DATASHEET - EASY806-DC-SWD

Control relay, 24 V DC, 4DI(2DI, 2DO), easyNet, SmartWire-DT

Part no.	**EASY806-DC-SWD**
Catalog No.	**152902**
Alternate Catalog No.	**EASY806-DC-SWD**
EL-Nummer (Norway)	**4520981**

Powering Business Worldwide

Delivery program

Product range			SmartWire-DT coordinators
Basic function			easy800 with SmartWire-DT
Description			Combines the functionality of an easy800 with direct connection to SmartWire-DT communication system Up to 99 SmartWire-DT modules with a total of up to 166 digital inputs/outputs and/or up to 128 analog inputs/outputs can be connected via a SmartWire-DT line
Inputs			
Digital			4
Of which can be used as outputs			2
SmartWire-DT			83
Outputs			
Quantity of outputs			Transistor: 2
Outputs		Number	2
Transistor			2
SmartWire-DT			83
Additional features			
Real time clock			#
Expansions			SmartWire-DT Networkable (easyNet)
Supply voltage			24 V DC
Software			EASY-SOFT-PRO
Connection type			screw terminal

Notes

Depending on the hardware, such as integrated analog input/output not supported

Count functions: 2 x incremental value counter up/down (per 2 inputs); 4 x high-speed counter single-channel (per 1 input);

4 x frequency counters (per 1 input)

2 x pulse-width modulated outputs (2 counter inputs omitted)

Technical data

General

Standards			EN 55011, EN 55022, IEC/EN 61000-4, IEC 60068-2-6, IEC 60068-2-27
Approvals			CSA UL EAC
Dimensions (W x H x D)		mm	35 x 110 x 125.5 (2 PE)
Weight		kg	0.16
Mounting			Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)

Terminal capacities

Solid		mm^2	0.2/1.5 (AWG 24 - 16)
Flexible with ferrule		mm^2	0.2/1.5 (AWG 24 - 16)

Climatic environmental conditions

Operating ambient temperature		°C	In accordance with IEC 60068-2-1, -25 - +55
Condensation			Take appropriate measures to prevent condensation
Storage	ϑ	°C	In accordance with IEC 60068-2-1, -2, -14 -40 - +70

relative humidity		%	in accordance with IEC 60068-2-30, IEC 60068-2-78 5 - 95
Air pressure (operation)		hPa	795 - 1080

Ambient conditions, mechanical

Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20
Vibrations		Hz	In accordance with IEC 60068-2-6 constant amplitude 0.15 mm: 10 - 57 constant acceleration 2 g: 57 - 150
Mechanical shock resistance (IEC/EN 60068-2-27) semi-sinusoidal 15 g/11 ms		Impacts	18
Drop to IEC/EN 60068-2-31	Drop height	mm	50
Free fall, packaged (IEC/EN 60068-2-32)		m	0.3
Mounting position			Vertical or horizontal

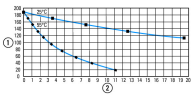
Electromagnetic compatibility (EMC)

Overvoltage category/pollution degree			III/2
Electrostatic discharge (ESD)			
applied standard			according to IEC EN 61000-4-2
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (RFI) to IEC EN 61000-4-3		V/m	0.8 - 1.0 GHz: 10 1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1
Radio interference suppression			EN 55011 Class B
Burst		kV	according to IEC/EN 61000-4-4 Supply cables: 2 Signal cables: 2 easyNet: 2 SWD lines: 2
power pulses (Surge)			according to IEC/EN 61000-4-5 1 kV (supply cables, symmetrical)
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10

Insulation resistance

Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, No. 142
Insulation resistance			EN 50178

Back-up of real-time clock

Back-up of real-time clock			
			① Backup time (hours) with fully charged double layer capacitor ② Service life (years)
Accuracy of real-time clock to inputs		s/day	typ. ± 2 (± 0.2 h/Year)
			depending on ambient air temperature fluctuations of up to ± 5 s/day (± 0.5 h/year) are possible

Repetition accuracy of timing relays

Accuracy of timing relays (of values)		%	± 0.02
Resolution			
Range “S”		ms	5
Range “M:S”		s	1
Range “H:M”		min	1

