



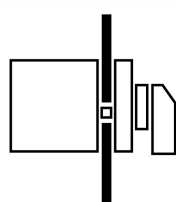
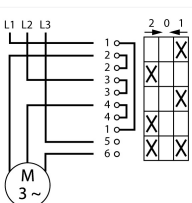
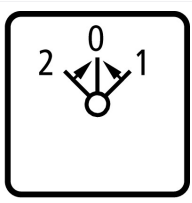
Reversing switches, T3, 32 A, flush mounting, 3 contact unit(s), Contacts: 5, 45 °, momentary, With 0 (Off) position, with spring-return from both directions to 0, 2>0<1, design no. 190

Part no. T3-3-190/E
 Catalog No. 018922



Similar to illustration

Delivery program

Product range			Control switches
Part group reference			T3
Basic function			Reversing switches with black thumb grip and front plate
Contacts			5
Degree of Protection			Front IP65
Design			flush mounting 
Contact sequence			
Switching angle		°	45
Switching performance			momentary With 0 (Off) position with spring-return from both directions to 0
Design number			190
Front plate no.			 FS 458
front plate			2>0<1
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	15
Rated uninterrupted current	I _u	A	32
Note on rated uninterrupted current I _u			Rated uninterrupted current I _u is specified for max. cross-section.
Number of contact units		contact unit(s)	3

Technical data

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			
Open		°C	-25 - +50
Enclosed		°C	-25 - +40
Overvoltage category/pollution degree			
			III/3
Rated impulse withstand voltage	U_{imp}	V AC	6000
Mechanical shock resistance		g	15
Mounting position			
			As required

Contacts

Electrical characteristics			
Rated operational voltage	U_e	V AC	690
Rated uninterrupted current	I_u	A	32
Note on rated uninterrupted current I_u			Rated uninterrupted current I_u is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		$\times I_e$	2
AB 40 % DF		$\times I_e$	1.6
AB 60 % DF		$\times I_e$	1.3
Short-circuit rating			
Fuse		A gG/gL	35
Rated short-time withstand current (1 s current)	I_{cw}	A_{rms}	650
Note on rated short-time withstand current I_{cw}			Current for a time of 1 second
Rated conditional short-circuit current	I_q	kA	1

Switching capacity

cos ϕ rated making capacity as per IEC 60947-3		A	320
Rated breaking capacity cos ϕ to IEC 60947-3		A	
230 V		A	260
400/415 V		A	260
500 V		A	240
690 V		A	170
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at I_e		W	1.1
Current heat loss per auxiliary circuit at I_e (AC-15/230 V)		CO	1.1
Lifespan, mechanical	Operations	$\times 10^6$	> 0.5
Maximum operating frequency	Operations/h		1200
AC			
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	P	kW	5.5
230 V Star-delta	P	kW	7.5
400 V 415 V	P	kW	11
400 V Star-delta	P	kW	15
500 V	P	kW	15
500 V Star-delta	P	kW	18.5
690 V	P	kW	11
690 V Star-delta	P	kW	22
Rated operational current motor load switch			
230 V	I_e	A	23.7
230 V star-delta	I_e	A	32
400V 415 V	I_e	A	23.7
400 V star-delta	I_e	A	32
500 V	I_e	A	23.7
500 V star-delta	I_e	A	32
690 V	I_e	A	14.7
690 V star-delta	I_e	A	25.5

AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V	P	kW	7.5
400 V 415 V	P	kW	15
500 V	P	kW	15
690 V	P	kW	15
Rated operational current motor load switch			
230 V	I _e	A	32
400 V 415 V	I _e	A	32
500 V	I _e	A	26.4
690 V	I _e	A	17
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	I _e	A	25
Voltage per contact pair in series		V	60
DC-21A			
Rated operational current	I _e	A	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I _e	A	25
Contacts		Quantity	1
48 V			
Rated operational current	I _e	A	25
Contacts		Quantity	2
60 V			
Rated operational current	I _e	A	25
Contacts		Quantity	3
120 V			
Rated operational current	I _e	A	12
Contacts		Quantity	3
240 V			
Rated operational current	I _e	A	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			
Rated operational current	I _e	A	20
Voltage per contact pair in series		V	24
Control circuit reliability at 24 V DC, 10 mA	Fault probability	H _F	< 10 ⁻⁵ , < 1 failure in 100,000 switching operations

