



183755  
IZMX40N4-V25W-1

Overview

Specifications

Resources



Delivery program

Technical data

Design verification as per IEC/EN 61439

Technical data ETIM 7.0

Dimensions

## DELIVERY PROGRAM

Product range  
Air circuit-breakers/switch-disconnectors

Product range  
Open circuit-breakers

Current Range  
Up to 4000 A

Protective function  
Selective operation

Installation type  
Withdrawable

Cassette must be separately ordered.

Main terminals must be separately ordered.

Construction size

ZMX40

Release system  
Electronic release

Standard/Approval  
IEC

Number of poles  
4 pole

Degree of Protection  
IP31 with door seals, IP55 with protective cover

suitable for zone selectivity  
optionally fittable by user with comprehensive  
accessories

Rated current = rated uninterrupted current [ $I_n = I_u$ ]  
2500 A

up to 440 V 50/60 Hz [ $I_{cu}$ ]  
85 kA

up to 440 V 50/60 Hz [ $I_{cs}$ ]  
85 kA

Overload release, min. [ $I_t$ ]  
1000 A

Overload release, max. [ $I_t$ ]  
2500 A

Non-delayed  [ $I_t = I_n \times \dots$ ]  
2 - 15, OFF

Delayed  [ $I_{sd} = I_t \times \dots$ ]  
1,5 - 10

## TECHNICAL DATA

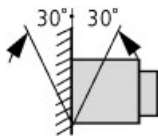
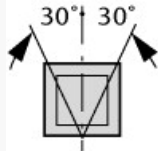
## General

Standards  
IEC/EN 60947

Ambient temperature  
Storage [9]  
-20 - +70 °C

Ambient temperature  
Ambient temperature  
-20 - +70 °C

Mounting position



Utilization category  
B

Degree of Protection  
IP31 with door seals, IP55 with protective cover

Direction of incoming supply  
as required

## Main conducting paths

Rated current = rated uninterrupted current [ $I_n = I_u$ ]  
2500 A

Rated uninterrupted current at 50 °C [ $I_u$ ]  
2500 A

Rated uninterrupted current at 60 °C [ $I_u$ ]  
2500 A

Rated uninterrupted current at 70 °C [ $I_u$ ]  
2500 A

Rated impulse withstand voltage [ $U_{imp}$ ]  
12000 V AC

Rated operational voltage [ $U_e$ ]  
690 V AC

Use in IT electrical power networks up to [ $U$ ]  
440 V

Overvoltage category/pollution degree  
III/3

Rated insulation voltage [ $U_i$ ]  
1000 V

### Switching capacity

Rated short-circuit making capacity [ $I_{cm}$ ]  
up to 440 V 50/60 Hz [ $I_{cm}$ ]  
187 kA

Rated short-circuit making capacity [ $I_{cm}$ ]  
up to 690 V 50/60 Hz [ $I_{cm}$ ]  
166 kA

Rated short-time withstand current 50/60 Hz  
 $t = 1$  s [ $I_{cw}$ ]  
85 kA

Rated short-time withstand current 50/60 Hz  
 $t = 3$  s [ $I_{cw}$ ]  
66 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  
IEC/EN 60947 operating sequence  $I_{cu}$  O-t-CO  
up to 240 V 50/60 Hz [ $I_{cu}$ ]  
85 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  
IEC/EN 60947 operating sequence  $I_{cu}$  O-t-CO  
up to 440 V 50/60 Hz [ $I_{cu}$ ]  
85 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  
IEC/EN 60947 operating sequence  $I_{cu}$  O-t-CO  
up to 690 V 50/60 Hz [ $I_{cu}$ ]  
75 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  
IEC/EN 60947 operating sequence  $I_{cs}$  O-t-CO-t-CO  
up to 240 V 50/60 Hz [ $I_{cs}$ ]  
85 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  
IEC/EN 60947 operating sequence  $I_{cs}$  O-t-CO-t-CO  
up to 440 V 50/60 Hz [ $I_{cs}$ ]  
85 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  
IEC/EN 60947 operating sequence  $I_{cs}$  O-t-CO-t-CO  
up to 690 V 50/60 Hz [ $I_{cs}$ ]  
75 kA

