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Inverter
MICROMASTER 430





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Description



Application

The MICROMASTER 430 inverter is suitable for a variety of variable-speed drive applications. Its flexibility provides for a wide spectrum of applications. It is especially suitable for use with industrial pumps and fans. The inverter is especially characterized by its customer-oriented performance and ease-of-use. It has more inputs and outputs than the MICROMASTER 420, an optimized operator panel with manual/automatic switchover and adapted software functionality.

Design

The MICROMASTER 430 inverter has a modular design.

The operator panels and communication modules can be easily exchanged.

Main characteristics

- Easy, guided start-up
- Modular construction allows maximum configuration flexibility
- Six programmable isolated digital inputs
- Two scaleable analog inputs (0 V to 10 V, 0 mA to 20 mA) can also be used as a 7th/8th digital input
- Two programmable analog outputs (0 mA to 20 mA)
- Three programmable relay outputs (30 V DC/5 A resistive load; 250 V AC/2A inductive load)
- Low-noise motor operation thanks to high pulse frequencies, adjustable (observe derating if necessary)
- Complete protection for motor and inverter
- Control of up to three additional drives on the basis of PID control (motor staging)
- Operation of drive directly on mains (with external bypass circuit)
- Low-energy mode
- Detects dry run of pumps (belt failure detection).

Options (overview)

- Line commutating chokes
- Output chokes
- LC filter and sinusoidal filter
- Gland plates
- Basic Operator Panel 2 (BOP-2) for parameterizing the inverter
- Communication modules
  - PROFIBUS
  - DeviceNet
  - CANopen
- PC connection kits
- Mounting kits for installing the operator panels in the control cabinet doors
- PC start-up tools executable under Windows 98 and NT/2000/ME/ XP Professional.
- TIA integration with Drive ES

International standards

- The MICROMASTER 430 inverter complies with the requirements of the EU low-voltage guideline
- The MICROMASTER 430 inverter has the CE marking
- acc. to UL and cUL certified
- c-tick

Note:

See Appendix for standards.

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Mechanical features

- Modular design
- Operating temperature –10 °C to +40 °C (+14 °F to +104 °F)
- Compact housing as a result of high power density
- Easy cable connection, mains and motor connections are separated for optimum electromagnetic compatibility
- Detachable operator panels
- Screwless control terminal strip on detachable I/O board.

Performance features

- Latest IGBT technology
- Digital microprocessor control
- Flux Current Control (FCC) for improved dynamic response and optimized motor control
- Linear *V/f* characteristic
- Quadratic *V/f* characteristic
- Multipoint characteristic (programmable *V/f* characteristic)
- Flying restart
- Slip compensation
- Automatic restart following mains failure or fault
- Energy saving mode (stopping e.g. of a pump at low speeds)
- Motor staging (connection and disconnection of additional motors, use of inverter as control drive in a pump cascade)
- Manual/automatic mode
- Load torque monitoring (belt failure detection; detects dry run of pumps)
- High-grade internal PID controller for simple process control
- Programmable acceleration/deceleration times from 0 s to 650 s
- Ramp smoothing
- Fast Current Limit (FCL) for trip-free operation
- Fast, repeatable digital input response time
- Fine adjustment using two high-resolution 10-bit analog inputs
- Compound braking for controlled rapid braking
- Four skip frequencies
- Removable “Y” capacitor for use on IT systems (with non-grounded mains supplies, the “Y” capacitor must be removed and an output choke installed).

