## **SIEMENS**

## **Data sheet**

6ES7158-3MU10-0XA0



SIMATIC PN/MF coupler multi-fieldbus coupler, PN IO, EtherNet/IP, for deterministic data exchange between max. 1 controller per side, redundant current infeed, Ethernet connection via SIMATIC BusAdapter (BA), supplied without BusAdapter

Product type designation Firmware version V5.0.1 FW update possible Vendor identification (VendorID) Fovice identific (DeviceID) Fovice identific (DeviceID) Fovice ID according to ODVA (Product code) Fooduct function Firmware version Firmware v	General information	
FW update possible Vendor identification (VendorID) Device identification (VendorID) Device iD according to ODVA (VendorID) Device iD according to ODVA (Product code)  FADH Product function  Is AM data Isochronous mode Tod changer Local coupling, IO data Local coupling, IO data Local coupling, IO data Local coupling, IO falta STEP 7 TIA Portal configurable/integrated from version FPOFINET from GSD version/GSD revision FPOFINET from GSD version/GSD revision  Installation type/mounting  Mounting  Mounting rail 7.5 mm and 15 mm  Supply voltage  Tested value (DC)  permissible range, lower limit (DC)  permissible range, lower	Product type designation	PN/MF coupler
Vendor identification (VendorID) Device identifier (DeviceID) Device identifier (DeviceID) Device ID according to ODVA (VendorID) Device ID according to ODVA (Product code) Product function  I I&M data I skill data I scorrent of the product function  I identifier (DeviceID) I scorrent of the product function  I identifier (DeviceID) I scorrent of the product function  I identifier (DeviceID) I scorrent of the product function  I identifier (DeviceID) I scorrent of the product function  I skill data I scorrent of the product function of the product func	Firmware version	V5.0.1
Device identifier (DeviceID)  Manufacturer ID according to ODVA (VendorID)  Device ID according to ODVA (Product code)  Product function  I SM data Yes; I&M0 to I&M3  I sochronous mode  Tocl changer  Local coupling, IO data Local coupling, IO data STEP 7 TIA Portal configurable/integrated from version STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision  STEP 7 configurable in (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Permissible range, lower limit (DC) Permissible range, l	<ul> <li>FW update possible</li> </ul>	Yes
Manufacturer ID according to ODVA (VendorID) Device ID according to ODVA (Product code) Product function  I & M data Isochronous mode Tool changer Local coupling, IO data Local coupling, IO data STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision  Installation type/mounting  Mounting Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) Permissible range, lower limit (DC) Reverse polarity protection  Mains buffering Mains buffering Mains buffering Mains current, max. Incush current, max. Inform supply voltage 1L+, max.  Power loss Power loss Power loss, typ.  Address area Address space per module	Vendor identification (VendorID)	002AH
Device ID according to ODVA (Product code) Product function  I & M data I Stochronous mode Tool changer Local coupling, IO data Local coupling, IO data STEP 7 TIA Portal configurable/integrated from version PROFINET from GSD version/GSD revision PROFINET from GSD version/GSD revision Permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Mains buffering Minush current, max. Pt from supply voltage 1L+, max.  Power loss Power loss Power loss, typ.  Ochanger  Prover loss Power loss, typ.  Ochanger  Yes; I&MO to I&M3 Yes; I&MO to I&M3 No	Device identifier (DeviceID)	0604H
Product function  IsM data Iscorbonous mode Tool changer Local coupling, IO data Cocal coc	ů ,	04E3H
IskM data Iscorronous mode Tool changer Local coupling, IO data Local coupling, IO data Local coupling, IO data Local coupling, data records Local coupling, and the records Local coupling, IO data Local coupling IN Local Spling In Local Interface IO lake In Local Interface IO lake In Local Interface IO II Interface	Device ID according to ODVA (Product code)	0FA0H
Step 7 Tool changer     Local coupling, IO data     Local coupling, IO data     Local coupling, data records     No  Engineering with      STEP 7 TIA Portal configurable/integrated from version     STEP 7 configurable/integrated from version     No     Mounting rail 7.5 mm and 15 mm      Mounting rail 7.5 mm and 15 mm      STEP 7 configurable/integrated from version     STEP 7 configurable/integrated from version     No     STEP 7 configurable/integrated from version     No     STEP 7 configurable/integrated from version     STEP 7 configurable/integrated from version     No     STEP 7 configurable/integrated from version     STEP 7 configurable/integrated from version     No     STEP 7 config	Product function	
