## **DATASHEET - T0-2-15403/XZ**



Contacts: 3, 20 A, 45 °, rear mounting, Basic switch



Part no. T0-2-15403/XZ Catalog No. 011379

EL-Nummer (Norway) 0001456657

Similar to illustration

Delivery program			
Product range			Control switches
Part group reference			ТО
Contacts			3
Design			rear mounting Basic switch
Contact sequence			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Switching angle		o	45
Design number			15403
Front plate no.			FS 415
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	5.5
Rated uninterrupted current	I <sub>u</sub>	Α	20
Note on rated uninterrupted current !u			Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.
Number of contact units		contact unit(s)	2

## **Technical data**

Standards			IEC/EN 60947, VDE 0660, IEC/EN 60204 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 <sub>e</sub>	V AC	690

Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	I <sub>u</sub>	Α	20
Note on rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$			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

A 6 8 5 0 F   Short-circuit rating   Fise	
Fuse         A 60/04         20           Rated short-time withstand current [1 s current]         Icw         Arms         20           Note on rated short-time withstand current [2 with time withstand current [2] with time with stand current [2] with time with stand with with with time with stand with with with with with with with with	
Rated short-time withstand current (low         I <sub>cov</sub> A <sub>max</sub> A <sub>max</sub> 20         Current for a time of 1 second           Rated conditional short-time withstand current (low         I <sub>q</sub> A         Current for a time of 1 second           Switching capacity         Switching capacity         Switching capacity         Switching capacity           cos q rated making capacity as per IEC 60947-3         A         10           220 V         A         10           650 V         A         10           650 V         A         10           650 V         A         10           650 V         B         A         10           Current beat loss per contact st         VAC         40           Current beat loss per contact at I <sub>q</sub> Operations         YAC         40           Maximum operating frequency         Operations         YaC         5           AC-3         S         3         3           Reting, motor load switch         P         kW         5           220 V 230 V Star-delta	
Note on rated short-time withstand current (cw         Iq         NA         6           Rated conditional short-circuit current         Iq         NA         6           Switching capacity sper IEC 60947-3         A         130           Rated breaking capacity as per IEC 60947-3         A         100           400415 V         A         110           500 V         A         60           Current heat loss per contact at I <sub>0</sub> VX         A           Current heat loss per auxiliary circuit at I <sub>0</sub> (AC-15/230 V)         C         0           Maximum operating frequency         Operations         x 10 <sup>8</sup> > 0.4           AC-3         1         200         2           AC-3         2         2         2         2         2         2         2         2         2         2	
Rated conditional short-circuit current   Iq   KA   E	
Switching capacity           cos or rated making capacity as per IEC 60947-3         A         130           Rated breaking capacity cos o to IEC 60947-3         A         100           400415 V         A         110           500 V         B         A         80           680 V         B         B         B           Safe isolation to EN 61140         VAC         440         B           between the contacts         VAC         40         B           Current heat loss per contact at I <sub>0</sub> VAC         40         B           Current heat loss per auxiliary circuit at I <sub>0</sub> (AC-15/230 V)         C         0         0           Maximum operating frequency         Operations         x 1g8         > 0.4           Maximum operating frequency         Operations         x 1g8         > 0.4           AC-3         Bating, motor load switch         P         kW         5.5           230 V Star-delta         P         kW         5.5           400 V Star-delta         P         kW         5.5           500 V Star-delta         P         kW         5.5           690 V         P         kW         5.5           690 V Star-delta         P	
ccs or rated making capacity as per IEC 60947-3         A         30           Rate breaking capacity cos q to IEC 60947-3         A         100           400415 V         A         10           500 V         A         80           690 V         A         80           Safe isolation to EN 61140         V         V           between the contacts         V         V         40           Current heat loss per contact at I <sub>0</sub> V         V         0           Current heat loss per auxiliary circuit at I <sub>0</sub> (AC-15/230 V)         Operations         X 16°         >0           AC-3         S         V         V         0           Basing, motor load switch         P         WW         5         0           AC-3         S         V         V         5           AC-3 Solv Var-delta         P         WW         5         5           AC-4 Solv Var-delta         P         WW         5         5           Bool V Star-delta	