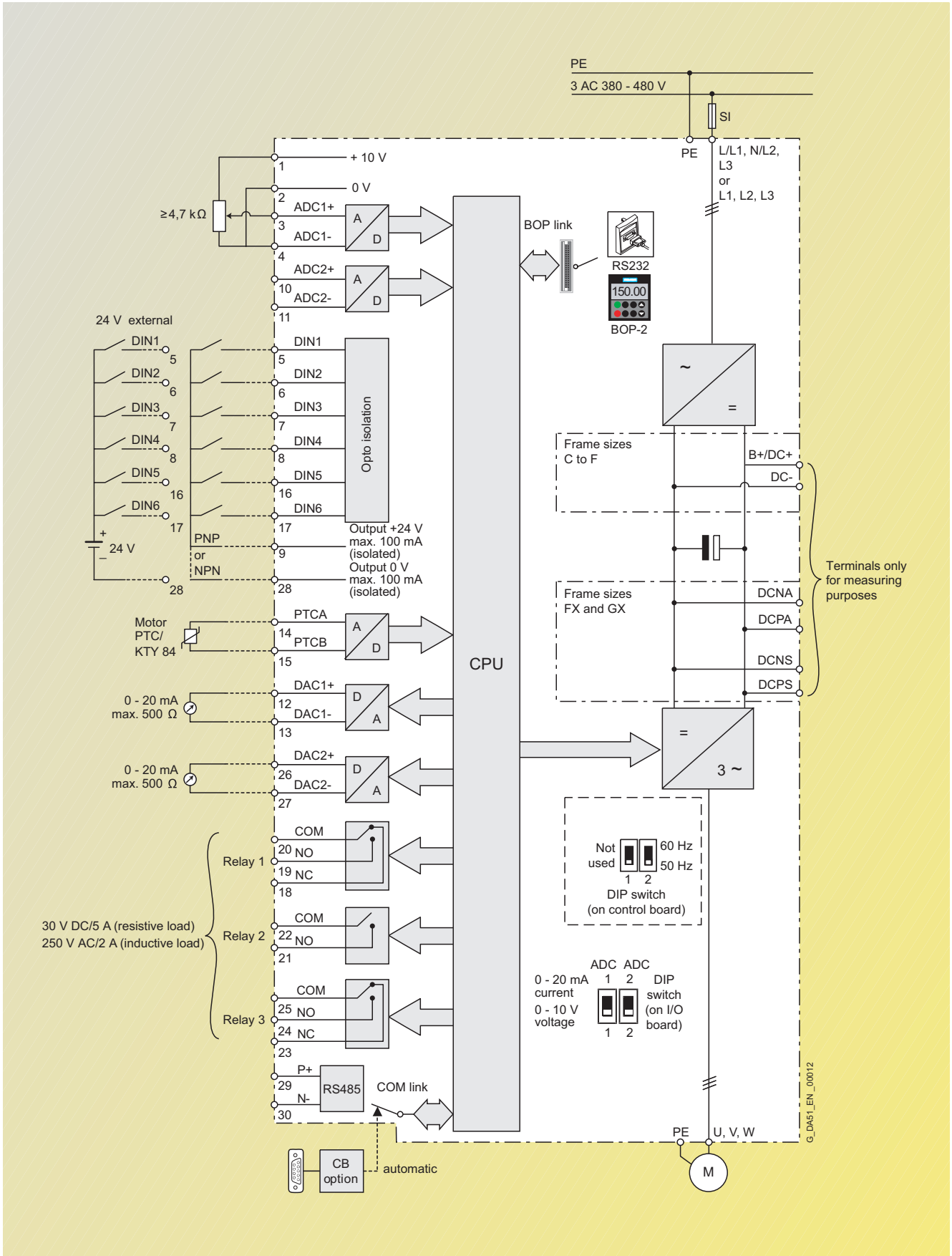
Protection features

- Overload capability
  7.5 kW to 90 kW:
  Overload current 1.4 x rated output current (i.e. +140 % overload capability) for 3 s, and 1.1 x rated output current (i.e. 110 % overload capability) for 60 s, cycle time 300 s
  110 kW to 250 kW:
  Overload current 1.5 x rated output current (i.e. 150 % overload capability) for 1 s, and 1.1 x rated output current (i.e. 110 % overload capability) for 59 s, cycle time 300 s
- Overvoltage/undervoltage protection
- Inverter overtemperature protection
- Special direct connection for PTC or KTY to protect the motor
- Earth fault protection
- Short-circuit protection
- I^2t motor thermal protection
- Locked motor protection
- Stall prevention
- Parameter interlock

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Circuit diagrams

General circuit diagram



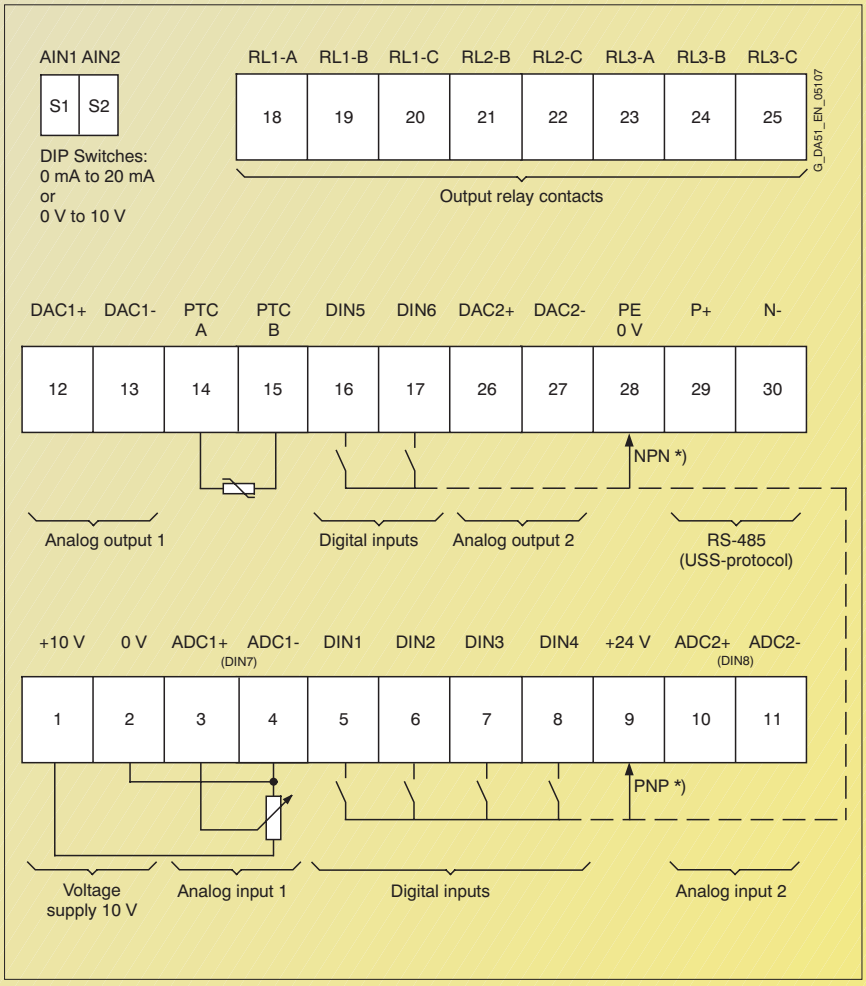
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Terminal connection diagram

