Data sheet

SIMATIC ET 200SP, digital output module DQ 4x 24..230V AC/2A HF packaging unit: 1 piece, two alternative modes: DQ and power control, fits to BU-Type U0, color code CC20, channel diagnosis



DQ 4x24 230 V AC/2 A HF, PU 1
From FS03
Yes
BU type U0
CC20
Yes; I&M0 to I&M3
No
V14
STEP 7 V5.5 or higher
GSD as of Revision 5
GSDML V2.3
Yes

PWM Oversampling No Oversampling No No No No No Phase control Trailing-edge phase No I-laff-wave Full-wave Yes Full-wave Yes Supply voltage Rated value (AC) Permissible range, lower limit (AC) Permissible range, upper limit (AC) Power loss Power loss, typ. Power loss Power loss, typ. Power loss Power loss, typ. Power loss Power loss paper module Plantage area Address area Address area Address space per module Plantage area Address pace per module Plantage area Power loss typ. Power loss t	 DQ with energy-saving function 	Yes
MSO Phase control Phase control Phase control Trailing-edge phase No Phase control Trailing-edge phase Power loss Power loss, typ. Address area Address space per module Inputs Outputs Power loss, typ. Address area Address space per module Inputs Outputs But ybe uo Byte Digital outputs Parks Selection of BaseUnit for connection But type uo Power loss Power loss Power loss, typ. But byte uo But ype uo	• PWM	No
Phase control Trailing-edge phase No Half-wave Full-wave Full-wav	Oversampling	No
Trailing-edge phase Half-wave Full-wave Full-wave Yes Supply voltage Rated value (AC) Power loss Power loss, typ. Address area Address space per module Inputs Outputs Plants Outputs Purs By W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs Outputs By W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs Outputs Purs By W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address pace per module Inputs Outputs By W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address pace per module Inputs Outputs By W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address pace per module Inputs Outputs By W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address pace per module Inputs In	• MSO	No
Half-wave Full-wave Full-wave Full-wave Yes Supply voltage Rated value (AC) 230 V; 47 63 Hz, max. rate of change of frequency 1 mHz/s permissible range, lower limit (AC) 264 V Input current Current consumption (rated value) Rated value (AC) Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs 1-lupts 4-1 byte for QI information Automatic encoding Yes Hardware configuration Automatic encoding Yes Selection of BaseUnit for connection variants 1wire connection BU type U0 2-wire connection BU type U0 3-wire connection BU type U0 4-wire connection BU type U0 4-ywire connection BU type U0 4-ywi	Phase control	Yes; Control area: 8.5 100% of the phase angle
• Full-wave Yes Supply voltage Rated value (AC) 230 V; 47 63 Hz, max. rate of change of frequency 1 mHz/s permissible range, lower limit (AC) 264 V Input current Current consumption (rated value) 8 mA; without load Output voltage Rated value (AC) 230 V; 24V AC to 230V AC Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module • Inputs + 1 byte for QI information 8 byte Hardware configuration Automatic encoding Yes • Mechanical coding element Yes Selection of BaseUnit for connection variants • 1-wire connection BU type U0 • 2-wire connection BU type U0 • 3-wire connection BU type U0 • 3-wire connection BU type U0 • 3-wire connection BU type U0 • 10 type U0 • 3-wire connection Yes Number of digital outputs Automatic encoding Yes Number of digital outputs Ves Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Trailing-edge phase	No
Supply voltage Rated value (AC)	Half-wave	Yes
Rated value (AC) permissible range, lower limit (AC) permissible range, upper limit (AC) permissible range, upper limit (AC) 264 V Input current Current consumption (rated value) 8 mA; without load Output voltage Rated value (AC) Power loss Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs I	• Full-wave	Yes
Rated value (AC) permissible range, lower limit (AC) permissible range, upper limit (AC) permissible range, upper limit (AC) 264 V Input current Current consumption (rated value) 8 mA; without load Output voltage Rated value (AC) Power loss Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs I	Supply voltage	
