## Connecting cable NEBA-M8G3-U-5-N-M12G3 Part number: 8078281

**FESTO** 



## **Data sheet**

Feature	Value
Conforms to standard	EN 61076-2-101 EN 61076-2-104 EN 61984
Approval	c UL us listed (OL)
Intended use	Die Verbindungsleitung verbindet Feldgeräte (Sensoren, Aktoren) mit Steuerungen.
Certificate issuing authority	UL E253748
Cable designation	Without inscription label holder
Frequency of connection	100
Product weight	107 g
Instructions on use	Meets the requirements of IEC 61010-1 and 61010-2-202, in particular for electrically operated valves from Festo.  Only energy-limited circuits with a maximum current of 4 A at a max. open circuit voltage of 30 V DC are permissible for supplying electrically actuated valves from Festo.
Electrical connection 1, function	Field device side
Electrical connection 1, design	Round
Electrical connection 1, connection type	Socket
Electrical connection 1, cable outlet	Straight
Electrical connection 1, connector system	M8x1, A-coded, to EN 61076-2-104
Electrical connection 1, number of connections/cores	3
Electrical connection 1, used connections/cores	3
Electrical connection 1, type of mounting	Screw-type lock with hexagon A/F 9 mm and longitudinal knurl
Electrical connection 1, terminal allocation	Pin 1 = BN Pin 3 = BU Pin 4 = BK
Electrical connection 1, display	ohne
Electrical connection 2, function	Controller side
Electrical connection 2, design	Round
Electrical connection 2, connection type	Plugs
Electrical connection 2, cable outlet	Straight
Electrical connection 2, connector system	M12x1, A-coded to EN 61076-2-101
Electrical connection 2, number of connections/cores	3
Electrical connection 2, used connections/cores	3

Class D1 based on IEC 60654-1  Ambient temperature -40 °C85 °C  Note on ambient temperature -40 °C85 °C  Note on ambient temperature with moving cable -20 °C85 °C  Note on the ambient temperature with flexible cable installation -20 °C85 °C  Note on the ambient temperature with flexible cable installation -20 °C85 °C  Note on storage temperature -25 °C55 °C  Note on storage temperature Temporarily during transport in packaging -40 85 °C  Relative air humidity Max. 93% at 40 °C  Nominal altitude of use <= 2000 m NHN  Overvoltage category II  CE mark (see declaration of conformity) In accordance with EU RoHS Directive  CE marking (see declaration of conformity) To UK RoHS instructions	Feature	Value
Pin 3 = BU   Pin 4 = BU   Pin	electrical connection 2, type of mounting	Screw-type lock with 13 mm hexagon and longitudinal knurl
Operational voltage range DC         0 V60 V           Note on operational voltage range AC         0 · 30 V for UL applications           Operational voltage range AC         0 · 30 V for UL applications           Oute on operational voltage range AC         0 · 30 V for UL applications           Current rating at 40 °C         4 A           Immunity to surge         1.5 kV           Cable length         5 m           Cable characteristic         Subtable for energy chains/robot applications           Abrasion resistant to Low adhesion fallowers         Interpretation and self-extinguishing           Test conditions cable         Test conditions on request foresional resistance > 390,000 cycles, ± 270°/0.1 m           Reading radius, fixed cable         12 mm           Bending radius, Roxed cable         12 mm           Bending radius, moving cable         33 mm           Cable diameter         3.3 mm           Cable structure         3.2 kD mm²           Nominal cross section conductor         0.25 mm²           Degree of protection         In assembled state           Special characteristics         UV registant I hydrolysis-resistant Propositions           Outdoor applications         Applications as with direct exposure to outdoor climatic influence Cables on the cortioning Lubricants Resistant to cortioning Lubricants Resistant to microbase     <	Electrical connection 2, terminal allocation	Pin 3 = BU