Example, frame size C



View A



*) PNP or NPN possible

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Technical data

MICROMASTER 430 inverter

Mains voltage and Power ranges		3 AC 380 V to 480 V ± 10 % 7.5 kW to 250 kW (variable torque)
Power frequency		47 Hz to 63 Hz
Output frequency	7.5 kW to 90 kW 110 kW to 250 kW	0 Hz to 650 Hz 0 Hz to 267 Hz
Power factor		≥ 0.95
Inverter efficiency	7.5 kW to 90 kW 110 kW to 250 kW	96 % to 97 % 97 % to 98 % (Further information is available on the Internet at: http://support.automation.siemens.com/WW/view/en/22978972)
Overload capability	7.5 kW to 90 kW 110 kW to 250 kW	Overload current 1.4 x rated output current (i.e. +140 % overload capability) for 3 s, and 1.1 x rated output current (i.e. 110 % overload capability) for 60 s, cycle time 300 s Overload current 1.5 x rated output current (i.e. 150 % overload capability) for 1 s and 1.1 x rated output current (i.e. 110 % overload capability) for 60 s, cycle time 300 s
Inrush current		Less than rated input current
Control method		Linear *V/f* characteristic; quadratic *V/f* characteristic; multipoint characteristic (programmable *V/f* characteristic); flux current control (FCC), energy saving mode
Pulse frequency	7.5 kW to 90 kW 110 kW to 250 kW	4 kHz (standard) 2 kHz to 16 kHz (in 2 kHz steps) 2 kHz (standard) 2 kHz to 4 kHz (in 2 kHz steps)
Fixed frequencies		15, programmable
Skip frequency ranges		4, programmable
Setpoint resolution		0.01 Hz digital; 0.01 Hz serial; 10 bit analog
Digital inputs		6 fully programmable isolated digital inputs; switchable PNP/NPN
Analog inputs		2 programmable analog inputs • 0 V to 10 V, 0 mA to 20 mA and –10 V to +10 V (AIN1) • 0 V to 10 V and 0 mA to 20 mA (AIN2) • both can be used as 7th/8th digital input
Relay outputs		3, programmable, 30 V DC/5 A (resistive load); 250 V AC/2A (inductive load)
Analog outputs		2, programmable (0/4 mA to 20 mA)
Serial interfaces		RS-485, optional RS-232
Motor cable length	7.5 kW to 90 kW without output choke with output choke 110 kW to 250 kW without output choke with output choke	 max. 50 m (shielded); max. 100 m (unshielded) see variant dependent options max. 200 m (shielded); max. 300 m (unshielded) see variant dependent options
Electromagnetic compatibility	7.5 kW to 90 kW For inverters without filter 7.5 kW to 15 kW 18.5 kW to 90 kW 110 kW to 250 kW	Inverter with internal filter Class A available EMC filter, Class B to EN 55 011 available as an option EMC filter, Class B from Schaffner available as an option EMC filter, Class A available as an option
Braking		DC braking, compound braking
Degree of protection		IP20
Operating temperature range	7.5 kW to 90 kW 110 kW to 250 kW	–10 °C to +40 °C (+14 °F to +104 °F) 0 °C to +40 °C (+32 °F to +104 °F)
Storage temperature		–40 °C to +70 °C (–40 °F to +158 °F)
Relative humidity		95 % (non-condensing)
Installation altitude	7.5 kW to 90 kW 110 kW to 250 kW	Up to 1000 m above sea level without derating Up to 2000 m above sea level without derating
Standard SCCR (Short Circuit Current Rating) [1]		FSC: 10 kA FSD, FSE, FSF, FSFX, FSGX: 42 kA
Protection features for		undervoltage, overvoltage, overload, earth faults, short-circuits, stall prevention, locked motor protection, motor overtemperature, inverter overtemperature, parameter change protection
Conformity with standards	7.5 kW to 90 kW 110 kW to 250 kW	cULus, CE, c-tick cULus available soon, CE
CE marking		Conformity with low-voltage directive 73/23/EEC

Cooling-air volumetric flow required, dimensions and weights (without options)

Frame size (FS)	Cooling-air volumetric flow required (l/s)/(CFM)	H x W x D (mm)	Weight, approx. (kg)
C	54.9/116.3	245 x 185 x 195	5.7
D	2 x 54.9/2 x 116.3	520 x 275 x 245	17
E	2 x 54.9/2 x 116.3	650 x 275 x 245	22
F without filter	150/317.79	850 x 350 x 320	56
F with filter	150/317.79	1150 x 350 x 320	75
FX	225/478.13	1400 x 326 x 356	116
GX	440/935	1533 x 326 x 545	174

1) For footnote, see page 3/7. CFM: Cubic Feet per Minute

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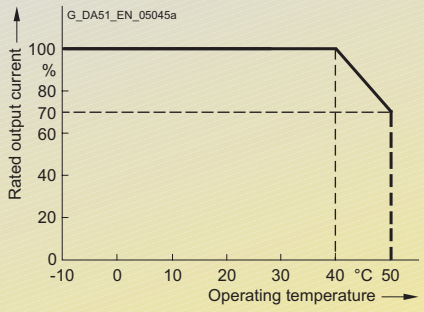
Derating data

Pulse frequency

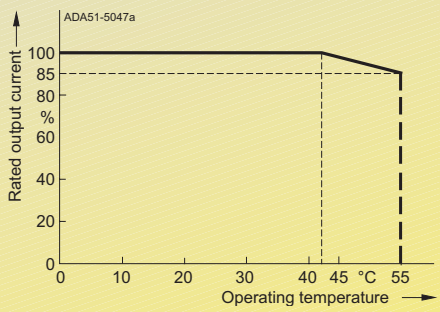
Output (for 3 AC 400 V)	**Rated output current in A** for a pulse frequency of							
kW	2 kHz	4 kHz	6 kHz	8 kHz	10 kHz	12 kHz	14 kHz	16 kHz
7.5	19.0	19.0	17.1	15.2	13.3	11.4	9.5	7.6
11.0	26.0	26.0	24.7	23.4	20.8	18.2	15.6	13.0
15.0	32.0	32.0	28.8	25.6	22.4	19.2	16.0	12.8
18.5	38.0	38.0	36.1	34.2	30.4	26.6	22.8	19.0
22	45.0	45.0	40.5	36.0	31.5	27.0	22.5	18.0
30	62.0	62.0	55.8	49.6	43.4	37.2	31.0	24.8
37	75.0	75.0	71.3	67.5	60.0	52.5	45.0	37.5
45	90.0	90.0	81.0	72.0	63.0	54.0	45.0	36.0
55	110.0	110.0	93.5	77.0	63.3	49.5	41.3	33.0
75	145.0	145.0	123.3	101.5	83.4	65.3	54.4	43.5
90	178.0	178.0	138.0	97.9	84.6	71.2	62.3	53.4
110	205.0	180.4	–	–	–	–	–	–
132	250.0	220.0	–	–	–	–	–	–
160	302.0	265.8	–	–	–	–	–	–
200	370.0	325.6	–	–	–	–	–	–
250	477.0	419.8	–	–	–	–	–	–

Operating temperature

Inverter 7.5 kW to 90 kW



Inverter 110 kW to 250 kW



1) Applies to industrial control cabinet installations to NEC article 409/UL 508A.