Rated breaking capacity cos φ to IEC 60947-3         A         100           220 V         400415 V         A         110           500 V         A         80           690 V         A         60           Safe isolation to EN 61140         V         C           between the contacts         VAC         440           Current heat loss per contact at I <sub>0</sub> W         0.6           Current heat loss per auxiliary circuit at I <sub>0</sub> (AC-15/230 V)         CO         0.6           Lifespan, mechanical         Operations, h         1200           AC-3         Rating, motor load switch         P         kW         3           2 230 V 230 V         P         kW         3.5           4 000 V 315 V         P         kW         5.5           4 000 V 51ar-delta         P         kW         5.5           500 V         P         kW         5.5           500 V Star-delta         P         kW         7.5           690 V Star-delta         P         kW         5.5           690 V Star-delta         P         kW         5.5           690 V Star-delta         P         kW         5.5           690 V Star-delta         P <td></td>	
230 V	
A00/415 \	
Solicy   S	
Egg	
Safe isolation to EN 61140         VAC         440           between the contacts         VAC         440           Current heat loss per contact at I <sub>e</sub> VAC         0.6           Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)         Operations/         x 10 <sup>6</sup> >0.4           Maximum operating frequency         Operations/         1200           AC-3         AC-3         AC-3         AC-3         AC-3           Rating, motor load switch         P         kW         3         AC-3           220 V 230 V         P         kW         5.5         AC-3           400 V 415 V         P         kW         5.5         AC-3           400 V 5tar-delta         P         kW         7.5         AC-3           500 V         P         kW         7.5         AC-3         AC-3<	
between the contacts         V AC         440           Current heat loss per contact at I <sub>θ</sub> W         0.6           Current heat loss per auxiliary circuit at I <sub>θ</sub> (AC-15/230 V)         CO         0.6           Lifespan, mechanical         Operations x 10 <sup>6</sup> > 0.4           Maximum operating frequency         Operations x 10 <sup>6</sup> > 0.4           AC-3         I 200           AC-3         V W         I 200           AC-3         V W         I W           220 V 230 V         P         kW         3           230 V Star-delta         P         kW         3.5           400 V 415 V         P         kW         5.5           400 V Star-delta         P         kW         7.5           500 V         P         kW         7.5           500 V Star-delta         P         kW         7.5           690 V Star-delta         P         kW         7.5           Rated operational current motor load switch         P         kW         5.5           Rated operational current motor load switch         P         kW         5.5           Rated operational current motor load switch         I <sub>e</sub> A         11.5           230 V	
Current heat loss per contact at I <sub>0</sub> W         0.6           Current heat loss per auxiliary circuit at I <sub>0</sub> (AC-15/230 V)         CO         0.6           Lifespan, mechanical         Operations/x         x 10 <sup>6</sup> > 0.4           Maximum operating frequency         Operations/x         1200           AC-3         Value         1200           Rating, motor load switch         P         kW         3           220 V 230 V         P         kW         5.5           400 V 415 V         P         kW         5.5           400 V 5tar-delta         P         kW         7.5           500 V         P         kW         5.5           500 V Star-delta         P         kW         7.5           690 V         P         kW         7.5           690 V         P         kW         7.5           Rated operational current motor load switch         P         kW         5.5           Rated operational current motor load switch         I <sub>0</sub> A         11.5           230 V star-delta         I <sub>0</sub> A         11.5           400 V 415 V         I <sub>0</sub> A         10.5           400 V 5tar-delta         I <sub>0</sub> <t< td=""><td></td></t<>	
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)         CO         0.6           Lifespan, mechanical         Operations         x 10.6         > 0.4           Maximum operating frequency         Operations/h         1200           AC-3         Taxing, motor load switch         P         kW           220 V 230 V         P         kW         3           230 V Star-delta         P         kW         5.5           400 V 415 V         P         kW         5.5           400 V Star-delta         P         kW         5.5           500 V Star-delta         P         kW         7.5           690 V Star-delta         P         kW         4           690 V Star-delta         P         kW         5.5           Rated operational current motor load switch         P         kW         5.5           Rated operational current motor load switch         I <sub>e</sub> A         11.5           230 V star-delta         I <sub>e</sub> A         20           400 V 415 V         I <sub>e</sub> A         20           400 V 5tar-delta         I <sub>e</sub> A         20	
Lifespan, mechanical       Operations / Maximum operating frequency       Value       > 0.4         AC - 3       Rating, motor load switch       P       kW       W         220 V 230 V       P       kW       3         230 V Star-delta       P       kW       5.5         400 V 415 V       P       kW       5.5         400 V Star-delta       P       kW       7.5         500 V       P       kW       7.5         500 V Star-delta       P       kW       7.5         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       P       kW       4         230 V star-delta       Ie       A       11.5         230 V star-delta       Ie       A       20         400 V 415 V       Ie       A       20	