permissible range, upper limit (AC) Input current Current consumption (rated value) 8 mA; without load Output voltage Rated value (AC) Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs Outputs Hardware configuration Automatic encoding Mechanical coding element Selection of BaseUnit for connection wariants 1 -wire connection 2 -wire connection BU type U0 3 -wire connection BU type U0 + Potential isolation module Digital outputs No Current-sourcing Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel		230 V; 47 63 Hz, max. rate of change of frequency 1 mHz/s
Input current Current consumption (rated value) 8 mA; without load Output voltage Rated value (AC) 230 V; 24V AC to 230V AC Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs Outputs 1 byte for QI information Automatic encoding Yes Nechanical coding element 9 tyes Selection of BaseUnit for connection variants 1 -wire connection 2 -wire connection BU type U0 3 -wire connection BU type U0 4 - Current-sinking No Current-sinking No Current-sourcing Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	permissible range, lower limit (AC)	20.4 V
Current consumption (rated value) 8 mA; without load Output voltage Rated value (AC) 230 V; 24V AC to 230V AC Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs +1 byte for Ql information Outputs 8 byte Hardware configuration Automatic encoding Yes Mechanical coding element Yes Selection of BaseUnit for connection variants 1 -wire connection BU type U0 2-wire connection BU type U0 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs A Current-sourcing Yes Digital outputs, parameterizable Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	permissible range, upper limit (AC)	264 V
Rated value (AC) Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs Outputs Hardware configuration Automatic encoding Mechanical coding element Yes Selection of BaseUnit for connection variants 1 -wire connection BU type U0 2-wire connection BU type U0 3-wire connection BU type U0 4 - Potential isolation module Digital outputs Number of digital outputs Automatic encoding Yes Number of digital outputs Ves Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Input current	
Rated value (AC) Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module • Inputs • Outputs Hardware configuration Automatic encoding • Mechanical coding element Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection BU type U0 • 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs A Current-sinking No Current-sourcing Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Current consumption (rated value)	8 mA; without load
Power loss Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module Inputs Outputs Hardware configuration Automatic encoding Mechanical coding element Selection of BaseUnit for connection variants 1-wire connection BU type U0 2-wire connection BU type U0 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs A Current-sinking No Current-sourcing Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel		
Power loss, typ. 9 W; Active power, load voltage 230 V, all outputs loaded with 2 A, 50 Hz Address area Address space per module • Inputs • Outputs Hardware configuration Automatic encoding • Mechanical coding element Yes Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection BU type U0 • 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs A Current-sinking No Current-sourcing Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Rated value (AC)	230 V; 24V AC to 230V AC
Address area Address space per module Inputs Outputs Automatic encoding Mechanical coding element Inwire connection Inwire		
Address space per module Inputs Outputs Hardware configuration Automatic encoding Mechanical coding element Selection of BaseUnit for connection variants Inwire connection Butype U0 Selection element Butype U0 Butype U0 Butype U0 Butype U0 Foreinal isolation module Digital outputs Number of digital outputs Current-sinking No Current-sourcing Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Power loss, typ.	