For further information, visit us on the Internet at:

http://support.automation.siemens.com/WW/view/en/23995621

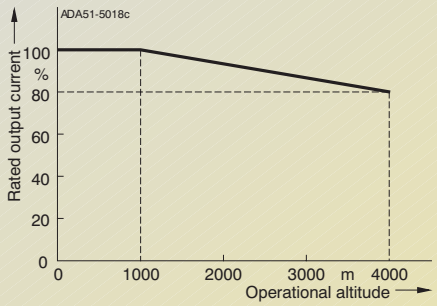
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Technical data

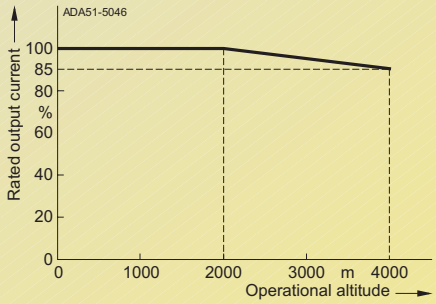
Derating data (continued)

Installation altitude above sea level

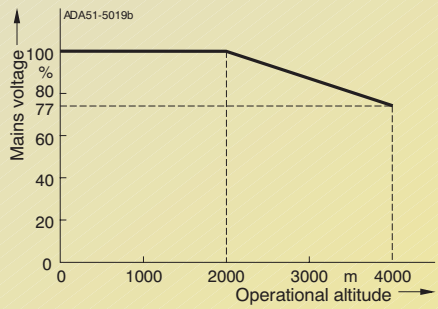
Permissible output current
in % of the rated output current
Inverter 7.5 kW to 90 kW



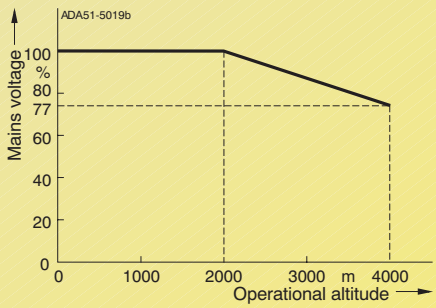
Inverter 110 kW to 250 kW



Permissible mains voltage
in % of the max. possible mains voltage
Inverter 7.5 kW to 90 kW



Inverter 110 kW to 250 kW



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MICROMASTER 430 inverter

Output		Rated input current	Rated output current	Frame size	Order No.	
					MICROMASTER 430 without filter [4]	**MICROMASTER 430 with internal filter Class A [3]**
kW	hp	A	A	(FS)		
Mains operating voltage 3 AC 380 V to 480 V						
7.5	10	17.3 [1]	19	C	**6SE6430-2UD27-5CA0**	**6SE6430-2AD27-5CA0**
11.0	15	23.1 [1]	26	C	**6SE6430-2UD31-1CA0**	**6SE6430-2AD31-1CA0**
15.0	20	33.8 [1]	32	C	**6SE6430-2UD31-5CA0**	**6SE6430-2AD31-5CA0**
18.5	25	37.0 [1]	38	D	**6SE6430-2UD31-8DA0**	**6SE6430-2AD31-8DA0**
22	30	43.0 [1]	45	D	**6SE6430-2UD32-2DA0**	**6SE6430-2AD32-2DA0**
30	40	59.0 [1]	62	D	**6SE6430-2UD33-0DA0**	**6SE6430-2AD33-0DA0**
37	50	72.0 [1]	75	E	**6SE6430-2UD33-7EA0**	**6SE6430-2AD33-7EA0**
45	60	87.0 [1]	90	E	**6SE6430-2UD34-5EA0**	**6SE6430-2AD34-5EA0**
55	75	104.0 [1]	110	F	**6SE6430-2UD35-5FA0**	**6SE6430-2AD35-5FA0**
75	100	139.0 [1]	145	F	**6SE6430-2UD37-5FA0**	**6SE6430-2AD37-5FA0**
90	120	169.0 [1]	178	F	**6SE6430-2UD38-8FA0**	**6SE6430-2AD38-8FA0**
110	150	200.0 [2]	205	FX	**6SE6430-2UD41-1FA0**	–
132	200	245.0 [2]	250	FX	**6SE6430-2UD41-3FA0**	–
160	250	297.0 [2]	302	GX	**6SE6430-2UD41-6GA0**	–
200	300	354.0 [2]	370	GX	**6SE6430-2UD42-0GA0**	–
250	350	442.0 [2]	477	GX	**6SE6430-2UD42-5GA0**	–



See Appendix for note on ordering.

All MICROMASTER 430 inverters are supplied with a Status Display Panel (SDP). A BOP-2 or other options have to be ordered separately (see Pages 3/14 to 3/16).

Motors for MICROMASTER 430

Catalog D 81.1 contains selection and ordering data for motors which are particularly suitable for operation with the MICROMASTER 430 inverters (see Appendix for overview).

This catalog is suitable for IEC motors. For motors according to US standards (NEMA) please refer to Catalog D 81.2 U.S./Canada (see Appendix for overview) and to: http://www.sea.siemens.com/motors

1) Supplementary conditions: Input current at rated operating point, applicable at short-circuit voltage of the supply U_{SC} = 2 % with reference to the inverter rated power and rated mains operating voltage of 400 V without a line commutating choke.

2) Supplementary conditions: Input current at rated operating point, applicable at short-circuit voltage of the supply $U_{SC} \geq 2.33$ % with reference to the inverter rated power and rated mains voltage of 400 V.

3) Use of MICROMASTER inverters with internal filter is not permissible on non-grounded mains supplies.

4) Acc. to EMC EN 61800-3 generally suited to heavy industrial applications. For details please refer to Appendix on page A/4.

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Options
Variant dependent options

Overview

EMC filter, Class A

All 7.5 kW to 90 kW inverters are supplied with an internal filter Class A.
For inverters 110 kW to 250 kW, EMC filters Class A are available. In this performance range, the EMC filters are only permitted to be used in combination with a line commutating choke.

The requirements are fulfilled using shielded cables with a max. length of 25 m.