Maximum operating frequency       Operations/h       1200         AC-3       Rating, motor load switch       P       kW         220 V 230 V       P       kW       3         230 V Star-delta       P       kW       5.5         400 V 415 V       P       kW       7.5         400 V Star-delta       P       kW       7.5         500 V       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Ie       A       20         400 V 415 V       Ie       A       11.5         400 V 5tar-delta       Ie       A       11.5         400 V 5tar-delta <t< td=""><td></td></t<>	
Maximum operating frequency       Operations/h       1200         AC-3       Rating, motor load switch       P       kW         220 V 230 V       P       kW       3         230 V Star-delta       P       kW       5.5         400 V 415 V       P       kW       7.5         400 V Star-delta       P       kW       7.5         500 V       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Ie       A       20         400 V 415 V       Ie       A       11.5         400 V 5tar-delta       Ie       A       11.5         400 V 5tar-delta <t< td=""><td></td></t<>	
AC       AC-3       Rating, motor load switch       P       kW         220 V 230 V       P       kW       3         230 V Star-delta       P       kW       5.5         400 V 415 V       P       kW       5.5         400 V Star-delta       P       kW       7.5         500 V       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V star-delta       Ie       A       20         400 V 415 V       Ie       A       11.5         400 V star-delta       Ie       A       20	
AC-3       Rating, motor load switch       P       kW         220 V 230 V       P       kW       3         230 V Star-delta       P       kW       5.5         400 V 415 V       P       kW       5.5         400 V Star-delta       P       kW       7.5         500 V       P       kW       5.5         500 V Star-delta       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Ie       A       20         400 V 415 V       Ie       A       11.5         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       20	
Rating, motor load switch       P       kW         220 V 230 V       P       kW       3         230 V Star-delta       P       kW       5.5         400 V 415 V       P       kW       5.5         400 V Star-delta       P       kW       7.5         500 V       P       kW       7.5         500 V Star-delta       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Ie       A       20         400 V 415 V       Ie       A       11.5         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       11.5	
220 V 230 V 230 V Star-delta P	
230 V Star-delta P kW 5.5  400 V 415 V P kW 5.5  400 V Star-delta P kW 7.5  500 V P kW 7.5  500 V Star-delta P kW 7.5  690 V P kW 4  690 V Star-delta P kW 5.5  Rated operational current motor load switch	
400 V 415 V P KW 5.5  400 V Star-delta P KW 7.5  500 V P KW 5.5  500 V Star-delta P KW 7.5  690 V P KW 4  690 V Star-delta P KW 5.5  Rated operational current motor load switch  230 V le A 11.5  230 V star-delta le A 20  400 V star-delta le A 20	
400 V Star-delta P kW 7.5  500 V P kW 5.5  500 V Star-delta P kW 7.5  690 V P kW 4  690 V Star-delta P kW 5.5  Rated operational current motor load switch  230 V I <sub>e</sub> A 11.5  230 V star-delta I <sub>e</sub> A 20  400 V Star-delta I <sub>e</sub> A 20	
500 V       P       kW       5.5         500 V Star-delta       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Star-delta       Ie       A       20         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       20	
500 V Star-delta       P       kW       7.5         690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Ie       A       20         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       20	
690 V       P       kW       4         690 V Star-delta       P       kW       5.5         Rated operational current motor load switch       Ie       A       11.5         230 V       Ie       A       20         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       20	
690 V Star-delta       P       kW       5.5         Rated operational current motor load switch         230 V       I <sub>e</sub> A       11.5         230 V star-delta       I <sub>e</sub> A       20         400 V 415 V       I <sub>e</sub> A       11.5         400 V star-delta       I <sub>e</sub> A       20	
Rated operational current motor load switch       Ie       A       11.5         230 V star-delta       Ie       A       20         400 V star-delta       Ie       A       11.5         400 V star-delta       Ie       A       20	
230 V       I <sub>e</sub> A       11.5         230 V star-delta       I <sub>e</sub> A       20         400V 415 V       I <sub>e</sub> A       11.5         400 V star-delta       I <sub>e</sub> A       20	
230 V star-delta	
400V 415 V	
400 V star-delta I <sub>e</sub> A 20	
· · · · · · · · · · · · · · · · · · ·	
500 V I <sub>e</sub> A 9	
500 V star-delta I <sub>e</sub> A 15.6	
690 V I <sub>e</sub> A 4.9	
690 V star-delta I <sub>e</sub> A 8.5	
AC-21A	
Rated operational current switch	
440 V I <sub>e</sub> A 20	
AC-23A	
Motor rating AC-23A, 50 - 60 Hz P kW	
230 V P kW 3	
400 V 415 V P kW 5.5	
500 V P kW 7.5	
690 V P kW 5.5	
Rated operational current motor load switch	
400 V 415 V I <sub>e</sub> A 13.3	
500 V I <sub>e</sub> A 13.3	
690 V I <sub>e</sub> A 7.6	
DC C	