Outputs Butype U0 Selection of BaseUnit for connection variants 1-wire connection 2-wire connection 3-wire connection Butype U0 1-wire connection Butype U0 3-wire connection Butype U0 + Potential isolation module Digital outputs Number of digital outputs Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Address space per module	
Hardware configuration Automatic encoding Yes • Mechanical coding element Yes Selection of BaseUnit for connection variants • 1-wire connection BU type U0 • 2-wire connection BU type U0 • 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs 4 Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel		
Automatic encoding • Mechanical coding element Yes Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Bu type U0 Bu type U0 + Potential isolation module Digital outputs Number of digital outputs 4 Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	·	
Mechanical coding element Selection of BaseUnit for connection variants 1-wire connection 2-wire connection BU type U0 BU type U0 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs Current-sinking No Current-sourcing Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	·	
Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Bu type U0 Bu type U0 + Potential isolation module Digital outputs Number of digital outputs Current-sinking No Current-sourcing Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs	
 1-wire connection 2-wire connection 3-wire connection BU type U0 BU type U0 + Potential isolation module Digital outputs Number of digital outputs 4 Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration	8 byte
● 2-wire connection ■ 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection Open-circuit detection BU type U0 BU type U0 Fotential isolation module 4 Current-solution No No Ves Short-circuit protection No; external fusing necessary Yes; channel by channel	Outputs Hardware configuration Automatic encoding	8 byte Yes
● 3-wire connection BU type U0 + Potential isolation module Digital outputs Number of digital outputs 4 Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding Mechanical coding element	8 byte Yes
Digital outputs Number of digital outputs Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection Open-circuit detection Ves; channel by channel	Outputs Hardware configuration Automatic encoding Mechanical coding element Selection of BaseUnit for connection variants	Yes Yes
Number of digital outputs 4 Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Yes Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding Mechanical coding element Selection of BaseUnit for connection variants 1-wire connection	Yes Yes Yes BU type U0
Current-sinking No Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding Mechanical coding element Selection of BaseUnit for connection variants 1-wire connection 2-wire connection	Yes Yes Yes BU type U0 BU type U0
Current-sourcing Yes Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding	Yes Yes Yes BU type U0 BU type U0
Digital outputs, parameterizable Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding	Yes Yes Yes BU type U0 BU type U0 BU type U0 BU type U0 + Potential isolation module
Short-circuit protection No; external fusing necessary Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding • Mechanical coding element Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Digital outputs Number of digital outputs	Yes Yes BU type U0 BU type U0 BU type U0 BU type U0 + Potential isolation module
Open-circuit detection Yes; channel by channel	Outputs Hardware configuration Automatic encoding • Mechanical coding element Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Digital outputs Number of digital outputs Current-sinking	Yes Yes BU type U0 BU type U0 BU type U0 + Potential isolation module
	Outputs Hardware configuration Automatic encoding • Mechanical coding element Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Digital outputs Number of digital outputs Current-sinking Current-sourcing	Yes Yes BU type U0 BU type U0 BU type U0 + Potential isolation module 4 No Yes
• Response threshold, typ. 1 mA; 40 V AC or more	Outputs Hardware configuration Automatic encoding • Mechanical coding element Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Digital outputs Number of digital outputs Current-sinking Current-sourcing Digital outputs, parameterizable	Yes Yes BU type U0 BU type U0 BU type U0 + Potential isolation module 4 No Yes Yes Yes
	Outputs Hardware configuration Automatic encoding • Mechanical coding element Selection of BaseUnit for connection variants • 1-wire connection • 2-wire connection • 3-wire connection Digital outputs Number of digital outputs Current-sinking Current-sourcing Digital outputs, parameterizable Short-circuit protection	Yes Yes BU type U0 BU type U0 BU type U0 + Potential isolation module 4 No Yes Yes Yes No; external fusing necessary