Tool changer Local coupling, IO data Local coupling, IO data Local coupling, IO data Local coupling, IO data Local coupling, data records  Engineering with STEP 7 TIA Portal configurable/integrated from version STEP 7 Tonfigurable/integrated from version STEP 7 configurable/integrated from version Supply voltage Mounting Mounting Mounting Mounting rail 7.5 mm and 15 mm Supply voltage Rated value (DC) Permissible range, upper limit (D	● I&M data	Yes; I&M0 to I&M3
Local coupling, IO data	<ul> <li>Isochronous mode</li> </ul>	No
Local coupling, data records     Engineering with	Tool changer	Yes; Docking station and docking unit
Engineering with  STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision  Mounting  Mounting  Mounting  Mounting  Mounting rail 7.5 mm and 15 mm  Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Mains buffering Mains/voltage failure stored energy time  Input current  Current consumption, max.  Insub current, max. Insub current Insub curr	<ul> <li>Local coupling, IO data</li> </ul>	No
STEP 7 TIA Portal configurable/integrated from version STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision  Installation type/mounting  Mounting  Mounting  Mounting  Mounting in July Voltage  Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Permissible range, upper limit (DC) Permissible range apper limit (DC) Permissible range apper limit (DC) Reverse polarity protection  Mains buffering  Mains/voltage failure stored energy time  Input current  Current consumption, max.  Insub current, max. Pri 1.6 A 1.6 A 1.6 A 1.7 Current supply voltage 1L+, max.  1.6 A 1.7 Current supply voltage 1L+, max.  Power loss  Power loss, typ.  Address area  Address space per module	1 3:	No
version  • STEP 7 configurable/integrated from version  • PROFINET from GSD version/GSD revision  Installation type/mounting  Mounting  Mounting  Mounting  Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) permissible range application  Mains buffering  • Mains/voltage failure stored energy time  Tourient consumption, max.  Input current  Current consumption, max.  Inrush current, max.  Ift  0.031 A²-s  from supply voltage 1L+, max.  Power loss  Power loss, typ.  Address area  Address space per module		
STEP 7 configurable/integrated from version PROFINET from GSD version/GSD revision  Mounting Mounting Mounting Mounting Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Mains buffering  Mains/voltage failure stored energy time  Input current  Current consumption, max.  Inrush current, max. If A If O.031 A²-s from supply voltage 1L+, max.  Power loss  Power loss, typ.  Address area  Address space per module  Mounting rail 7.5 mm and 15 mm  Mounting rail 7.5 mm and 15 mm  Mounting rail 7.5 mm and 15 mm  Som A: for max 15 mm  15 mm and 15 mm  Mounting rail 7.5 mm and 15 mm  Supply voltage failure stored energy imm and 15 mm  Mounting rail 7.5 mm and 15 mm  Supply voltage at the right-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  Address area  Address space per module	ŭ ŭ	
PROFINET from GSD version/GSD revision  Installation type/mounting  Mounting  Mounting  Mounting Mounting rail 7.5 mm and 15 mm  Supply voltage  Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible		
Installation type/mounting  Mounting  Mounting in Mounting rail 7.5 mm and 15 mm  Supply voltage  Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Mains buffering  • Mains/voltage failure stored energy time  Input current  Current consumption, max.  Current consumption, max.  1.6 A Inrush current, max.  1.6 A 1.74 1.6 A 2.0 mA; for 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  Inrush current, max.  1.6 A 2.0 mA; for 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	ğ ğ	
Mounting Mounting rail 7.5 mm and 15 mm  Supply voltage  Rated value (DC)		VZ.5
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection  • Mains buffering • Mains/voltage failure stored energy time  10 ms  Input current  Current consumption, max.  Inrush current, max. Inrush current, max. In 6 A It 0.031 A2-s from supply voltage 1L+, max.  Power loss  Power loss  Power loss, typ.  Address area  Address space per module		