EMC filter, Class B

Available for inverters 7.5 kW to 15 kW with an internal Class A EMC filter.

The requirements are fulfilled using shielded cables with a max. length of 25 m.

For inverters 18.5 kW to 90 kW without filters, EMC filters of Class B from Schaffner can be used.

The requirements are fulfilled using shielded cables with a max. length of 25 m to 50 m (depending on the type, details on request).

With this filter, the inverter complies with the emission standard EN 55 011, Class B for conducted interference emissions.

Leakage currents:

The leakage currents of the inverters with/without filter (internal/external) may exceed 30 mA. Typical values in practice are between 10 mA and 50 mA. The exact values depend on the design, environment and cable lengths. Interference-free operation with residual current operated devices with a trigger value of 30 mA cannot be guaranteed.

However, operation with residual current operated devices with a trigger value of 300 mA is possible. Please refer to the Instruction Manual for details.

LC filter and sinusoidal filter

The LC filter/sinusoidal filter limits the rate of rise of voltage and the capacitive charge/discharge currents which usually occur with inverter operation. This means that much longer shielded motor cables are possible when using LC filters/sinusoidal filters and the service life of the motor achieves values similar to those with direct mains operation. Use of an output choke isn't required with that.

Please note when using LC filters/sinusoidal filters:

- Only *V/f*, FCC control permissible
- Please observe the derating of 15 % when selecting the appropriate inverter
- Operation only permissible with 4 kHz pulse frequency
  Note: Please observe derating for frame sizes FX and GX.
- The output frequency is limited to 150 Hz
- Operation and commissioning only with connected motor as the LC filter/sinusoidal filter is not idling-proof!

The LC filters/sinusoidal filters can be used for all MICROMASTER 430 inverters of frame sizes C to GX.

- Frame sizes D to F:
  The LC filters, frame sizes D to F, are designed for mounting upright in the control cabinet. Due to leakage flux lines caused by physical sources, a minimum distance of 50 mm to adjacent modules and metal parts is recommended.
- Frame sizes FX and GX:
  The sinusoidal filters, frame sizes FX and GX, are designed for mounting upright in the control cabinet. Due to leakage flux lines caused by physical sources, a minimum distance of 100 mm to adjacent modules and metal parts is recommended.

3

Technical data

LC filter and sinusoidal filter

Mains voltage	3 AC 380 V to 480 V
Current (at 40 °C/50 °C)	
For frame size C (7.5 to 15 kW)	32.6 A/ 26 A
For frame size D (18.5 kW)	38.8 A/ 32 A
For frame size D (22 kW)	45.9 A/ 38 A
For frame size D (30 kW)	63.2 A/ 45 A
For frame size E (37 kW)	76.5 A/ 62 A
For frame size E (45 kW)	112.2 A/ 90 A
For frame size F (55 kW)	112.2 A/ 90 A
For frame size F (75 kW)	147.9 A/110 A
For frame size F (90 kW)	181.6 A/145 A
Current (at 40 °C/55 °C)	
For frame size FX (110 kW and 132 kW)	225 A/191 A
For frame size GX (160 kW)	276 A/235 A
For frame size GX (200 kW)	333 A/283 A
For frame size GX (250 kW)	408 A/347 A
Limiting of motor overvoltage	≤ 1078 V
d*V*/d*t* limiting	≤ 500 V/μs
Pulse frequency	4 kHz
Max. motor frequency	150 Hz

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Technical data (continued)

LC filter and sinusoidal filter

Max. permissible motor cable lengths		
For frame sizes C to F	shielded	200 m
	unshielded	300 m
For frame sizes FX and GX	shielded	300 m
	unshielded	450 m
Insulation strength		Overvoltage category III to VDE 0110
Electromagnetic compatibility		
For frame sizes C to F		Up to 200 m motor cable length with emissions to Class A according to EN 55 011 in conjunction with filtered inverters and unshielded cables
For frame sizes FX and GX		Up to 150 m motor cable length with emissions to Class A according to EN 55 011 in conjunction with filtered inverters and unshielded cables
Conformity		CE according to the low-voltage directive 73/23/EEC
Approvals		cUL E 219022
Strain resistance		EN 60 068-2-31
Humidity		95 % humidity, non-condensing
Degree of protection		
For frame size C		IP20 (to EN 60 529)
For frame sizes D to F		IP00/IP20 (to EN 60 529 with terminal covers)
For frame sizes FX and GX		IP00
Insulation class		H (180 °C)
Temperature range		
For frame sizes C to F	Operation	–10 °C to +40 °C (+14 °F to +104 °F) 100 % P_n
		to +50 °C (to +122 °F) 80 % P_n
	Storage	–25 °C to +70 °C (–13 °F to +158 °F)
For frame sizes FX and GX	Operation	–10 °C to +40 °C (+14 °F to +104 °F) 100 % P_n
		to +55 °C (to +131 °F) 85 % P_n
	Storage	–40 °C to +70 °C (–40 °F to +158 °F)
Installation altitude		
For frame size C		Up to 2000 m: 100 % P_n 2000 to 4000 m: 62.5 % P_n
For frame sizes D to F		Up to 1000 m: 100 % P_n 1000 to 4000 m: 12.5 % derating for each 1000 m
For frame sizes FX and GX		Up to 2000 m: 100 % P_n 2000 to 4000 m: 7.5 % derating for each 1000 m
Mounting position		
For frame size C		Footprint or suspended
For frame sizes D to F, FX and GX		upright
Free space		
For frame size C	Top	100 mm
	Bottom	100 mm
	Side	100 mm
For frame sizes D to F, FX and GX	Top	100 mm
	Side	100 mm
Connection system	Input, litz wire or terminal	1U1, 1V1, 1W1
	Output, terminals	1U2, 1V2, 1W2

Torque for conductor connections	Terminal cross-section	Torque
For frame size C	–	1.5 Nm to 1.8 Nm
For frame sizes D to F	16 mm^2	2.0 Nm to 4.0 Nm
	35 mm^2	2.5 Nm to 5.0 Nm
	50 mm^2	3.0 Nm to 6.0 Nm
	95 mm^2	6.0 Nm to 12.0 Nm
	150 mm^2	10.0 Nm to 20.0 Nm
For frame sizes FX and GX	–	14.0 Nm to 31.0 Nm

Weight, approx.	
For frame size C	8.5 kg to 29 kg
For frame size D	21 kg to 34 kg
For frame size E	49.5 kg to 67 kg
For frame size F	67 kg to 77.5 kg
For frame size FX	135 kg
For frame size GX	138 kg to 208 kg

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Options
Variant dependent options

Overview

Line commutating choke

Line commutating chokes are used to smooth voltage peaks or to bridge commutating dips.
In addition, line commutating chokes reduce the effects of harmonics on the inverter and the power supply. If the line impedance is < 1 %, a line commutating choke must be used in order to reduce the current peaks.