Operating times  
Closing delay via spring release  
35 ms

Operating times  
Total opening delay via shunt release  
35 ms

Operating times  
Total opening delay via undervoltage release  
40 ms

Operating times  
Total opening delay on non-delayed short-circuit  
release (up to complete arc quenching)  
52 ms

Lifespan  
Lifespan, mechanical [Switching cycles (ON/OFF)]  
10000

Lifespan  
Lifespan, mechanical with maintenance [Switching  
cycles (ON/OFF)]  
20000.

Lifespan  
Lifespan, electrical [Switching cycles (ON/OFF)]  
5000

Lifespan  
Lifespan, electrical with maintenance [Switching cycles (ON/OFF)]  
10000.

Maximum operating frequency [Operations/h]  
60

Heat dissipation at rated current  $I_n$   
Withdrawable units (switch with cassette)  
350 W

## Weight

Withdrawable  
4-pole  
86 kg

Cassette  
4 pole  
35 kg

## Terminal capacities

Copper bar  
Withdrawable units  
Black  
2 x 80 x 10 mm

These are values used in separate switchgear. The actual values will depend on the temperature around the circuit-breaker, which is influenced by the ambient temperature, the degree of protection (IP), the mounting height, the partitions, and any external ventilation. Depending on the specific switchgear design, this may result in derating, which can then be compensated for by increasing the cross-sectional area. Temperature rise tests in the specific switchgear can provide specific and detailed information.

Permissible continuous current for circuit-breakers operating in switchboards at various internal ambient temperatures. The switchboard's internal ambient temperature should be estimated using the calculation methods of IEC regulation.

# DESIGN VERIFICATION AS PER IEC/EN 61439

## Technical data for design verification

Rated operational current for specified heat dissipation [ $I_n$ ]  
2500 A

Equipment heat dissipation, current-dependent [ $P_{vid}$ ]  
350 W

Operating ambient temperature min.  
-20 °C

Operating ambient temperature max.  
+70 °C

## 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 Strength of materials and parts  
10.2.3.1 Verification of thermal stability of enclosures  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.2 Verification of resistance of insulating materials to normal heat  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
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 Strength of materials and parts  
10.2.4 Resistance to ultra-violet (UV) radiation  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.5 Lifting  
Does not apply, since the entire switchgear needs

to be evaluated.

10.2 Strength of materials and parts  
10.2.6 Mechanical impact  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
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 Insulation properties  
10.9.3 Impulse withstand voltage  
Is the panel builder's responsibility.

10.9 Insulation properties  
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) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

Rated permanent current  $I_n$   
2500 A

Rated voltage  
690 - 690 V

Rated short-circuit breaking capacity  $I_{cu}$  at 400 V,  
50 Hz  
85 kA

Overload release current setting  
1000 - 2500 A

Adjustment range short-term delayed short-circuit  
release  
1500 - 25000 A

Adjustment range undelayed short-circuit release  
5000 - 37500 A

Integrated earth fault protection  
No

Type of electrical connection of main circuit  
Rail connection

Device construction  
Built-in device slide-in technique (withdrawable)

Suitable for DIN rail (top hat rail) mounting  
No

DIN rail (top hat rail) mounting optional  
No

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  
2

With switched-off indicator  
Yes

With under voltage release  
No

Number of poles  
4

Position of connection for main current circuit  
Back side

Type of control element  
Push button

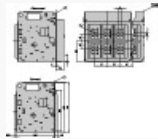
Complete device with protection unit  
Yes

Motor drive integrated  
No

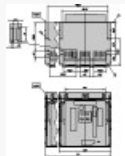
Motor drive optional  
Yes

Degree of protection (IP)  
IP31

## DIMENSIONS



Door



- Door
- Contact surface flange terminal