Retentive memory

Write cycles of the retentive memory			10^{14} (read/write cycles)

Power supply

Rated operational voltage	U_e	V	24 DC (-15/+20%)
Permissible range	U_e		20.4 - 28.8 V DC
Residual ripple		%	≦ 5
Protection against polarity reversal			yes
Input current			normally 900 mA at U_e
Inrush current and length		A	12.5 for 6 ms
Voltage dips		ms	≤ In accordance with IEC 61131-2 ≤ 10
Fuse		A	≧ 3 A (T) (e.g FAZ C3)
Power loss	P	W	Normally 1
Note on heat dissipation			Current consumption at 24 V DC

Digital inputs 24 V DC

Number			4
Status Display			LED
Potential isolation			from power supply: no between digital inputs: no from the outputs: no to COM interface: yes to easyNet: yes to AUX: yes to SmartWire-DT: no
Rated operational voltage	U_e	V DC	24
Input voltage		V DC	Signal 0: ≦ 5 (I1 - I4) Signal 1: ≧ 15 (I1 - I4)
Input current at signal 1		mA	I1 - I4: 3.9
Deceleration time		ms	20 (0 -> 1/1 -> 0, Debounce ON) normally 0.025 (0 -> 1/1 -> 0, Debounce OFF)
Cable length		m	100 (unshielded)
Frequency counter			
Number			4 (I1, I2, I3, I4)
Counter frequency		kHz	≦ 5
Pulse shape			Square
Pulse pause ratio			1:1
Cable length		m	≦ 20 (screened)
Incremental counter			
Number of counter inputs			2 (I1 + I2, I3 + I4)
Counter frequency		kHz	≦ 5
Pulse shape			Square
Signal offset			90°
Pulse pause ratio			1:1
Rapid counter inputs			
Number			4 (I1, I2, I3, I4)
Cable length		m	≦ 20 (screened)
Counter frequency		kHz	≦ 5
Pulse shape			Square
Pulse pause ratio			1:1

Transistor outputs

Number			2
Potential isolation			from power supply: no From the inputs: yes: no to COM interface: yes to easyNet: yes to AUX: yes
Rated operational current at signal „1" DC per channel	I_e	A	max. 0.1
Lamp load without R_v per channel		W	1.2
Residual current on 0 signal per channel		mA	< 0.1
Max. output voltage		V	2.5 (signal 0 at external load < 10 MΩ) U = U_e - 2 V (signal 1 at I_e = 0.1 A)
Short-circuit protection			Yes, electronic (Q1 - Q2)
Short-circuit tripping current for R_a ≦ 10 mΩ		A	0.15 - 0.35 per output depending on number of active channels and their load
Peak short-circuit current		A	10 A/80 ms (on short-circuit) 10 A/20 ms (on attempted restart of device after 10s)
Thermal cutout			no
Output status indication			LED

Supply voltage U_{Aux}

Rated operational voltage	U_{Aux}	V	24 V DC (-15/+20%)
Permissible range			20.4 - 28.8 V DC
Output voltage SWD-OUT			U_e - 0.3 V
Protection against polarity reversal			yes
Residual ripple on the input voltage		%	≦ 5
Max. current	I_{max}	A	3 (IEC) 2 (UL)

Short-circuit rating			no
Heat dissipation		W	Normally 1 W at 24 V DC
Potential isolation			from power supply POW: yes From the inputs: yes from the outputs: yes to COM interface: yes to easyNet: yes to SmartWire-DT: yes
Power loss	P	W	1

SmartWire-DT supply voltage

Rated operating voltage	U_e	V	14.5 ± 3 %
max. current	I_{max}	A	0.7
Short-circuit rating			Yes
Potential isolation			from power supply POW: no From the inputs: yes: no from the outputs: no to COM interface: yes to easyNet: yes to AUX: yes

SmartWire-DT network

Station type			Master
Number of SmartWire-DT slaves			Max. 600
Baud Rates		kBd	125/250
Address allocation			Automatically (via Configuration button)
Status indication		LED	SWD-LED: orange/green/red Config. LED: green/red
Connections			Plug, 8-pole
Plug connector			Blade terminal SWD4-8MF2
Bus termination			Integrated in the device SmartWire-DT line end with SWD4-RC8-10