Controlling a digital input Switching capacity of the outputs • with resistive load, max. • on lamp load, max. • on lamp load, max. • for signal "1" rated value • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, min. • for signal "0" residual current, max. • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for logic links • for redundant control of a load • for redundant control of a load • for redundant control of the outputs • for lamp load, max. • 100 W; Tungsten rating in accordance with UL; for thermistors with higher power ratings, see the notes in the manual 2 A • for signal "1" permissible range, min. • for signal "1" permissible range, min. • for signal "0" residual current, max. 4 A; note derating data in the manual 3 mA Output delay with resistive load • "0" to "1", max. • for logic links • for uprating • for redundant control of a load Yes Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. 1 OHz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 2 A; Max. 4 A, see additional description in manual 8 A 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 2 A; Max. 4 A, see additional d	Overload protection	No; A miniature fuse with 10 tripping current and tripping characteristic "quick response" must be provided in the module supply
with resistive load, max. with inductive load, max. on lamp load, max. on	Controlling a digital input	Yes
with inductive load, max. on lamp load, max. 100 W; Tungsten rating in accordance with UL; for thermistors with higher power ratings, see the notes in the manual Output voitage of or signal "1", min. 20.4 V Output current of or signal "1" rated value of or signal "1" permissible range, min. of or signal "1" permissible range, max. of or signal "0" residual current, max. of or or or "1", max. of or logic links of or or or "1", max. of or	Switching capacity of the outputs	
• on lamp load, max. 100 W; Tungsten rating in accordance with UL; for thermistors with higher power ratings, see the notes in the manual Output vortage • for signal "1", min. Output current • for signal "1" permissible range, min. • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • '1" to "0", max. • for logic links • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • Ita; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs • Current per module, max. • Current per module, max. • Current per module, max. • Current per module, max. - up to 40 °C, max. - up to 50 °C,	• with resistive load, max.	2 A; Max. 4 A, see additional description in manual
Output voltage • for signal "1", min. 20.4 V Output current • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max. • for signal "0" residual current, max. • "0" to "1", max. • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for logic links • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • to urrent per channel, max. • Current per module, max. • Current per module, max. • Current of the outputs (per module) Total current of the outputs (per module) For its of the outputs (per module) - up to 40 °C, max up to 50	with inductive load, max.	2 A
• for signal "1", min. Output current • for signal "1" rated value • for signal "1" rated value • for signal "1" permissible range, min. • for signal "0" residual current, max. • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for logic links • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • on lamp load, max. • Current per channel, max. • Current per module, max. • Current per module, max. • Current per module, max. • Current fer module, max. • Current fer module, max. • Current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 40 °C, max. — up to 40 °C, max. — up to 40 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 40 °C, max. — up to 50 °C, max. — up t	● on lamp load, max.	
Output current • for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max. • for signal "1" max. • for signal "1" max. • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for logic links • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • Current per channel, max. • Current per module, max. • Current per module, max. • Current per module, max. • Current fer module, max. • Current fer module, max. • Current of the outputs (acc. max. • Current per module) **Ac 150 (c) max. • Current per module, max. • Carrent per module, max. • Carrent per module, max. • Acc. • Carrent per module, max. • Carrent per module, max. • Acc. • Carrent per module	Output voltage	
• for signal "1" rated value • for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for uprating • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • on lamp load, max. • on lamp load, max. • Current per channel, max. • Current per module, max. Total current of the outputs (per module) horizontal installation — up to 40 "C, max. — up to 50 "C, max.	● for signal "1", min.	20.4 V
• for signal "1" permissible range, min. • for signal "1" permissible range, max. • for signal "0" residual current, max. 2 mA Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • 10 mA 4 A; note derating data in the manual 3 mA Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for logic links • for logic links • for uprating • for redundant control of a load Yes Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs • Current per channel, max. • Current per module, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs • Current per channel, max. • Current per module, max. 8 A Total current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. 4 A vertical installation — up to 30 °C, max. 4 A vertical installation — up to 30 °C, max. 4 A Vertical installation — up to 40 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A	Output current	