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Mains buffering  • Mains/voltage failure stored energy time  Input current  Current consumption, max.  Current consumption, max.  Inrush current, max.  It including 2 plugged BA  Inrush current, max.  If if including 2 plugged BA  Insupply voltage 1L+, max.  320 mA; for 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	Mounting	Mounting rail 7.5 mm and 15 mm
permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection  Mains buffering  • Mains/voltage failure stored energy time  Input current  Current consumption, max.  Inrush current, max. If a	Supply voltage	
permissible range, upper limit (DC) Reverse polarity protection  Mains buffering  Mains/voltage failure stored energy time  10 ms  Input current  Current consumption, max.  Inrush current, max.  I²t  from supply voltage 1L+, max.  Towar loss  Power loss  Power loss, typ.  Address area  Address space per module  28.8 V  Yes  36.0 mA; for 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  10 ms  10	Rated value (DC)	
Reverse polarity protection  Mains buffering  Mains/voltage failure stored energy time  10 ms  Input current  Current consumption, max.  360 mA; for 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  Inrush current, max.  I²t  1.6 A  1.6 A  1.6 A  2.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  Insush current, max.  Insush current, max.  I²t  2.0 0.31 A²⋅s  320 mA; for 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	permissible range, lower limit (DC)	19.2 V
Mains buffering	permissible range, upper limit (DC)	28.8 V
<ul> <li>Mains/voltage failure stored energy time</li> <li>Input current</li> <li>Current consumption, max.</li> <li>Including 2 plugged BA</li> <li>Inrush current, max.</li> <li>Including 2 plugged BA</li> <li>Insupply voltage 1L+, max.</li> <li>Including 2 plugged BA</li> <li>Insupply voltage 1L+, max.</li> <li>Including 2 plugged BA</li> <li< td=""><td>Reverse polarity protection</td><td>Yes</td></li<></ul>	Reverse polarity protection	Yes
Current consumption, max.  360 mA; for 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  Inrush current, max.  I²t  from supply voltage 1L+, max.  320 mA; for 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	-	
Current consumption, max.  360 mA; for 19.2 V input voltage at the right-hand supply terminal, including 2 plugged BA  Inrush current, max.  I²t  0.031 A²-s  from supply voltage 1L+, max.  320 mA; for 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module		10 ms
including 2 plugged BA  Inrush current, max.  I²t  from supply voltage 1L+, max.  Power loss  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address space per module	Input current	
I²t from supply voltage 1L+, max.  320 mA; for 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	Current consumption, max.	
from supply voltage 1L+, max.  320 mA; for 19.2 V input voltage at the left-hand supply terminal, including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	Inrush current, max.	1.6 A
including 2 plugged BA  Power loss  Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	l <sup>2</sup> t	0.031 A²·s
Power loss, typ.  4 W; For 24 V input voltage and 2 plugged BA 2x RJ45 If BusAdapters with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	from supply voltage 1L+, max.	
with an optical interface are plugged, there is an additional 750 mW per optical interface (3 W with 2 plugged BA 2x LC)  Address area  Address space per module	Power loss	
Address space per module	Power loss, typ.	with an optical interface are plugged, there is an additional 750 mW per
	Address area	
Address space per module, max.     254 byte; max. 254 bytes of input data and 253 bytes of output data	Address space per module	
	<ul> <li>Address space per module, max.</li> </ul>	254 byte; max. 254 bytes of input data and 253 bytes of output data

Address space per station	
Address space per station  • Address space per station, max.	1 440 byte; per input / output
Hardware configuration	1 440 byte, per input / output
Submodules	
Number of submodules per station, max.	116
Interfaces	
Number of PROFINET interfaces	2: One DDOEINET interface per line side
Optical interface	2; One PROFINET interface per line side No
1. Interface	140
Interface types  • Number of ports	2; via BusAdapter
• integrated switch	Yes
BusAdapter (PROFINET)	Yes; compatible BusAdapters: BA 2x RJ45, BA 2x FC, BA 2x M12
Protocols	
PROFINET IO Device	Yes
Open IE communication	Yes