Note on operational voltage range DC Operational voltage range AC OV48 V Note on operational voltage range AC OV48 V Note on operational voltage range AC OV48 V AA Immunity to surge 1.5 kV Cable length Cable length Cable length Cable characteristic Suitable for energy chains/robot applications Abrasion-resistant Low adhesion Flame-retardant and self-extinguishing Fact conditions cable Fact conditions cable Test conditions on request Torsional resistances 300,000 cycles, ± 270°/0.1 m Bending radius, fixed cable Face dat 23 °C Bending radius, moving cable Face dat 23 °C Bending radius, moving cable Cable dameter Cable dameter Cable dameter Cable structure 3.2.5 mm² Nominal cross section conductor Opere of protection Pege of protection In assembled state Uversistant Hydrolysis-resistant Resistant to onlice under which will be resistant Pege Bending radius are with direct exposure to outdoor climatic influence Class Old makes on the section of the protection Outdoor applications Applications areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1 Ambient temperature Applications Applications Applications Note on ambient temperature with moving cable Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1 Ambient temperature with moving cable Accompany of Corp. Unapplications Storage temperature Applications Storage temperature Applications Storage temperature Note on storage temperature Note on conformity In accordance with EU RoHS Directive CE marking (see declaration of conformity) In accordance with EU RoHS Directive CE marking (see declaration of conformity) In accordance with EU RoHS Directive CE marking (see declaration of conformity) In accordance with EU RoHS Directive	Electrical connection 2, display	ohne
Operational voltage range AC  Note on operational voltage range AC  O - 30 V for UL applications  Current rating at 40° C  Inmunity to surge  1.5 kV  Cable length  Cable characteristic  Abrasion-resistant Low adhesion Flame-retardant and self-extinguishing  Test conditions cable  Test conditions cable  Test conditions cable  Test conditions or request Torsional resistance: 300,000 cycles, 270°/0.1 m Beneding fatigue strength: > 50000 cycles, 270°/0.1 m Beneding fadius, psed cable  12 mm  Notes on test conditions cable  Tested at 23° C  Bending radius, fixed cable  12 mm  Bending radius, fixed cable  13 mm  Cable structure  3.8 mm  Cable structure  3.2.25 mm²  Nominal cross section conductor  Degree of protection  In assembled state  Ur resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to microbes Oil resistant Outdoor applications  Applications area with direct exposure to outdoor climatic influence Class D1 based on IEC 66654-1  Ambient temperature  Note on ambient temperature with moving cable  Note on ambient temperature with moving cable  Note on the ambient temperature with flexible cable installation  Poor of the understand of conformity)  Note on storage temperature  Relative air humidity  Max. 93% at 40° C  Emark (see declaration of conformity)  In accordance with EU ROHS Directive  E marking (see declaration of conformity)  In UK ROHS Instructions	Operational voltage range DC	0 V60 V
Note on operational voltage range AC Current rating at 40°C Lurent	Note on operational voltage range DC	0 - 30 V for UL applications
Current rating at 40° C Immunity to surge 1.5 kW Cable length Cable characteristic Cable characteristics Cable cha	Operational voltage range AC	0 V48 V
immunity to surge         1.5 kV           Cable length         5 m           Cable characteristic         Suitable for energy chains/robot applications. Abrasion-resistant Low adhesion. If Sunterleardant and self-extinguishing.           Test conditions cable         Test conditions on request. Torsional resistance: 300,000 cycles, ±270°/0.1 m Bending fatigue strength: > 50000 cycles, bending radius 5 mm Energy chain: > 5 million cycles, bending radius 28 mm.           Notes on test conditions cable         Tested at 23 °C           Bending radius, fixed cable         12 mm           Bending radius, moving cable         39 mm           Cable diameter         3.8 mm           Cable dameter         3.8 mm           Cable structure         3 x 0.25 mm²           Note on degree of protection         IP65 IP68           Pie68 IP69K         IP65 IP68           Pie76 IP68 IP68K         IP69K           Note on degree of protection         In assembled state           Outdoor applications         Application areas with direct exposure to outdoor climatic influence class of based on IEC 60654-1           Ambient temperature         40 °C85 °C           Note on ambient temperature with moving cable         20 °C85 °C           Actor on the ambient temperature with flexible cable installation         20 °C85 °C           Note on the ambient temperature with flexible cable	Note on operational voltage range AC	0 - 30 V for UL applications
