DATASHEET - EU5C-SWD-ETHERCAT

SWD gateway; 99 SWD cards on EtherCAT

Part no. **EU5C-SWD-ETHERCAT**
177354

General specifications	
Product name	Eaton EU5C Communication module
Part no.	EU5C-SWD-ETHERCAT
EAN	4015081718146
Product Length/Depth	127 millimetre
Product height	90 millimetre
Product width	35 millimetre
Product weight	0.16 kilogram
Certifications	UL report applies to both US and Canada UL IEC/EN 61131-2 CSA UL File No.: E221530 UL Category Control No.: NRQA
Product Tradename	EU5C
Product Type	Communication module
Product Sub Type	None
Catalog Notes	The gateway features a separate USB diagnostic interface (mini USB). If SWD modules with a total current consumption > 0.7 A are connected, a power feeder module EU5C-SWD-PF2 has to be used. If contactors with a total current consumption > 3 A are connected, a power feeder module EU5C-SWD-PF1/2 has to be used.
Features & Functions	
Features	Potential isolation (Fieldbus Interface) Overload proof
Functions	For connection to an EtherCAT fieldbus as a slave
Operating mode	Address allocation via EtherCAT
General information	
Degree of protection	IP20
Overvoltage category	II
Pollution degree	2
Product category	SmartWire-DT coordinators
Repetition rate	1 s
Residual ripple	≤ 5 % (input voltage)
Suitable for	Safety functions
Terminal capacity	24 - 16 AWG, solid or stranded 0.25 - 1.5 mm^2, flexible with ferrule 0.2 - 1.5 mm^2, solid
Voltage type	DC
Ambient conditions, mechanical	
Constant acceleration	1 g, 9 - 150 Hz, according to IEC/EN 61131-2, Vibrations
Constant amplitude	3,5 mm, 5 - 9 Hz, according to IEC/EN 61131-2, Vibrations
Drop and topple	50 mm Drop height, Drop to IEC/EN 60068-2-31
Height of fall (IEC/EN 60068-2-32) - max	1 m
Mounting position	As required
Shock resistance	15 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 11 ms, 9 Impacts
Climatic environmental conditions	
Air pressure	795 - 1080 hPa (operation)
Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	55 °C
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	70 °C

Climatic proofing	In accordance with IEC 60068-2
Operating temperature - min	-25 °C
Operating temperature - max	55 °C
Relative humidity	5 - 95 % (non-condensing, IEC/EN 60068-2-30)

Electro magnetic compatibility

Air discharge	8 kV, according to IEC 61131-2, level 3, ESD
Burst impulse	1 kV 2 kV, Supply cable, according to IEC/EN 61131-2, Level 3 1 kV, SmartWire-DT cable, according to IEC/EN 61131-2, Level 3
Contact discharge	4 kV, according to IEC/EN 61131-2, Level 2, ESD
Electromagnetic fields	3 V/m at 1.4 - 2 GHz (according to IEC/EN 61131-2:2008) 1 V/m at 2.0 - 2.7 GHz (according to IEC/EN 61131-2:2008) 10 V/m at 80 - 1000 MHz (according to IEC/EN 61131-2:2008)
Radiated RFI	10 V (IEC/EN 61131-2:2008, Level 3)
Radio interference class	Class A (EN 55011)
Surge rating	0.5 kV, Supply cable, Surge (IEC/EN 61131-2:2008, Level 1), EMC
Voltage dips	≤ 10 ms, Bridging voltage dips

Electrical rating

Inrush current	44 A (for 2 ms)
Power loss	Normally 1 W
Rated control supply voltage	24 V DC (UAUX, -15 %/+20 %) 24 V DC (UPOW, -15 %/+20 %)
Rated operational current (Ie)	0.7 A
Rated operational voltage	14.5 V (± 3 % - SmartWire-DT) Typically UAUX -0.2 V (for 24 V DC slaves)
Short-circuit protection	Yes, Short-circuit rating, SmartWire-DT supply voltage No, external fuse FAZ Z3, Supply voltage UAux
Supply current - max	0.7 mA
Supply voltage at AC, 50 Hz - min	0 V
Supply voltage at AC, 50 Hz - max	0 V
Supply voltage at DC - min	20.4 V
Supply voltage at DC - max	28.8 V

