## DATASHEET - P1-32/I2

On-Off switch, 3 pole, 32 A, surface mounting



P1-32/I2 207320

Part no. Catalog No.

(Norway)

EL-Nummer 0001456114



### **Delivery program**

benvery program			
Product range			On-Off switch
Part group reference			P1
			with black thumb grip and front plate
Information about equipment supplied			Auxiliary contact or neutral conductor fitted by user.
Number of poles			3 pole
Auxiliary contacts			
		N/0	0
1			
7		N/C	0
Degree of Protection			IP65
			totally insulated
Design			surface mounting
Contact sequence			$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Switching angle		0	90
Front plate no.			<b>FS 908</b>
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	15
Rated uninterrupted current	lu	A	32
Note on rated uninterrupted current !u			Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.
· · · · · · · · · · · · · · · · · · ·			u production de la construcción de la const

# **Technical data**

General

Standards

IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL

			Switch-disconnector according to IEC/EN 60947-3
Climatic proofing			Damp heat, constant, to IEC 60068-2-78
			Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Enclosed		°C	-25 - +40
Overvoltage category/pollution degree			111/3
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Mechanical shock resistance		g	15
Mounting position			As required
Contacts			
Mechanical variables			
Number of poles			3 pole
Auxiliary contacts			
		N/0	0
		N/C	0
Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	lu	А	32
Note on rated uninterrupted current $\boldsymbol{!}_{u}$			Rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$ is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x I <sub>e</sub>	2
AB 40 % DF		x I <sub>e</sub>	1.6
AB 60 % DF		x I <sub>e</sub>	1.3
Short-circuit rating			
Fuse		A gG/gL	50
Rated short-time withstand current (1 s current)	I <sub>cw</sub>	A <sub>rms</sub>	640
Note on rated short-time withstand current lcw			Current for a time of 1 second
Rated conditional short-circuit current	l <sub>q</sub>	kA	80
Switching capacity			
$\cos\phi$ rated making capacity as per IEC 60947-3		А	320
Rated breaking capacity $\cos\phi$ to IEC 60947-3		А	
230 V		А	260
400/415 V		А	300
500 V		А	290
690 V		А	250
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at l <sub>e</sub>		W	1.8
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 0.3
Maximum operating frequency	Operations/h		1200
AC			
AC-3			
Rating, motor load switch	Р	kW	
220 V 230 V	Р	kW	7.5
400 V 415 V	Р	kW	13
500 V	Ρ	kW	18.5
690 V	Р	kW	15
Rated operational current motor load switch			
230 V	I <sub>e</sub>	А	26.4
400V 415 V	I <sub>e</sub>	А	26.4
500 V	I <sub>e</sub>	A	23.4
690 V	l <sub>e</sub>	А	14.7
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	Р	kW	
230 V	Р	kW	7.5

400 V 415 V	Р	kW	15
500 V	Р	kW	18.5
690 V	Р	kW	15
Rated operational current motor load switch			
230 V	Ι <sub>e</sub>	Α	32
400 V 415 V	le	Α	32
500 V	I <sub>e</sub>	A	30
690 V	I <sub>e</sub>	A	19.8
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	le	A	32
Voltage per contact pair in series	.6	V	60
DC-23A, motor load switch $L/R = 15 \text{ ms}$		•	
24 V			
Rated operational current	1	A	25
	l <sub>e</sub>		
Contacts		Quantity	
48 V		٨	0E
Rated operational current	le	A	25
Contacts		Quantity	2
60 V			
Rated operational current	l <sub>e</sub>	A	25
Contacts		Quantity	2
120 V			
Rated operational current	le	Α	12
Contacts		Quantity	3
Control circuit reliability at 24 V DC, 10 mA	Fault probability	H <sub>F</sub>	< 10 <sup>-5</sup> ,< 1 failure in 100,000 switching operations
Terminal capacities	probability		
Solid or stranded		mm <sup>2</sup>	1 x (1,5 - 6)
			2 x (1,5 - 6)
Flexible with ferrules to DIN 46228		mm <sup>2</sup>	1 x (1 - 4) 2 x (1 - 4)
Terminal screw			M4
Tightening torque for terminal screw		Nm	1.6
Technical safety parameters:			
Notes			B10 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rating data for approved types			
Contacts			
Rated operational voltage	U <sub>e</sub>	V AC	600
Rated uninterrupted current max.			
Main conducting paths			
General use		A	30
Auxiliary contacts			
General Use	Ι <sub>U</sub>	A	10
Pilot Duty			A 600 P 600
Switching capacity			
Switching capacity Maximum motor rating			
Maximum motor rating		НР	1
Maximum motor rating Single-phase		HP HP	
Maximum motor rating Single-phase 120 V AC			1
Maximum motor rating Single-phase 120 V AC 200 V AC		HP	1 2
Maximum motor rating Single-phase 120 V AC 200 V AC 240 V AC		HP	1 2
Maximum motor rating Single-phase 120 V AC 200 V AC 240 V AC Three-phase		HP HP	1 2 3
Maximum motor rating Single-phase 120 V AC 200 V AC 240 V AC Three-phase 200 V AC		HP HP HP	1 2 3 3 3
Maximum motor rating Single-phase 120 V AC 200 V AC 240 V AC Three-phase 200 V AC 240 V AC		HP HP HP HP	1 2 3 3 7.5