• for signal "1" permissible range, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • "1" to "0", max. • "1" to "0", max. • for logic links • for logic links • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC 15), max. • on lamp load, max. • on lamp load, max. • Current per channel, max. • Current per module, max. • Current per module, max. • up to 50 "C, max. — up to 40 "C, max. — up to 50 "C, max. — up to 5	● for signal "1" rated value	2 A
for signal "0" residual current, max. Output delay with resistive load *"0" to "1", max. *"1" to "0", max. *"1" to "0", max. Output delay with resistive load *"0" to "1", max. *"1" to "0", max. Output Service Servi	• for signal "1" permissible range, min.	10 mA
Output delay with resistive load • "0" to "1", max.	• for signal "1" permissible range, max.	4 A; note derating data in the manual
""" to "1", max. """ to "0", max. 20 ms; 1 AC cycle Parallel switching of two outputs for logic links No for uprating No for redundant control of a load Yes Switching frequency with resistive load, max. 10 Hz; Applies to DQ mode; limited by line frequency in PC mode with inductive load (acc. to IEC 60947-5-1, AC15), max. on lamp load, max. 11 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs Current per channel, max. Current per module, max. 12 A; Max. 4 A, see additional description in manual horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 40 °C, max. 4 A Vertical installation — up to 30 °C, max. — up to 40 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A Vertical installation — up to 50 °C, max. 4 A	• for signal "0" residual current, max.	3 mA
e "1" to "0", max. Parallel switching of two outputs • for logic links • for uprating • for redundant control of a load Yes Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • on lamp load, max. • Current per channel, max. • Current per module, max. * Current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 40 °C, max. — up to 50	Output delay with resistive load	
Parallel switching of two outputs • for logic links • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 10 Hz; Applies to DQ mode; limited by line frequency in PC mode 10 Hz; Applies to DQ mode; limited by line frequency in PC mode 11 Hz; Applies to DQ mode; limited by line frequency in PC mode 12 A; Max. 4 A, see additional description in manual 13 A 14 A; Applies to DQ mode; limited by line frequency in PC mode 15 A; Applies to DQ mode; limited by line frequency in PC mode 16 A; Applies to DQ mode; limited by line frequency in PC mode 17 A; Applies to DQ mode; limited by line frequency in PC mode 18 A 19 Current per module, max. 2 A; Max. 4 A, see additional description in manual 4 A 16 A 17 A; Applies to DQ mode; limited by line frequency in PC mode 18 A 19 Current per module; limited by line frequency in PC mode 2 A; Max. 4 A, see additional description in manual 4 A 4 A 4 A 4 A 4 A 4 A 4 A 4	• "0" to "1", max.	40 ms; 2 AC cycles
for logic links for uprating for redundant control of a load Yes Switching frequency with resistive load, max. with inductive load (acc. to IEC 60947-5-1, AC15), max. on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs Current per channel, max. Current per module, max. Total current of the outputs (per module) horizontal installation - up to 40 °C, max up to 60 °C, max up to 50 °C, max up to 40 °C, max up to 50 °C, max u	• "1" to "0", max.	20 ms; 1 AC cycle
• for uprating • for redundant control of a load Yes Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • Current per channel, max. • Current per module, max. • Current per module, max. 2 A; Max. 4 A, see additional description in manual • Current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — 4 A Cable length	Parallel switching of two outputs	
for redundant control of a load Yes Switching frequency with resistive load, max. 10 Hz; Applies to DQ mode; limited by line frequency in PC mode with inductive load (acc. to IEC 60947-5-1, AC15), max. on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs Current per channel, max. Current per module, max. 2 A; Max. 4 A, see additional description in manual 8 A Total current of the outputs (per module) horizontal installation - up to 40 °C, max. - up to 50 °C, max. 4 A vertical installation - up to 30 °C, max. - up to 40 °C, max. 4 A Cable length	• for logic links	No
Switching frequency • with resistive load, max. • with inductive load (acc. to IEC 60947-5-1, AC15), max. • on lamp load, max. • Current per channel, max. • Current per module, max. • Current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 60 °C, max. — up to 40 °C, max. • up to 40 °C, max. — up to 50 °C, max. — up to 40 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 50 °C, max. — up to 40 °C, max. — up to 50 °C, max. — 4 A Cable length	• for uprating	No