Terminal capacities

Solid or stranded		mm ²	1 x (1 - 6) 2 x (1 - 6)
Flexible with ferrules to DIN 46228		mm ²	1 x (0.75 - 4) 2 x (0.75 - 4)
Terminal screw			M4
Tightening torque for terminal screw		Nm	1.6

Technical safety parameters:

Notes			B10 _d values as per EN ISO 13849-1, table C1
--------------	--	--	---

Rating data for approved types

Contacts			
Rated operational voltage	U _e	V AC	600
Rated uninterrupted current max.			
Main conducting paths			
General use		A	25
Auxiliary contacts			
General Use	I _U	A	10

Pilot Duty			A 600
Switching capacity			
Maximum motor rating			
Single-phase			
120 V AC	HP		1.5
200 V AC	HP		3
240 V AC	HP		3
Three-phase			
200 V AC	HP		3
240 V AC	HP		3
480 V AC	HP		7.5
600 V AC	HP		10
Short Circuit Current Rating		SCCR	
Basic Rating		kA	5
max. Fuse		A	40
High fault rating		kA	10
max. Fuse		A	40, Class J
Terminal capacity			
Solid or flexible conductor with ferrule		AWG	14 - 10
Terminal screw			M4
Tightening torque		lb-in	17.7

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	32
Heat dissipation per pole, current-dependent	P_{vid}	W	1.1
Equipment heat dissipation, current-dependent	P_{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	0
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	50
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
10.2.2.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.2.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.2.3 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			
10.4 Clearances and creepage distances			
10.5 Protection against electric shock			
10.6 Incorporation of switching devices and components			
10.7 Internal electrical circuits and connections			
10.8 Connections for external conductors			
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			
10.11 Short-circuit rating			
The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.			
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 8.0

Low-voltage industrial components (EG000017) / Off-load switch (EC001105)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Changeover switch (ecl@ss10.0.1-27-37-14-05 [AKF062013])

Model		Reversing switch
Number of poles		3
With zero (off) position		Yes
With retraction in 0-position		Yes
Rated permanent current I _u	A	32
Rated operation current I _e at AC-3, 400 V	A	23.7
Rated operation power at AC-3, 400 V	kW	12
Degree of protection (IP), front side		IP65
Degree of protection (NEMA), front side		12
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as change-over contact		0
Suitable for floor mounting		No
Suitable for front mounting		Yes
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Complete device in housing		No
Material housing		Plastic
Type of control element		Short thumb-grip
Type of electrical connection of main circuit		Screw connection

Approvals

Product Standards		UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
UL File No.		E36332
UL Category Control No.		NLRV
CSA File No.		12528
CSA Class No.		3211-05
North America Certification		UL listed, CSA certified
Suitable for		Branch circuits, suitable as motor disconnect
Degree of Protection		IEC: IP65; UL/CSA Type 1, 12

Dimensions

	<p>② ZFS... Label mount not included as standard</p>
--	--

Additional product information (links)

IL03801020Z (AWA1150-0586) Cam switches: flush mounting

IL03801020Z (AWA1150-0586) Cam switches: flush mounting https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801020Z2021_06.pdf

Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=48
Technical overview cam switch, switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.2
System overview cam switch T	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.4
System overview switch-disconnector P	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.6
Key to part numbers Cam switch	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8
Key to part numbers Switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8
Switches for ATEX	http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html
Ordering form for SOND switches and SOND front plates(DE_EN)	https://es-assets.eaton.com/DOCUMENTATION/PDF/MZ008006ZU_Orderform_Customized_Switch.pdf
Ordering form for SOND switches and SOND front plates(DE_EN)]	https://es-assets.eaton.com/DOCUMENTATION/PDF/MZ008005ZU_Orderform_Customized_Switch.pdf