Short Circuit Current Rating	SCCR	
Basic Rating	kA	5
max. Fuse	А	110
High fault rating	kA	10
max. Fuse	А	50, Class J
Terminal capacity		
Solid or flexible conductor with ferrule	AWG	14 - 8
Terminal screw		M4
Tightening torque	lb-in	14.1

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	32
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	1.8
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
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			UV resistance only in connection with protective shield.
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			Does not apply, since the entire switchgear needs to be evaluated.
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. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 7.0**

Low-voltage industrial components (EG000017) / Switch disconnector (EC000216)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])			
Version as main switch	No		
Version as maintenance-/service switch	No		
Version as safety switch	No		
Version as emergency stop installation	No		

Number of switchs         Image: space of the space			
Nax. rated operation voltage U e AC         V         69           Rated operation voltage         V         600         600           Rated operation voltage         A         2         2           Rated operation voltage U e AC         A         2         2           Rated operation voltage U e AC         A         2         2           Rated operation power at AC-23, 400 V         A         3         3           Rated operation power at AC-34, 400 V         K         8         6           Rated operation power at AC-32, 400 V         K         8         6           Nated operation power at AC-32, 400 V         K         8         6           Svitching power at AC-32, 400 V         K         8         6           Number of power at AC-32, 400 V         K         8         6           Svitching power at 400 V         K         N         9         6           Number of power at AC-32, 400 V         K         N         9	Version as reversing switch		No
Rated operament current lu         60 - 90           Bated permanent current lu         A         2           Bated permanent current at AC-23, 400 V         A         2           Bated permanent current at AC-23, 400 V         A         3           Bated permanent current ta AC-23, 400 V         B         3           Bated permanent current ta AC-23, 400 V         B         3           Bated permanent current ta AC-21, 400 V         B         3           Bated permanent current ta AC-21, 400 V         B         3           Bated permanent current ta AC-21, 400 V         B         3           Bated permanent current ta AC-21, 400 V         B         3           Bated permanent current ta AC-21, 400 V         B         B           Bated permanent current ta AC-21, 400 V         B         B           Statel operation power at AC-23, 400 V         Image: State AC         B           Statel operation power at AC-23, 400 V         Image: State AC         B           Statel operation power at AC-23, 400 V         Image: State AC         B           Statel operation power at AC-23, 400 V         Image: State AC         B           Number of auxiliary contacts as normally closed contact         Image: State AC         B           Number of auxiliary contacts as normally c	Number of switches		1
Retard permanent current lu         A         3           Retad permanent current ta AC-23, 400 V         A         3           Rated permanent current ta AC-21, 400 V         A         3           Rated permanent current ta AC-23, 400 V         A         3           Rated permanent current ta AC-21, 400 V         A         3           Rated permanent current ta AC-21, 400 V         A         3           Rated permanent current ta AC-21, 400 V         A         84           Rated permanent current ta AC-21, 400 V         A         84           Rated permanent current ta AC-21, 400 V         A         84           Rated permanent current ta AC-21, 400 V         A         84           Rated permanent current ta AC-23, 400 V         A         84           Southing power at AC-23, 400 V         A         80           Conditioned rated short-circuit current ta         A         80           Number of auxiliary contacts as normally closed contact         A         9           Number of auxiliary contacts as normally closed contact         A         9           Number of auxiliary contacts as normally closed contact         A         9           Southof or fort mounting 4-Dio         A         9           Soutadu for fort mounting 4-Dio         A	Max. rated operation voltage Ue AC	V	690
Rated permanent current at AC-23, 400 V       A       2         Rated permanent current at AC-21, 400 V       KW       3         Rated operation power at AC-3, 400 V       KW       3         Rated short-time withstand current low       KW       5         Rated short-time withstand current low       KW       5         Switching power at 400 V       KW       5         Conditioned rated short-circuit current lq       KW       6         Number of policity contacts as normally closed contact       KW       6         Number of auxiliary contacts as normally closed contact       F       0         Number of auxiliary contacts as normally closed contact       F       0         Number of auxiliary contacts as normally closed contact       F       0         Number of auxiliary contacts as normally closed contact       F       0         Number of auxiliary contacts as normally closed contact       F       0         Number of auxiliary contacts as normally closed contact       F       0         Number of auxiliary contacts as normally closed contact       F       0         Notor drive optional       F       0       No         Suitable for fort mounting -thele       F       No       No         Suitable for fort firsthuton bard rinstallation <td>Rated operating voltage</td> <td>V</td> <td>690 - 690</td>	Rated operating voltage	V	690 - 690
