DATASHEET - ES4P-221-DMXD1

Safety relay, 24 V DC, 14DI, 4DO-Trans, 1DO relay, display, easyNet

Part no.	**ES4P-221-DMXD1**
Catalog No.	**111017**
EL-Nummer (Norway)	**0004521512**

Powering Business Worldwide™

Delivery program

Product range			Control relays for safety applications
Basic function			easy800 with safety function blocks
Features			
Safety functions			Stopping in the event of an emergency Protective door OSSD input ESPE with muting function Two-hand control Highest speed monitoring Zero speed monitoring Safety timing relay Mode selection Enabling switch Feedback circuit
Display & keypad			✓
Mounting width		mm	107.5
Technical safety parameters:			
Values according to EN ISO 13849-1			
Performance level	according to EN ISO 13849-1		PL e
Category	according to EN ISO 13849-1		Kat. 4
Safety integrity level claim limit	in accordance with 62061		SILCL 3
Probability of failure per hour	PFH_d	x 10^{-10}	23
Safety integrity level	In accordance with IEC 61508		SIL 3
Display			Display Keypad
Real time clock			#
Supply voltage	U_s		24 V DC
Networking			easyNet/easyLink
Safety/standard circuit diagram			✓/✓
Instructions			Expandable: standard inputs/outputs and standard bus systems
			individual laser inscription with ES4-COMBINATION possible →#2011790
Inputs (safety)			14
Outputs (safety)			
6 A relay			
			1 (redundant)
Transistor			4
Test signal			4

Technical data

General

Standards			EN ISO 13849-1 EN 50156-1, EN 50156-2 EN 50178 EN 50581_x EN 61000-6-2 EN 61000-6-3 IEC 61508 IEC 62061
Approvals			

Approvals			EAC
Dimensions (W x H x D)		mm	107.5 (6 TE) x 90 x 72
Weight		kg	0.35
Mounting			Top-hat rail IEC/EN 60715, 35 mm or screw fixing using fixing brackets ZB4-101-GF1 (accessories)

Times

Inputs			
Max. duration of external test pulde		ms	1
Semi-conductor output			
Off test pulse		ms	< 1
Off-delay		ms	< 1

Terminal capacities

Solid		mm^2	0.2/4 (AWG 22 - 12)
Flexible with ferrule		mm^2	0.2/2.5 (AWG 22 - 12)
Standard screwdriver		mm	0.8 x 3.5
Max. tightening torque		Nm	0.6

Climatic environmental conditions

Operating ambient temperature		°C	-25 to + 55 cold as per IEC 60068-2-1 heat as per IEC 60068-2-2 Damp heat – constant to IEC 60068-2-78 – cyclical to ICE 60068-2-30
Condensation			Take appropriate measures to prevent condensation
LCD display (clearly legible)		°C	0 - 55
Ambient temperature			
Storage	ϑ	°C	-40 - +55
relative humidity		%	5 - 95 in accordance with IEC 60068-2-30, IEC 60068-2-78 Non-condensing
Air pressure (operation)		hPa	795 - 1080

Ambient conditions, mechanical

Degree of protection			IP20 (IEC/EN 60529, EN50178, VBG 4)
Constant amplitude 0.15 mm		Hz	
constant amplitude		Hz	10 - 57 (0.15 mm)
constant acceleration		Hz	57 - 150 (2g)
Vibrations	3,5 mm / 1 g	Hz	In accordance with IEC 60068-2-6
Mechanical shock resistance		g	18 shocks Sinusoidal 15 g/11 ms according to IEC 60068-2-27
Drop to	Drop height	mm	50 (IEC/EN 60068-2-31)
Free fall, packaged		m	0,3 (IEC/EN 61131-2)

Electromagnetic compatibility (EMC)

Electromagnetic compatibility			As per ICE 62061, increased EMC requirements for safety-relevant functions
Overvoltage category/pollution degree			III/2
Electrostatic discharge (ESD)			
applied standard			according to IEC EN 61000-4-2
Air discharge		kV	15
Contact discharge		kV	8
Electromagnetic fields (RFI)		V/m	30 to IEC EN 61000-4-3
Radio interference suppression			EN 55011 Class B, EN 55022 Class B
Burst		kV	according to IEC/EN 61000-4-4 Supply cables: 4 Signal cables: 4
power pulses (Surge)			2 kV (supply cables, symmetrical) 4 kV (semi-conductor outputs, symmetrical) In accordance with IEC 62061
Immunity to line-conducted interference		V	20, in accordsnce with IEC/EN 61000-4-6

Insulation resistance

Clearance in air and creepage distances			EN 50178, UL 508, CSA C22.2, No. 142, EN 60664-1:2003
Insulation resistance			EN 50178