125383
SPX150A1-5A4N1

Overview | Specifications | Resources

DELIVERY PROGRAM

Product range
Variable frequency drives

Part group reference (e.g. DIL)
SPX

Rated operational voltage [U_e]
600 V AC, 3-phase
690 V AC, 3-phase

Output voltage with V_e [U_2]
600 V AC, 3-phase
690 V AC, 3-phase

Mains voltage (50/60Hz) [U_{LN}]
525 (-15%) - 690 (±10%) V

Rated operational current [I_e]

At 150% overload [I_e]
144 A

At 110% overload [I_e]
170 A

Assigned motor rating

Note
For AC motors with internal and external ventilation with 50 Hz / 60 Hz

Note
Overload cycle for 60 s every 600 s

Note
at 690 V, 50 Hz

150 % Overload [P]
132 kW

110 % Overload [P]
160 kW

150 % Overload [I_M]
134 A

110 % Overload [I_M]
162 A

Note
at 690 V, 60 Hz

150 % Overload [P]
150 HP

110 % Overload [P]
200 HP

150 % Overload [I_M]
125 A

110 % Overload [I_M]
167 A

Degree of Protection
IP21

Fieldbus connection (optional)
PROFIBUS-DP
PROFINET
EtherCAT
EtherNet/IP
LonWorks
CANopen®
DeviceNet
Modbus-TCP
Modbus-RTU
BACnet MS/TP

Fitted with
Radio interference suppression filter
OLED display

Frame size
FR9

Connection to SmartWire-DT
no

TECHNICAL DATA

General

Standards
Specification for general requirements: IEC/EN 61800-2
EMC requirements: IEC/EN 61800-3
Safety requirements: IEC/EN 61800-5-1

Certifications
CE, UL, cUL, RCM

Approvals
DNV

Production quality
RoHS, ISO 9001

Climatic proofing [ρ_W]
< 95% relative humidity, no condensation, no corrosion, no dripping water %

Ambient temperature
Operating ambient temperature min.
-10 °C

Ambient temperature
Operating ambient temperature max.
+50 °C

Ambient temperature
operation (110 % overload) [ϑ]
-10 - +40 °C

Ambient temperature
Storage [ϑ]
-40 - +70 °C

Radio interference level
Radio interference class (EMC)
C2, C3, depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary.

Radio interference level
Environment (EMC)
1st and 2nd environments as per EN 61800-3

Mounting position
Vertical

Altitude
0 - 1000 m above sea level
above 1000 m with 1 % performance reduction per 100 m
max. 3000 mm

Degree of Protection
IP21

Protection against direct contact
BGV A3 (VBG4, finger- and back-of-hand proof)

Main circuit

Supply
Rated operational voltage [U_e]
600 V AC, 3-phase
690 V AC, 3-phase

Supply
Mains voltage (50/60Hz) [U_{LN}]
525 (-15%) - 690 (±10%) V

Supply
System configuration
AC supply systems with earthed center point

Supply
Supply frequency [f_{LN}]
50/60 Hz

Supply
Frequency range [f_{LN}]
45–66 (± 0%) Hz

Power section
Function
Variable frequency drive with internal DC link and IGBT inverter

Power section
Output voltage with V_e [U_2]
600 V AC, 3-phase
690 V AC, 3-phase

Power section
Output Frequency [f_2]
0 - 50/60 (max. 320) Hz

Power section
Switching frequency [f_{PWM}]
1.5
adjustable 1 - 6 kHz

Power section
Operation Mode
U/f control
sensorless vector control (SLV)
optional: Vector control with feedback (CLV)

Power section
Frequency resolution (setpoint value) [Δf]

0.01 Hz

Power section
Rated operational current
At 150% overload [I_e]
144 A

Power section
Rated operational current
At 110% overload [I_e]
170 A

Power section
Fitted with
Radio interference suppression filter
OLED display

Power section
Frame size
FR9

Motor feeder
Note
For AC motors with internal and external ventilation with 50 Hz / 60 Hz

Motor feeder
Note
Overload cycle for 60 s every 600 s

Motor feeder
Note
at 690 V, 50 Hz

Motor feeder
150 % Overload [P]
132 kW

Motor feeder
110 % Overload [P]
160 kW

Motor feeder
Note
at 690 V, 60 Hz

Motor feeder
150 % Overload [P]
150 HP

Motor feeder
110 % Overload [P]
200 HP

Control section

External control voltage [U_c]
24 V DC (max. 250 mA) V

Reference voltage [U_s]
10 V DC (max. 10 mA) V

Analog inputs
2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA

Analog outputs
1, parameterizable, 0/4 - 20 mA

Digital inputs
6, parameterizable, max. 30 V DC

Digital outputs
1, parameterizable, 48 V DC/50 mA

Relay outputs
2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)

Assigned switching and protective elements

Power Wiring
Main choke
150 % overload (CT/I_H, at 50 °C)
DX-LN3-200

Motor feeder
motor choke
150 % overload (CT/I_H, at 50 °C)
DX-LM3-150

Motor feeder
motor choke
110 % overload (VT/I_L, at 40 °C)
DX-LM3-180

Motor feeder
Sine filter
150 % overload (CT/I_H, at 50 °C)
SIN-0185-6-0-P

Motor feeder
Sine filter
110 % overload (VT/I_L, at 40 °C)
SIN-0185-6-0-P

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]
245 A

Heat dissipation per pole, current-dependent [P_{vid}]
0 W

Equipment heat dissipation, current-dependent [P_{vid}]
3300 W

Static heat dissipation, non-current-dependent [P_{vs}]
0 W

Heat dissipation capacity [P_{diss}]
0 W

Operating ambient temperature min.
-10 °C

Operating ambient temperature max.
+50 °C

Operation (with 150 % overload)

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.

APPROVALS

Product Standards
UL 508C; CSA-C22.2 No. 14; IEC/EN61800-3; IEC/EN61800-5; CE marking

UL File No.
E134360

UL Category Control No.
NMMS, NMMS2, NMMS7. NMMS8

CSA File No.
UL report applies to both US and Canada

CSA Class No.
3211-06

North America Certification
UL listed, certified by UL for use in Canada

Specially designed for North America
No

Suitable for
Branch circuits

Max. Voltage Rating
3~ 690 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)

Degree of Protection
IEC: IP21

DIMENSIONS