Rated permanent current taX-21,400 V       Pated operation power at AC-3,400 V       N         Rated operation power at AC-23,400 V       K       064         Rated operation power at AC-23,400 V       KW       15         Switch ime withstand current low       KW       16         Switch ing power at AC-23,400 V       16       16         Number of power at AC-23,400 V <td>Rated permanent current lu</td> <td>А</td> <td>32</td>	Rated permanent current lu	А	32
Autor operation power at AC-3, 400 V         Image: Autor operation power at AC-33, 400 V         Image: Autor operation power at AC-23, 400 V         Image: Autor Auto	Rated permanent current at AC-23, 400 V	А	32
Retes short-time withstand current low         I         K4         044           Reted operation power at AC-23, 400 V         KW         15           Switching power at 400 V         KW         15           Conditioned rated short-circuit current lq         KM         0           Number of poles         I         3           Number of auxiliary contacts as normally cosed contact         I         0           Number of auxiliary contacts as normally cosed contact         I         0           Number of auxiliary contacts as normally cosed contact         I         0           Number of auxiliary contacts as normally cosed contact         I         I         0           Number of auxiliary contacts as normally cosed contact         I         I         I         I           Number of auxiliary contacts as change-over contact         I	Rated permanent current at AC-21, 400 V	А	32
Red operation power at AC-23, 400 V       IM       Index of the second s	Rated operation power at AC-3, 400 V	kW	13
Witching power at 400 VImage: Second Sec	Rated short-time withstand current lcw	kA	0.64
And rade short-circuit current lqIMIMNumber of polesIIINumber of auxiliary contacts as normally closed contactIIINumber of auxiliary contacts as normally open contactIIINumber of auxiliary contacts as change-over contactIIINumber of auxiliary contacts as change-over contactIIINotact drive optionalIIIINotact drive optionalIIIINotage release optionalIIIISuitable for ground mountingIIIISuitable for drive integratedIIIISuitable for drive integratedIIIIISuitable for drive integratedIIIIISuitable for drive integratedIIIIISuitable for drive integratedIIIIIISuitable for intermediate mountingIIIIIIIIIIII<	Rated operation power at AC-23, 400 V	kW	15
Number of publes       3         Number of auxiliary contacts as normally open contact       0         Number of auxiliary contacts as normally open contact       0         Number of auxiliary contacts as change-over contact       0         Motor drive optional       0         Motor drive integrated       0         Voltage release optional       0         Device construction       0         Suitable for ground mouting 4-hole       0         Suitable for first mouting entref       0         Suitable for instruction solution       0         Suitable for instruction dementing       0         Suitable for instruction solution       0         Suitable for instruction for mouting entref       0         Suitable for instruction for mouting centre       0         Suitable for instruction for mouting centref       0         Suitable for instruction for mouting centre       0         Suitable for instruction formation       0         Suitable for inst	Switching power at 400 V	kW	15
Number of auxiliary contacts as normally closed contact       0         Number of auxiliary contacts as normally open contact       0         Number of auxiliary contacts as normally open contact       0         Number of auxiliary contacts as normally open contact       0         Motor drive optional       0         Motor drive optional       0         Motor drive integrated       0         Voltage release optional       0         Device construction       0         Suitable for ground mounting       0         Suitable for front mounting entre       0         Suitable for dristribution board installation       0         Suitable for instruction       0         Suitable for instruction       0         Suitable for instruction ontring       0         Suitable for instruction ontring centre       0         Suitable for instruction ontring       0         Suitable for instruction entring       0         Suitable for instruction entring       0 </td <td>Conditioned rated short-circuit current Iq</td> <td>kA</td> <td>80</td>	Conditioned rated short-circuit current Iq	kA	80
Number of auxiliary contacts as normally open contact       0         Number of auxiliary contacts as change-over contact       0         Motor drive optional       0         Motor drive optional       0         Motor drive optional       0         Motor drive optional       0         Votage release optional       0         Device construction       0         Suitable for ground mounting 4-hole       0         Suitable for fort mounting 6-three       0         Suitable for fort mounting 4-hole       0         Suitable for fort mounting 6-three       0         Suitable for fort mounting 6-three       0         Suitable for fort mounting 6-three       0         Suitable for intermediate mounting       1	Number of poles		3
Number of auxiliary contacts as change-over contactImage: Contact of the contact of th	Number of auxiliary contacts as normally closed contact		0