Cable length Cable characteristic Suitable for energy chains/robot applications Abrasion-resistant Low adhesion Flame-retardant and self-extinguishing Test conditions cable Test conditions on request Torsional resistance: 300,000 cycles, ± 270°/0.1 m Bending fatigue strength: 5 50000 cycles, bending radius 5 mm Energy chain: 5 5 million cycles, bending radius 5 mm Energy chain: 5 5 million cycles, bending radius 5 mm Energy chain: 5 5 million cycles, bending radius 5 mm Energy chain: 5 million cycles, bending radius 5 mm Energy chai	Current rating at 40° C	4 A
Suitable for energy chains/robot applications Abrasion-resistant Low adhesion Flame-retardant and self-extinguishing Test conditions cable Test conditions on request Torsional resistance:> 300,000 cycles, ± 270°/0.1 m Bending fatigue strength:> \$0000 cycles, bending radius 5 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5 million cycles, bending radius 2 mm Energy chain:> 5	Immunity to surge	1.5 kV
Abrasion-resistant Low adhesion   Rame-retardant and self-extinguishing	Cable length	5 m
Torsional resistance: > 300,000 cycles, ± 270°/0.1 m Bending fatigue strength: > 50000 cycles, bending radius 5 mm Energy chain: > 5 million cycles, pending radius 5 mm Energy chain: > 5 million cycles, pending radius 5 mm Energy chain: > 5 million cycles, pending radius 5 mm Energy chain: > 5 million cycles, pending radius 5 mm Energy chain: > 5 million cycles, pending radius 5 mm Energy chain: > 5 million cycles, pending radius 5 mm Energy chain: > 5 million cycles chain  In a condination cycles, pending radius 5 mm  Energy ch	Cable characteristic	Abrasion-resistant Low adhesion
Bending radius, fixed cable  Bending radius, moving cable  39 mm  Cable diameter  3,8 mm  Cable structure  3 x 0.25 mm²  Nominal cross section conductor  0,25 mm²  Degree of protection  1P65 1P68 1P69K  Note on degree of protection  In assembled state  Special characteristics  UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant Ozone-resistant  Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1  Ambient temperature  40 °C85 °C  Note on ambient temperature with moving cable  -20 °C85 °C  Note on the ambient temperature with flexible cable installation  20 - 50 °C for UL applications Storage temperature  725 °C55 °C  Note on storage temperature  Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Relative air humidity  Nominal altitude of use  Relative air humidity  Relative air humidity  Nominal altitude of use  Relative air humidity  Relative air humidity  Nominal altitude of use  Relative air humidity	Test conditions cable	Torsional resistance: 300,000 cycles, ± 270°/0.1 m Bending fatigue strength: 50000 cycles, bending radius 5 mm
Bending radius, moving cable  39 mm  Cable diameter  3.8 mm  3 x 0.25 mm²  Nominal cross section conductor  0.25 mm²  Degree of protection  1P65 1P68 1P69K  Note on degree of protection  UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant Ozone-resistant Ozone-resistant  Outdoor applications  Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1  Ambient temperature  40 °C85 °C  Note on ambient temperature with moving cable  Ambient temperature with moving cable  Ambient temperature with moving cable installation  Ambient temperature  120 °C85 °C  Note on the ambient temperature with flexible cable installation  20 °C. S0 °C for UL applications  Storage temperature  25 °C55 °C  Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  C= 2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU ROHS Directive  CE marking (see declaration of conformity)  To UK ROHS instructions	Notes on test conditions cable	Tested at 23 °C
Cable diameter 3.8 mm  Cable structure 3 x 0.25 mm²  Nominal cross section conductor 0.25 mm²  Degree of protection IP68 IP68 IP69K  Note on degree of protection In assembled state  Special characteristics UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant  Outdoor applications Applications Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1  Ambient temperature 40 °C85 °C  Note on ambient temperature with moving cable 20 °C85 °C  Note on the ambient temperature with flexible cable installation 20 · 50 °C for UL applications  Storage temperature 20 · 50 °C for UL applications  Note on storage temperature Perature With flexible cable installation 20 · 50 °C for UL applications  Storage temperature Perature With Individual Perature With Individual Perature Wax. 93% at 40 °C  Note on storage temperature Perature Wax. 93% at 40 °C  Note on storage temperature Perature Wax. 93% at 40 °C  Nominal altitude of use 2000 m NHN  Overvoltage category Il  CE mark (see declaration of conformity) In accordance with EU ROHS Directive  CE marking (see declaration of conformity)  To UK ROHS instructions	Bending radius, fixed cable	12 mm