Network easyNet

Module		Count	Max. 8
Data transfer rate/distance			1000 KBit/s, 6 m 500 KBit/s, 25 m 250 Kbit/s, 40 m 125 Kbit/s, 300 m 50 KBit/s, 300 m 20 KBit/s, 700 m 10 KBit/s, 1000 m Lengths from 40 m can be obtained only with cables with reinforced cross-section and terminal adapter.
Potential isolation			from power supply POW: yes From the inputs: yes from the outputs: yes to COM interface: yes to SmartWire-DT: yes to AUX: yes
Bus termination (first and last station)			yes
Terminal types			RJ45, 8-polig
Terminal capacity			up to 1000 m, < 16 mΩ/m: 1.5 (AWG: 16) up to 600 m, < 26 mΩ/m: 0.75 - 0.8 (AWG: 18) up to 600 m, < 26 mΩ/m: 0.5 - 0.6 (AWG: 20, 19) up to 400 m, < 40 mΩ/m: 0.34 - 0.5 (AWG: 22, 21, 20) up to 250 m, < 60 mΩ/m: 0.25 - 0.34 (AWG: 23, 22) up to 175 m, < 70 mΩ/m: 0.13 (AWG: 26) up to 40 m, < 140 mΩ/m: 1.5 (AWG: 16)

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	0
Heat dissipation per pole, current-dependent	P_{vid}	W	0
Equipment heat dissipation, current-dependent	P_{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	6
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			

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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			
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 7.0