DC-1, Load-break switches L/R = 1 ms			
Rated operational current	l <sub>e</sub>	Α	10
Voltage per contact pair in series		V	60
DC-21A	I <sub>e</sub>	Α	
Rated operational current	I <sub>e</sub>	Α	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I <sub>e</sub>	Α	10
Contacts		Quantity	1
48 V			
Rated operational current	l <sub>e</sub>	Α	10
Contacts		Quantity	2
60 V			
Rated operational current	I <sub>e</sub>	Α	10
Contacts		Quantity	3
120 V			
Rated operational current	I <sub>e</sub>	Α	5
Contacts		Quantity	3
240 V			
Rated operational current	I <sub>e</sub>	Α	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			
Rated operational current	I <sub>e</sub>	Α	10
Voltage per contact pair in series		V	32
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			
Solid or stranded		mm <sup>2</sup>	1 x (1 - 2,5) 2 x (1 - 2,5)
Flexible with ferrules to DIN 46228		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Terminal screw			M3.5
Tightening torque for terminal screw		Nm	1
Technical safety parameters:			
Notes			B10 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rating data for approved types			
Terminal capacity			
Terminal agrays			M2 F

M3.5 Terminal screw

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.6
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	P <sub>diss</sub>	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			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) / Control switch (EC002611)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Control switch (ecl@ss10.0.1-27-37-14-14 [ACN998011])

professor (1)		
Type of switch		On/Off switch
Number of poles		3
Max. rated operation voltage Ue AC	V	690
Rated permanent current lu	Α	20
Number of switch positions		0
With 0 (off) position		No
With retraction in 0-position		No
Device construction		Built-in device
Width in number of modular spacings		0
Suitable for ground mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for distribution board installation		No
Suitable for intermediate mounting		Yes
Complete device in housing		No
Type of control element		Other
Front shield size		48x48 mm
Degree of protection (IP), front side		IP00
Degree of protection (NEMA), front side		Other

## Assets (links)

**Declaration of CE Conformity** 

00003075

## **Additional product information (links)**

Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=107
Ordering form for SOND switches and SOND front plates(DE_EN)	$ftp://ftp.moeller.net/DOCUMENTATION/PDF/MZ008005ZU\_Orderform\_Customized\_Switch.pdf$
Ordering form for SOND switches and SOND front plates(DE_EN)	$ftp://ftp.moeller.net/DOCUMENTATION/PDF/MZ008006ZU\_Orderform\_Customized\_Switch.pdf$