Cable structure  Sax 0.25 mm²  Nominal cross section conductor  Degree of protection  IP65 IP68 IP69K  Note on degree of protection  In assembled state  UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant Ozone-resistant  Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1  Ambient temperature  40°C85°C  Note on ambient temperature  40°C85°C  Note on ambient temperature with moving cable  Ambient temperature with moving cable  Ambient temperature with flexible cable installation  Storage temperature  125°C55°C  Note on storage temperature  Note on storage temperature  Temporarily during transport in packaging -40 85°C  Relative air humidity  Max. 93% at 40°C  Relative air humidity  Max. 93% at 40°C  Relative air humidity  Nominal altitude of use  C= 2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU ROHS Directive  To UK ROHS instructions	Bending radius, moving cable	39 mm
Nominal cross section conductor  Degree of protection  Degree of protection  Degree of protection  Note on degree of protection  In assembled state  Special characteristics  UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant ocoling lubricants Resistant ocoling lubricants Resistant ocoling lu	Cable diameter	3.8 mm
Degree of protection    P65   P68   P69K     Note on degree of protection   In assembled state	Cable structure	3 x 0.25 mm <sup>2</sup>
Note on degree of protection       In assembled state         Special characteristics       UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant         Outdoor applications       Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1         Ambient temperature       -40 °C85 °C         Note on ambient temperature       -40 - 50 °C for UL applications Note derating         Ambient temperature with moving cable       -20 °C85 °C         Note on the ambient temperature with flexible cable installation       -20 °C85 °C         Note on storage temperature       -25 °C55 °C         Note on storage temperature       Temporarily during transport in packaging -40 85 °C         Relative air humidity       Max. 93% at 40 °C         Nominal altitude of use       <= 2000 m NHN	Nominal cross section conductor	0.25 mm <sup>2</sup>
Special characteristics  UV resistant Hydrolysis-resistant Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant  Ozone-resistant  Application areas with direct exposure to outdoor climatic influence Class D1 based on IEC 60654-1  Ambient temperature  -40 °C85 °C  Note on ambient temperature Note derating  Ambient temperature with moving cable -20 °C85 °C  Note on the ambient temperature with flexible cable installation -20 °C85 °C  Note on the ambient temperature Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Relative air humidity  Max. 93% at 40 °C  Relative acted of use  -2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  CE marking (see declaration of conformity)  To UK RoHS instructions	Degree of protection	IP68
Hydrolysis-resistant Resistant to cooling lubricants Resistant to cooling lubricants Resistant to cooling lubricants Resistant to microbes Oil resistant Ozone-resistant  Outdoor applications  Application areas with direct exposure to outdoor climatic influence class D1 based on IEC 60654-1  Ambient temperature  -40 °C85 °C  Note on ambient temperature  -40 -50 °C for UL applications Note derating  Ambient temperature with moving cable  -20 °C85 °C  Note on the ambient temperature with flexible cable installation  -20 -50 °C for UL applications  Storage temperature  -25 °C55 °C  Note on storage temperature  Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  -= 2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  CE marking (see declaration of conformity)	Note on degree of protection	In assembled state
Class D1 based on IEC 60654-1  Ambient temperature  -40 °C85 °C  Note on ambient temperature  -40 -50 °C for UL applications Note derating  Ambient temperature with moving cable  -20 °C85 °C  Note on the ambient temperature with flexible cable installation  -20 -50 °C for UL applications  Storage temperature  -25 °C55 °C  Note on storage temperature  Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  -2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  To UK RoHS instructions	Special characteristics	Hydrolysis-resistant Resistant to cooling lubricants Resistant to microbes Oil resistant