Motor drive optionalNoMotor drive integratedNoVoltage release optionalNoDevice constructionComplete device in housingSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for front mounting centreNoSuitable for intermediate mountingNoSuitable for intermediate mountingSole SoleSuitable for intermediate mountingSole Sole SoleSuitable for intermediate mountingSole Sole Sole SoleSuitable for intermediate mountingSole Sole Sole Sole Sole Sole Sole Sole	Number of auxiliary contacts as normally open contact		0
Motor drive integrated         No           Voltage release optional         No           Device construction         Complete device in housing           Suitable for ground mounting         Yes           Suitable for front mounting 4-hole         No           Suitable for front mounting centre         No           Suitable for intermediate mounting         No           Suitable for intermediate mounting         No           Suitable for intermediate mounting         Mo           Suitable for intermediate mounting         Sector           State of control element         Sector           Specification contention of main circuit         Sector           Specification contention of main circuit         Sector           Specification (IP), front side         Sector	Number of auxiliary contacts as change-over contact		0
Voltage release optionalNoDevice constructionComplete device in housingSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationNoSuitable for distribution board installationNoSoltable for intermediate mountingNoColour control elementSoltableType of control elementSoltableType of electrical connection of main circuitSoltableDegree of protection (IP), front sideSoltableNoSoltableSuitable for intermediateSoltableSuitable for intermediateSoltableSuitable for intermediate mountingSoltableSuitable for intermediateSoltableSuitable for intermediateSoltableSuitable for intermediateSoltableSuitable for intermediateSoltableSuitable for interme	Motor drive optional		No
Device constructionComplete device in housingSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoSuitable for intermediate mountingNoColour control elementSolowType of control elementSolowType of electrical connection of main circuitSolowSuitable for intermediate mountingSolowFor electrical connection (IP), front sideSolowSuitable for intermediateSolowSuitable for intermediate mountingSolowSuitable for intermediate mountingSolowSuit	Motor drive integrated		No
Suitable for ground mounting       Fig       Fig         Suitable for front mounting 4-hole       No         Suitable for front mounting centre       No         Suitable for distribution board installation       Fig         Suitable for intermediate mounting       Fig         Colour control element       Fig         Type of control element       Fig         Type of electrical connection of main circuit       Fig         Pagee of protection (IP), front side       Fig	Voltage release optional		No
Suitable for front mounting 4-hole       No         Suitable for front mounting centre       No         Suitable for distribution board installation       No         Suitable for intermediate mounting       Mo         Colour control element       No         Type of control element       Suitable         Type of electrical connection of main circuit       Suitable         Perce of protection (IP), front side       Suitable	Device construction		Complete device in housing
Suitable for front mounting centreNoSuitable for distribution board installationNoSuitable for intermediate mountingNoColour control elementBlackType of control elementNoInterlockableNoType of electrical connection of main circuitSo Screw connectionDegree of protection (IP), front sideInterlockable	Suitable for ground mounting		Yes
Suitable for distribution board installation       No         Suitable for intermediate mounting       No         Colour control element       Black         Type of control element       Toggle         Interlockable       No         Type of electrical connection of main circuit       Serew connection         Degree of protection (IP), front side       Image: Serew connection of main circuit	Suitable for front mounting 4-hole		No
Suitable for intermediate mountingNoColour control elementBlackType of control elementTogleInterlockableNoType of electrical connection of main circuitServer connectionDegree of protection (IP), front sideServer connection	Suitable for front mounting centre		No
Colour control element     Black       Type of control element     Toggle       Interlockable     No       Type of electrical connection of main circuit     Screw connection       Degree of protection (IP), front side     Image: Screw connection	Suitable for distribution board installation		No
Type of control element     Toggle       Interlockable     No       Type of electrical connection of main circuit     Screw connection       Degree of protection (IP), front side     Mo	Suitable for intermediate mounting		No
Interlockable     No       Type of electrical connection of main circuit     Screw connection       Degree of protection (IP), front side     IP65	Colour control element		Black
Type of electrical connection of main circuit     Screw connection       Degree of protection (IP), front side     IP65	Type of control element		Toggle
Degree of protection (IP), front side	Interlockable		No
	Type of electrical connection of main circuit		Screw connection
Degree of protection (NEMA) Other	Degree of protection (IP), front side		IP65
	Degree of protection (NEMA)		Other

## **Approvals**

North America Certification

#### For UL/CSA certification order article number 255890

