male connector	15-pin D-Sub female connector	8-pin Mini-IO male connector	772 214
MM A MINI-IO CAB01A 5.0m	5 m	25-pin D-Sub male connector	25-pin D-Sub female connector	8-pin Mini-IO male connector	772 215
MM A MINI-IO CAB01B 5.0m	5 m	25-pin D-Sub male connector	25-pin D-Sub female connector	8-pin Mini-IO male connector	772 210