with resistive load, max. with inductive load (acc. to IEC 60947-5-1, AC15), max. on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 10 Hz; Applies to DQ mode; limited by line frequency in PC mode 10 Hz; Applies to DQ mode; limited by line frequency in PC mode 11 Hz; Applies to DQ mode; limited by line frequency in PC mode 12 A; Max. 4 A, see additional description in manual 8 A Total current per module, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 12 A; Max. 4 A, see additional description in manual 8 A Total current per module, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode 13 Ac 14 A, see additional description in manual 8 A Total current per module, max. 8 A - up to 40 °C, max. - up to 50 °C, max. 4 A Vertical installation - up to 30 °C, max. - up to 40 °C, max. - up to 40 °C, max. - up to 50 °C, max. 4 A Cable length	• for redundant control of a load	Yes
 with inductive load (acc. to IEC 60947-5-1, AC15), max. on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs Current per channel, max. Current per module, max. Current per module, max. A A Total current of the outputs (per module) horizontal installation up to 40 °C, max. up to 50 °C, max. up to 60 °C, max. up to 30 °C, max. up to 40 °C, max. A A vertical installation up to 40 °C, max. 4 A Vertical installation up to 50 °C, max. 4 A Cable length 	Switching frequency	
AC15), max. • on lamp load, max. 1 Hz; Applies to DQ mode; limited by line frequency in PC mode Total current of the outputs • Current per channel, max. • Current per module, max. 1 A A See additional description in manual 8 A Total current of the outputs (per module) horizontal installation - up to 40 °C, max. - up to 50 °C, max. 4 A vertical installation - up to 30 °C, max. - up to 40 °C, max. 4 A Vertical installation - up to 40 °C, max. - up to 50 °C, max. 4 A Cable length	• with resistive load, max.	10 Hz; Applies to DQ mode; limited by line frequency in PC mode
Total current of the outputs • Current per channel, max. • Current per module, max. 8 A Total current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 60 °C, max. 4 A vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. 4 A Vertical installation — up to 40 °C, max. — up to 50 °C, max. 4 A Cable length	·	10 Hz; Applies to DQ mode; limited by line frequency in PC mode
 Current per channel, max. Current per module, max. 8 A Total current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 60 °C, max. 4 A vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. 4 A Vertical installation — up to 40 °C, max. — up to 50 °C, max. 	● on lamp load, max.	1 Hz; Applies to DQ mode; limited by line frequency in PC mode
● Current per module, max. Total current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 60 °C, max. 4 A vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 40 °C, max. 4 A Cable length	Total current of the outputs	
Total current of the outputs (per module) horizontal installation — up to 40 °C, max. — up to 50 °C, max. — up to 60 °C, max. 4 A vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 40 °C, max. 4 A Cable length	Current per channel, max.	2 A; Max. 4 A, see additional description in manual
horizontal installation - up to 40 °C, max. - up to 50 °C, max. - up to 60 °C, max. 4 A vertical installation - up to 30 °C, max. - up to 40 °C, max. - up to 50 °C, max. 4 A Cable length	Current per module, max.	8 A
— up to 40 °C, max. — up to 50 °C, max. — up to 60 °C, max. Vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. 4 A Cable length	Total current of the outputs (per module)	
— up to 50 °C, max. — up to 60 °C, max. 4 A vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. — up to 50 °C, max. 4 A Cable length	horizontal installation	
— up to 60 °C, max. Vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. 4 A Cable length	— up to 40 °C, max.	8 A
vertical installation — up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. 4 A Cable length	— up to 50 °C, max.	6 A
— up to 30 °C, max. — up to 40 °C, max. — up to 50 °C, max. 4 A Cable length	— up to 60 °C, max.	4 A
— up to 40 °C, max. — up to 50 °C, max. Cable length 6 A 4 A	vertical installation	
— up to 40 °C, max. — up to 50 °C, max. Cable length 6 A 4 A	— up to 30 °C, max.	8 A
— up to 50 °C, max. 4 A Cable length	•	6 A
Cable length		4 A
	<u> </u>	
		1 000 m

• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Substitute values connectable	Yes
Alarms	
Diagnostic alarm	Yes
Diagnostic messages	
Diagnostic information readable	Yes
 Monitoring the supply voltage 	Yes
Wire-break	Yes; channel by channel
Short-circuit	No
Group error	Yes
Diagnostics indication LED	
 Monitoring of the supply voltage (PWR-LED) 	Yes; green PWR LED
Channel status display	Yes; green LED
• for channel diagnostics	Yes; red Fn LED
• for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
between the channels	No
 between the channels and backplane bus 	Yes
 between the channels and the power supply of the electronics 	No
Isolation	
Isolation tested with	2 545 V DC/2 s (routine test)
Standards, approvals, certificates	
Suitable for safety functions	No
Ambient conditions	
Ambient temperature during operation	
horizontal installation, min.	-30 °C
horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C
vertical installation, max.	50 °C
Altitude during operation relating to sea level	
Installation altitude above sea level, max.	2 000 m; On request: Installation altitudes greater than 2 000 m
Dimensions	
Width	20 mm
Height	73 mm
Depth	58 mm

Weights	
Weight, approx.	50 g
last modified:	05/09/2020