No limits are currently defined in the EN 61 000-3-2 standard for professionally used devices with a connected load > 1 kW.

This means that the inverters with an output power ≥ 0.75 kW comply with the EN 61 000-3-2 standard.

However, in accordance with the regulations of EN 61000-3-12 “Limits for harmonic currents > 16 A and ≤ 75 A per phase” an approval is necessary from the power supplier for drives that are intended to be connected to the public low-voltage network. Please refer to the Operating Instructions for the values of the harmonic currents.

Output choke

Output chokes can be supplied for reducing the capacitive compensation currents and d*V*/d*t* in the case of motor cables >50 m (shielded) or > 100 m (unshielded).

For max. permissible cable lengths, see Technical Data.

Gland plate

Gland plates are available for inverters of frame size C. All the other frame sizes have the shield connection for the control cable integrated in the inverter.

The shield for the power cable has to be connected externally (e.g. in the control cabinet). Exception: Inverters of frame sizes D and E and frame size F with integrated class A filter. In this case the shield connection is integrated in the inverter.

The gland plate facilitates the shield connection of power and control cables and thus ensures optimum EMC performance.

Technical data

Max. permissible cable lengths from the motor to the inverter when using output chokes

The following table shows the maximum permissible cable lengths from the motor to the inverter when using output chokes.

Note:

Operation up to 150 Hz output frequency only!

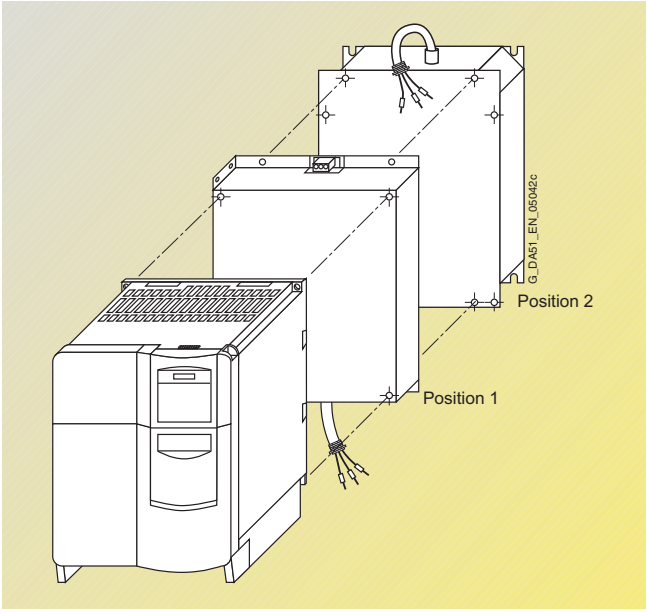
Frame size	Output choke	**Max. permissible motor cable lengths (shielded/unshielded)** for a mains voltage of	
(FS)	Type	380 V to 400 V ± 10 %	401 V to 480 V ± 10 %
C	6SE6400-3TC03-2CD3	200 m/300 m	100 m/150 m
D to F	6SE6400-3TC . . -. . D0	200 m/300 m	200 m/300 m
FX	6SL3000-2BE32-1AA0	300 m/450 m	300 m/450 m
FX	6SL3000-2BE32-6AA0	300 m/450 m	300 m/450 m
GX	6SL3000-2BE33-2AA0	300 m/450 m	300 m/450 m
GX	6SL3000-2BE33-8AA0	300 m/450 m	300 m/450 m
GX	6SL3000-2BE35-0AA0	300 m/450 m	300 m/450 m

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Design

General installation instructions

- A maximum of two footprint components plus inverter are permissible.
- If an LC filter is used, it must be mounted directly on the wall of the control cabinet due to weight reasons.
  If an LC filter of frame size C is used, therefore, only one footprint component is permissible. If a line choke and LC filter are used, the line choke must be located on the left of the inverter.
  Required distance between line choke and inverter: 75 mm.
- The EMC filter must be mounted directly below the frequency inverter if possible.
- If mounted on the side, the line-side components are to be mounted to the left of the frequency inverter whereas the output-side components are to be mounted to the right of the frequency inverter.



Example of installation with frequency inverter, EMC filter (position 1) and line choke (position 2)

Availability of the options as footprint components

	Frame size						
	C	D	E	F	G	FX	GX
Line commutating choke	✓	✓	✓				
EMC filter	✓						
LC filter	✓						
Output choke	✓						

Recommended combinations of inverters and options

Frequency inverter	**Footprint**		**Mounted on side**	
Frame size	Position 1	Position 2	To the left of the inverter (for line-side components)	To the right of the inverter (for output-side components)
C	EMC filter	Line commutating choke	–	Output choke
	EMC filter or Line commutating choke	Output choke	–	–
	LC filter	–	EMC filter and/or Line commutating choke	–
D and E	Line commutating choke	–	EMC filter	Output choke or LC filter
F, G, FX and GX	–	–	EMC filter and/or Line commutating choke	Output choke or LC filter

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Options
Variant dependent options

Selection and ordering data

The options listed here (filters, chokes, gland plates, fuses and circuit-breakers) must be selected to match the inverter. The inverter and the associated options have the same voltage ratings. Alternatively fuses and circuit-breakers can be provided. Both provide short circuit protection of the inverter supply line and the inverter. A semiconductor protection of the inverter with the suggested 3NA... fuses and the 3RV.../3VL... circuit-breakers is not envisaged.