Note on ambient temperature  Ambient temperature with moving cable  -20 °C85 °C  Note on the ambient temperature with flexible cable installation  -20 - 50 °C for UL applications  Note on the ambient temperature with flexible cable installation  -20 - 50 °C for UL applications  Storage temperature  -25 °C55 °C  Note on storage temperature  Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  -2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  To UK ROHS instructions	Outdoor applications	Application areas with direct exposure to outdoor climatic influences Class D1 based on IEC 60654-1
Ambient temperature with moving cable Ambient temperature with moving cable Note on the ambient temperature with flexible cable installation -20 °C85 °C Note on the ambient temperature with flexible cable installation -25 °C55 °C Note on storage temperature Temporarily during transport in packaging -40 85 °C Relative air humidity Max. 93% at 40 °C Nominal altitude of use -2000 m NHN Overvoltage category II CE mark (see declaration of conformity) In accordance with EU RoHS Directive To UK ROHS instructions	Ambient temperature	-40 °C85 °C
Note on the ambient temperature with flexible cable installation  -20 - 50 °C for UL applications  Storage temperature  -25 °C55 °C  Note on storage temperature  Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  -2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  CE marking (see declaration of conformity)  To UK ROHS instructions	Note on ambient temperature	
Storage temperature -25 °C55 °C  Note on storage temperature Temporarily during transport in packaging -40 85 °C  Relative air humidity Max. 93% at 40 °C  Nominal altitude of use <= 2000 m NHN  Overvoltage category II  CE mark (see declaration of conformity) In accordance with EU RoHS Directive  CE marking (see declaration of conformity) To UK RoHS instructions	Ambient temperature with moving cable	-20 °C85 °C
Note on storage temperature  Temporarily during transport in packaging -40 85 °C  Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  <= 2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  To UK RoHS instructions	Note on the ambient temperature with flexible cable installation	-20 - 50 °C for UL applications
Relative air humidity  Max. 93% at 40 °C  Nominal altitude of use  <= 2000 m NHN  Overvoltage category  II  CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  To UK RoHS instructions	Storage temperature	-25 °C55 °C
Nominal altitude of use <= 2000 m NHN  Overvoltage category II  CE mark (see declaration of conformity) In accordance with EU RoHS Directive  CE marking (see declaration of conformity) To UK RoHS instructions	Note on storage temperature	Temporarily during transport in packaging -40 85 °C
Overvoltage category II  CE mark (see declaration of conformity) In accordance with EU RoHS Directive  CE marking (see declaration of conformity) To UK RoHS instructions	Relative air humidity	Max. 93% at 40 °C
CE mark (see declaration of conformity)  In accordance with EU RoHS Directive  To UK RoHS instructions	Nominal altitude of use	<= 2000 m NHN
CE marking (see declaration of conformity)  To UK RoHS instructions	Overvoltage category	II
	CE mark (see declaration of conformity)	In accordance with EU RoHS Directive
	CE marking (see declaration of conformity)	To UK RoHS instructions
LABS (PWIS) conformity VDMA24364-B2-L	LABS (PWIS) conformity	VDMA24364-B2-L
from use. Exceptions are nickel in steel, chemically nickel-plated	Suitability for the production of Li-ion batteries	surfaces, printed circuit boards, cables, electrical plug connectors and
Cleanroom class Class 4 according to ISO 14644-1	Cleanroom class	Class 4 according to ISO 14644-1

Feature	Value
Note on materials	CFC-free RoHS-compliant Cadmium-free Free of halogen Free of phosphoric acid ester
Pollution degree	3
Corrosion resistance class CRC	1 - Low corrosion stress
Material cable sheath	TPE-U(PUR)
Cable sheath colour	grey
Material housing	TPE-U(PUR)
Housing colour	Black
Material screw-type lock	Die-cast zinc, nickel-plated
Material seals	FPM
Material electrical contact	Gold-plated copper alloy
Material insulating sheath	PP