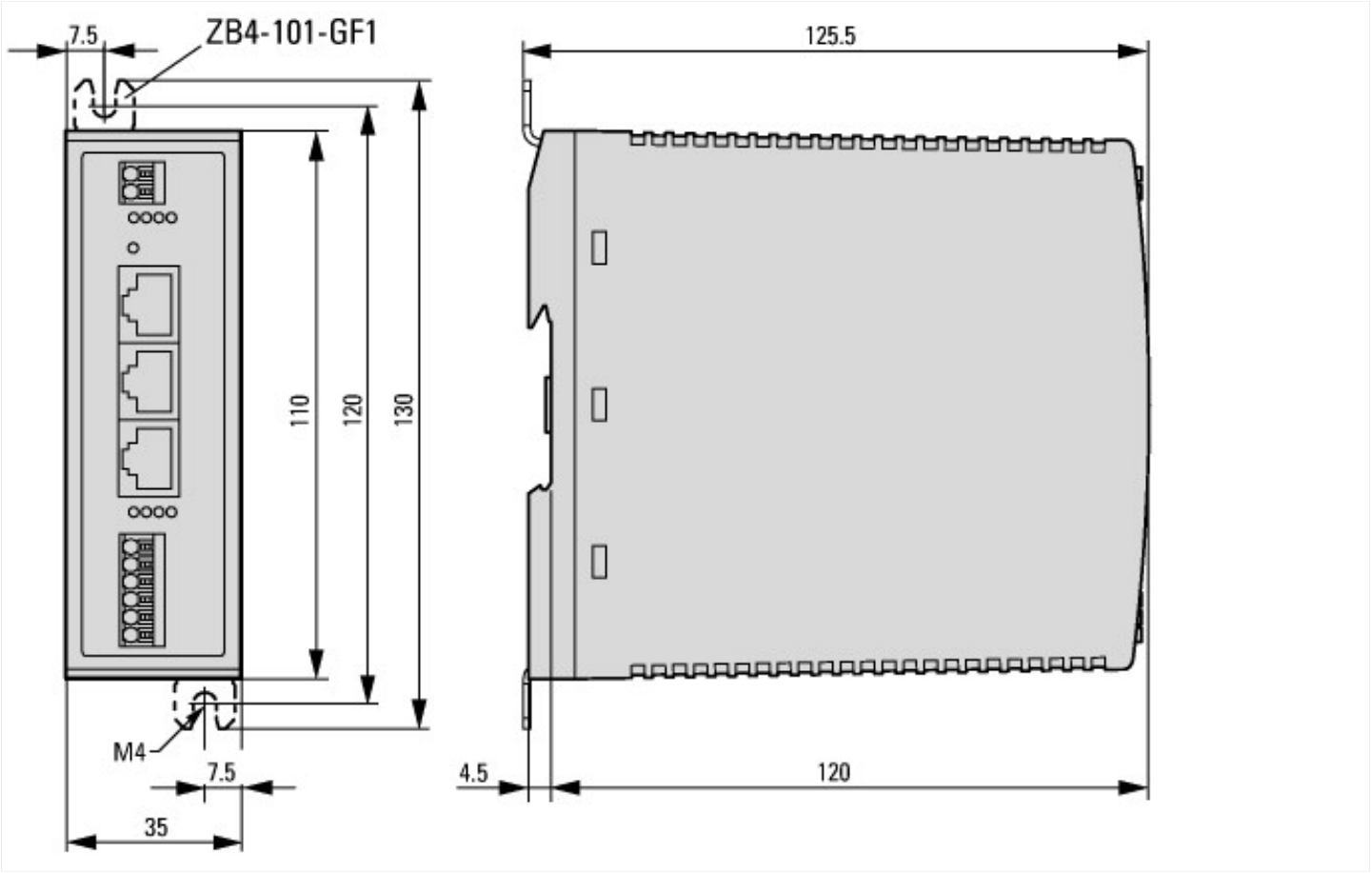
PLC's (EG000024) / Logic module (EC001417)		
Electric engineering, automation, process control engineering / Control / Programmable logic control (SPS) / Logic module (ecl@ss10.0.1-27-24-22-16 [AKE539014])		
Supply voltage AC 50 Hz	V	0 - 0
Supply voltage AC 60 Hz	V	0 - 0
Supply voltage DC	V	20.4 - 28.8
Voltage type of supply voltage		DC
Switching current	A	0.1
Number of analogue inputs		0
Number of analogue outputs		0
Number of digital inputs		4
Number of digital outputs		2
With relay output		No
Number of HW-interfaces industrial Ethernet		0
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		0
Number of HW-interfaces parallel		0
Number of HW-interfaces Wireless		0
Number of HW-interfaces other		3
With optical interface		No
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 PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		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 GSM		No
Radio standard UMTS		No
IO link master		No
Redundancy		No
With display		No
Degree of protection (IP)		IP20
Basic device		Yes
Expandable		Yes
Expansion device		No
With timer		Yes
Rail mounting possible		Yes
Wall mounting/direct mounting		Yes
Front build in possible		No
Rack-assembly possible		No
Suitable for safety functions		No
Category according to EN 954-1		None
SIL according to IEC 61508		None
Performance level acc. 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
Width	mm	35
Height	mm	110
Depth	mm	125.5

Approvals

Product Standards		IEC/EN see Technical Data; UL508; CSA C22.2 No. 142-M1987
UL File No.		E135462
UL Category Control No.		NRAQ, NRAQ7
CSA File No.		UL report applies to both US and Canada
CSA Class No.		2252-01 + 2258-02
North America Certification		UL listed, certified by UL for use in Canada
Degree of Protection		IEC: IP20, UL/CSA Type: -

Dimensions



Additional product information (links)

IL05013041Z Instruction leaflet easy800-SWD	
IL05013041Z Instruction leaflet easy800-SWD	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL05013041Z2018_02.pdf
Manual "easy800 control relays" MN04902001Z (AWB2528-1423)	
Handbuch „Steuerrelais easy800“ MN04902001Z (AWB2528-1423) - Deutsch	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04902001Z_DE.pdf
Manual "easy800 control relays" MN04902001Z (AWB2528-1423) - English	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN04902001Z_EN.pdf
SmartWire-DT product range catalog	http://ecat.moeller.net/flip-cat/?edition=SWKAT&startpage=12
Technical data	http://ecat.moeller.net/flip-cat/?edition=SWKAT&startpage=54
BR05013001Z-EN, easy Family	http://www.moeller.net/binary/w_brochures/br05013001Z-en.pdf