Mains voltage	Output kW	Output hp	Inverter **without** filter	Order No. of the options **EMC filter, Class A**	**EMC filter, Class B**	**Line commutating choke**
3 AC 380 V to 480 V	7.5	10	6SE6430-2UD27-5CA0	–	–	**6SE6400-3CC02-2CD3**
	11.0	15	6SE6430-2UD31-1CA0	–	–	
	15.0	20	6SE6430-2UD31-5CA0	–	–	**6SE6400-3CC03-5CD3**
	18.5	25	6SE6430-2UD31-8DA0	–	EMC filter, Class B, available from Schaffner	**6SE6400-3CC04-4DD0**
	22	30	6SE6430-2UD32-2DA0	–		
	30	40	6SE6430-2UD33-0DA0	–		**6SE6400-3CC05-2DD0**
	37	50	6SE6430-2UD33-7EA0	–		**6SE6400-3CC08-3ED0**
	45	60	6SE6430-2UD34-5EA0	–		
	55	75	6SE6430-2UD35-5FA0	–		**6SE6400-3CC11-2FD0**
	75	100	6SE6430-2UD37-5FA0	–		
	90	120	6SE6430-2UD38-8FA0	–		**6SE6400-3CC11-7FD0**
	110	150	6SE6430-2UD41-1FA0	**6SL3000-0BE32-5AA0 *)**	–	**6SL3000-0CE32-3AA0**
	132	200	6SE6430-2UD41-3FA0	**6SL3000-0BE34-4AA0 *)**	–	**6SL3000-0CE32-8AA0**
	160	250	6SE6430-2UD41-6GA0		–	**6SL3000-0CE33-3AA0**
	200	300	6SE6430-2UD42-0GA0		–	**6SL3000-0CE35-1AA0**
	250	350	6SE6430-2UD42-5GA0	**6SL3000-0BE36-0AA0 *)**	–	

*) Must be used in combination with a line commutating choke.

Mains voltage	Output kW	Output hp	Inverter **without** filter	Order No. of the options **LC/sinusoidal filter**	**Output choke**	**Gland plate**
3 AC 380 V to 480 V	7.5	10	6SE6430-2UD27-5CA0	**6SE6400-3TD03-2CD0**	**6SE6400-3TC03-2CD3**	**6SE6400-0GP00-0CA0**
	11.0	15	6SE6430-2UD31-1CA0			
	15.0	20	6SE6430-2UD31-5CA0			
	18.5	25	6SE6430-2UD31-8DA0	**6SE6400-3TD03-7DD0**	**6SE6400-3TC05-4DD0**	Integrated as standard for shield connection of the control cable and the power cable.
	22	30	6SE6430-2UD32-2DA0	**6SE6400-3TD04-8DD0**	**6SE6400-3TC03-8DD0**	
	30	40	6SE6430-2UD33-0DA0	**6SE6400-3TD06-1DD0**	**6SE6400-3TC05-4DD0**	
	37	50	6SE6430-2UD33-7EA0	**6SE6400-3TD07-2ED0**	**6SE6400-3TC08-0ED0**	
	45	60	6SE6430-2UD34-5EA0	**6SE6400-3TD11-5FD0**	**6SE6400-3TC07-5ED0**	
	55	75	6SE6430-2UD35-5FA0		**6SE6400-3TC14-5FD0**	Integrated as standard for shield connection of the control cable. The shield of the power cable has to be connected externally (e.g. in the control cabinet).
	75	100	6SE6430-2UD37-5FA0	**6SE6400-3TD15-0FD0**	**6SE6400-3TC15-4FD0**	
	90	120	6SE6430-2UD38-8FA0	**6SE6400-3TD18-0FD0**	**6SE6400-3TC14-5FD0**	
	110	150	6SE6430-2UD41-1FA0	**6SL3000-2CE32-3AA0**	**6SL3000-2BE32-1AA0**	
	132	200	6SE6430-2UD41-3FA0		**6SL3000-2BE32-6AA0**	
	160	250	6SE6430-2UD41-6GA0	**6SL3000-2CE32-8AA0**	**6SL3000-2BE33-2AA0**	
	200	300	6SE6430-2UD42-0GA0	**6SL3000-2CE33-3AA0**	**6SL3000-2BE33-8AA0**	
	250	350	6SE6430-2UD42-5GA0	**6SL3000-2CE34-1AA0**	**6SL3000-2BE35-0AA0**	

Mains voltage	Output kW	Output hp	Inverter **without** filter	Order No. of the options **Fuses** (see Catalog LV 1) **3NA3**	**3NE1 (cULus)**	**Circuit-breaker** (see Catalog LV 1)
3 AC 380 V to 480 V	7.5	10	6SE6430-2UD27-5CA0	**3NA3807**	● (see page 3/15)	**3RV1031-4EA10**
	11.0	15	6SE6430-2UD31-1CA0	**3NA3812**		**3RV1031-4FA10**
	15.0	20	6SE6430-2UD31-5CA0	**3NA3814**		**3RV1031-4HA10**
	18.5	25	6SE6430-2UD31-8DA0	**3NA3820**	**3NE1817-0**	**3RV1042-4KA10**
	22	30	6SE6430-2UD32-2DA0	**3NA3822**	**3NE1818-0**	
	30	40	6SE6430-2UD33-0DA0	**3NA3824**	**3NE1820-0**	**3RV1042-4MA10**
	37	50	6SE6430-2UD33-7EA0	**3NA3830**	**3NE1021-0**	**3VL1712-.DD33-....**
	45	60	6SE6430-2UD34-5EA0	**3NA3832**	**3NE1022-0**	**3VL1716-.DD33-....**
	55	75	6SE6430-2UD35-5FA0	**3NA3836**	**3NE1224-0**	**3VL3720-.DC36-....**
	75	100	6SE6430-2UD37-5FA0	**3NA3140**	**3NE1225-0**	**3VL3725-.DC36-....**
	90	120	6SE6430-2UD38-8FA0	**3NA3144**	**3NE1227-0**	**3VL3725-.DC36-....**
	110	150	6SE6430-2UD41-1FA0	–		**3VL4731-.DC36-....**
	132	200	6SE6430-2UD41-3FA0	–	**3NE1230-0**	
	160	250	6SE6430-2UD41-6GA0	–	**3NE1332-0**	
	200	300	6SE6430-2UD42-0GA0	–	**3NE1333-0**	**3VL4740-.DC36-....**
	250	350	6SE6430-2UD42-5GA0	–	**3NE1435-0**	**3VL5750-.DC36-....**

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Selection and ordering data (continued)

All options are certified to UL, except fuses. The 3NE1 fuses are UL-listed (equivalent to cULus).