<ul> <li>Media redundancy</li> </ul>	Yes; as MRP client, maximum of 50 nodes in the ring
2. Interface	
Interface types	
Number of ports	2; via BusAdapter
integrated switch	Yes
Protocols	
PROFINET IO Device	Yes
Open IE communication     Madia redundancy	Yes
Media redundancy	Yes; as MRP client, maximum of 50 nodes in the ring
Interface types	
RJ 45 (Ethernet)	DDOGINET ''' 400 MI ''' 5 II I I 4400 DAOE TW
Transmission procedure	PROFINET with 100 Mbit/s full duplex (100BASE-TX)
• 10 Mbps	No Voc. PROFINET with 100 Mbit/o full duploy (100PASE TV)
100 Mbps     Autopagatiation	Yes; PROFINET with 100 Mbit/s full duplex (100BASE-TX) Yes
<ul><li>Autonegotiation</li><li>Autocrossing</li></ul>	Yes
Protocols	103
Supports protocol for PROFINET IO	Yes
Modbus TCP	No
Protocols (Ethernet)	140
• TCP/IP	Yes
• SNMP	Yes
• LLDP	Yes
• ping	Yes
• ARP	Yes
PROFINET IO Device	
Services	
— IRT	No
— PROFlenergy	No
— Prioritized startup	Yes
— Shared device	No
Redundancy mode	Yes; NAP S2 acc. to IEC
<ul> <li>PROFINET system redundancy (S2)</li> <li>Media redundancy</li> </ul>	163, NAT 32 acc. to ILO
— MRP	Yes
— MRPD	No
EtherNet/IP	
Services	
— CIP Implicit Messaging	Yes
— CIP Explicit Messaging	Yes
— CIP Safety	No
Updating times	
— Requested Packet Interval (RPI)	2 ms
Address area	
— Address space per module, max.	244 byte; (244 byte outputs / 244 byte inputs)
<ul> <li>ForwardOpen (Class1 &amp; 32 bit Header)</li> </ul>	500 byte; (496 byte outputs / 500 byte inputs)

— LargeForwardOpen (Class3)	4 002 byte
Open IE communication	1 002 0310
• TCP/IP	Yes
• SNMP	Yes
• LLDP	Yes
Interrupts/diagnostics/status information	
Status indicator	Yes
Alarms	Yes
Diagnostics function	Yes; Parameterizable
Diagnostics indication LED	1 50, 1 didiliotorizatio
• RUN LED	Yes; green LED
• ERROR LED	Yes: red LED
MAINT LED	Yes; Yellow LED
• LINK LED	Yes; 2x green link LEDs on BusAdapter
Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
NS LED	
	Yes; green/red LED
• MS LED	Yes; green/red LED
• IO LED	Yes; red-green-yellow LED
Potential separation	
between supply voltage and electronics	Yes; to power input 2
between Ethernet and electronics	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
network separator in accordance with IEC 61784-3-3	Yes
Network loading class	3
Security level	According to Security Level 1 Test Cases V1.1.4
Ambient conditions	
Ambient temperature during operation	
• min.	-30 °C; No condensation
• max.	60 °C; = Tmax for horizontal installation; for vertical installation Tmax = 50 °C
Altitude during operation relating to sea level	
Altitude during operation relating to sea level  • Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see section "Climatic and mechanical environmental conditions"
Installation altitude above sea level, max.	
Installation altitude above sea level, max.  Mechanics/material	"Climatic and mechanical environmental conditions"
<ul> <li>Installation altitude above sea level, max.</li> <li>Mechanics/material</li> <li>Strain relief</li> </ul>	"Climatic and mechanical environmental conditions"
<ul> <li>Installation altitude above sea level, max.</li> <li>Mechanics/material</li> <li>Strain relief</li> <li>Dimensions</li> <li>Width</li> </ul>	"Climatic and mechanical environmental conditions"  Yes; Optional, for RJ45 and FC BusAdapter only
<ul> <li>Installation altitude above sea level, max.</li> <li>Mechanics/material</li> <li>Strain relief</li> <li>Dimensions</li> <li>Width</li> <li>Height</li> </ul>	"Climatic and mechanical environmental conditions"  Yes; Optional, for RJ45 and FC BusAdapter only  100 mm  117 mm
<ul> <li>Installation altitude above sea level, max.</li> <li>Mechanics/material</li> <li>Strain relief</li> <li>Dimensions</li> <li>Width</li> <li>Height</li> <li>Depth</li> </ul>	"Climatic and mechanical environmental conditions"  Yes; Optional, for RJ45 and FC BusAdapter only  100 mm
<ul> <li>Installation altitude above sea level, max.</li> <li>Mechanics/material</li> <li>Strain relief</li> <li>Dimensions</li> <li>Width</li> <li>Height</li> <li>Depth</li> <li>Weights</li> </ul>	"Climatic and mechanical environmental conditions"  Yes; Optional, for RJ45 and FC BusAdapter only  100 mm  117 mm  74 mm; with mounting rail
<ul> <li>Installation altitude above sea level, max.</li> <li>Mechanics/material</li> <li>Strain relief</li> <li>Dimensions</li> <li>Width</li> <li>Height</li> <li>Depth</li> </ul>	"Climatic and mechanical environmental conditions"  Yes; Optional, for RJ45 and FC BusAdapter only  100 mm  117 mm