Communication

Connection	Used to connect the SmartWire-DT communication system to industrial field bus systems. Powers SmartWire-DT modules and switchgear SmartWire-DT blade terminal SWD4-8MF2 A connection to EtherCAT can be established using the integrated 100 Mbit/s Ethernet switch as slave. SmartWire-DT gateway for connecting up to 99 SmartWire-DT modules to an Industrial Ethernet network and for powering the SmartWire-DT modules and switchgear.
Connection type	SWD: Plug, 8-pole 2 x RJ45 (2-channel switch), Field bus interface Push in terminals, Supply voltage
Data transfer rate	542 Byte, Fieldbus interface, Output data, max. 250 kBit/s, SmartWire-DT 125 kBit/s, SmartWire-DT 100 MBit/s, Fieldbus interface 800 Byte, Fieldbus interface, Input data, max.
Interfaces	Status display fieldbus interface for APL, RUN, ERR, L/A with Multi colour LED Module type: EtherCAT slave
LED indicator	Status indication of Supply voltage: LED Status indication of SmartWire-DT network: Configurable green or red LED Status indication of SmartWire-DT master: Green and red LEDs
Number of modules	99 (SmartWire-DT)
Protocol	Other bus systems EtherCAT
Station	SmartWire-DT master, SmartWire-DT network IP, Station address, Fieldbus interface

Safety

Explosion safety category for dust	None
Explosion safety category for gas	None
Potential isolation	Between UPow and 15 V SmartWire-DT supply voltage: no Supply voltage UAUX: no
Protection against polarity reversal	Yes, for supply voltage (Siemens MPI optional) Yes

Design verification

Equipment heat dissipation, current-dependent Pvid			4.4 W
Heat dissipation capacity Pdiss			0 W
Heat dissipation per pole, current-dependent Pvid			0 W
Rated operational current for specified heat dissipation (In)			0 A
Static heat dissipation, non-current-dependent Pvs			1 W
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of assemblies			Meets the product standard's requirements.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 9.0

Programmable logic controllers PLC (EG000024) / Fieldbus, decentr. periphery - communication module (EC001604)

Electric engineering, automation, process control engineering / Control, Process Control System (PCS) / Field bus, decentralized peripheral / Field bus, decentralized peripheral - communications module (ecl@ss13-27-24-26-08 [BAA073018])

Supply voltage AC 50 Hz		V	0 - 0
Supply voltage AC 60 Hz		V	0 - 0
Supply voltage DC		V	20.4 - 28.8
Voltage type (supply voltage)			DC
Number of HW-interfaces CAN			0
Number of HW-interfaces industrial Ethernet			2
Number of interfaces PROFINET			0
Number of HW-interfaces RS-232			0
Number of HW-interfaces RS-422			0
Number of HW-interfaces RS-485			0
Number of HW-interfaces serial TTY			0
Number of HW-interfaces USB			1
Number of HW-interfaces parallel			0
Number of HW-interfaces wireless			0
Number of HW-interfaces other			0
Supporting protocol for EtherCAT			Yes
Supporting protocol for TCP/IP			No
Supporting protocol for PROFIBUS			No
Supporting protocol for CAN			No
Supporting protocol for INTERBUS			No
Supporting protocol for ASI			No
Supporting protocol for KNX			No

Supporting protocol for Modbus		No
Supporting protocol for Data-Highway		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		No
Supporting protocol for LON		No
Supporting protocol for SERCOS		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		No
Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS-Safety		No
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		Yes
Radio standard Bluetooth		No
Radio standard WLAN 802.11		No
Radio standard GPRS		No
Radio standard eGPRS		No
Radio standard GSM		No
Radio standard LTE		No
Radio standard UMTS		No
IO link master		No
System accessory		Yes
Degree of protection (IP)		IP20
With potential separation		No
Fieldbus connection over separate bus coupler possible		No
Rail mounting possible		Yes
Wall mounting/direct mounting		Yes
Front built-in possible		No
Rack-assembly possible		No
Suitable for safety functions		Yes
SIL according to IEC 61508		None
Performance level according to EN ISO 13849-1		None
Appendant operation agent (Ex ia)		No
Appendant operation agent (Ex ib)		No
Explosion safety category for gas		None
Explosion safety category for dust		None
Certified for UL hazardous location class I		No
Certified for UL hazardous location class II		No
Certified for UL hazardous location class III		No
Certified for UL hazardous location division 1		No
Certified for UL hazardous location division 2		No
Certified for UL hazardous location group A (acetylene)		No
Certified for UL hazardous location group B (hydrogen)		No
Certified for UL hazardous location group C (ethylene)		No
Certified for UL hazardous location group D (propane)		No
Certified for UL hazardous location group E (metal dusts)		No
Certified for UL hazardous location group F (carbonaceous dusts)		No
Certified for UL hazardous location group G (non-conductive dusts)		No
Width	mm	35
Height	mm	90
Depth	mm	127

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