Additional information on the listed fuses and circuit-breakers can be found in Catalogs LV 1 and LV 1 T.

● Use in America requires UL-listed fuses such as the Class NON/NOS range from Bussmann.

Mains voltage	Output kW	Output hp	Inverter **with** internal filter Class A	Order No. of the options **Additional EMC filter, Class B**	**Line commutating choke**	**LC filter**
3 AC 380 V to 480 V	7.5	10	6SE6430-2AD27-5CA0	**6SE6400-2FS03-8CD0**	**6SE6400-3CC02-2CD3**	**6SE6400-3TD03-2CD0**
	11.0	15	6SE6430-2AD31-1CA0			
	15.0	20	6SE6430-2AD31-5CA0		**6SE6400-3CC03-5CD3**	
	18.5	25	6SE6430-2AD31-8DA0	An inverter **without** filter must be selected to satisfy the EMC requirements of Class B. In addition, an appropriate EMC filter of Class B is from Schaffner is required.	**6SE6400-3CC04-4DD0**	**6SE6400-3TD03-7DD0**
	22	30	6SE6430-2AD32-2DA0			**6SE6400-3TD04-8DD0**
	30	40	6SE6430-2AD33-0DA0		**6SE6400-3CC05-2DD0**	**6SE6400-3TD06-1DD0**
	37	50	6SE6430-2AD33-7EA0		**6SE6400-3CC08-3ED0**	**6SE6400-3TD07-2ED0**
	45	60	6SE6430-2AD34-5EA0			**6SE6400-3TD11-5FD0**
	55	75	6SE6430-2AD35-5FA0		**6SE6400-3CC11-2FD0**	
	75	100	6SE6430-2AD37-5FA0			**6SE6400-3TD15-0FD0**
	90	120	6SE6430-2AD38-8FA0		**6SE6400-3CC11-7FD0**	**6SE6400-3TD18-0FD0**

Mains voltage	Output kW	Output hp	Inverter **with** internal filter Class A	Order No. of the options **Output choke**	**Gland plate**
3 AC 380 V to 480 V	7.5	10	6SE6430-2AD27-5CA0	**6SE6400-3TC03-2CD3**	**6SE6400-0GP00-0CA0**
	11.0	15	6SE6430-2AD31-1CA0		
	15.0	20	6SE6430-2AD31-5CA0		
	18.5	25	6SE6430-2AD31-8DA0	**6SE6400-3TC05-4DD0**	Integrated as standard for shield connection of the control cable and the power cable.
	22	30	6SE6430-2AD32-2DA0	**6SE6400-3TC03-8DD0**	
	30	40	6SE6430-2AD33-0DA0	**6SE6400-3TC05-4DD0**	
	37	50	6SE6430-2AD33-7EA0	**6SE6400-3TC08-0ED0**	
	45	60	6SE6430-2AD34-5EA0	**6SE6400-3TC07-5ED0**	
	55	75	6SE6430-2AD35-5FA0	**6SE6400-3TC14-5FD0**	
	75	100	6SE6430-2AD37-5FA0	**6SE6400-3TC15-4FD0**	
	90	120	6SE6430-2AD38-8FA0	**6SE6400-3TC14-5FD0**	

Mains voltage	Output kW	Output hp	Inverter **with** internal filter Class A	Order No. of the options **Fuses** (see Catalog LV 1) **3NA3**	**3NE1 (cULus)**	**Circuit-breaker** (see Catalog LV 1)
3 AC 380 V to 480 V	7.5	10	6SE6430-2AD27-5CA0	**3NA3807**	●	**3RV1031-4EA10**
	11.0	15	6SE6430-2AD31-1CA0	**3NA3812**		**3RV1031-4FA10**
	15.0	20	6SE6430-2AD31-5CA0	**3NA3814**		**3RV1031-4HA10**
	18.5	25	6SE6430-2AD31-8DA0	**3NA3820**	**3NE1817-0**	**3RV1042-4KA10**
	22	30	6SE6430-2AD32-2DA0	**3NA3822**	**3NE1818-0**	
	30	40	6SE6430-2AD33-0DA0	**3NA3824**	**3NE1820-0**	**3RV1042-4MA10**
	37	50	6SE6430-2AD33-7EA0	**3NA3830**	**3NE1021-0**	**3VL1712-.DD33-....**
	45	60	6SE6430-2AD34-5EA0	**3NA3832**	**3NE1022-0**	**3VL1716-.DD33-....**
	55	75	6SE6430-2AD35-5FA0	**3NA3836**	**3NE1224-0**	**3VL3720-.DC36-....**
	75	100	6SE6430-2AD37-5FA0	**3NA3140**	**3NE1225-0**	**3VL3725-.DC36-....**
	90	120	6SE6430-2AD38-8FA0	**3NA3144**	**3NE1227-0**	**3VL4731-.DC36-....**

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Options
Variant independent options

Overview

Basic Operator Panel 2 (BOP-2)

With the BOP-2, individual parameter settings can be made. Values and units are shown on a 5-digit display.



Basic Operator Panel (BOP-2)

A BOP-2 can be used for several inverters. It can be directly mounted on the inverter or in a control cabinet door using a mounting kit.

PROFIBUS module

For a complete PROFIBUS connection with up to ≤12 Mbaud. Remote control of the inverter is possible with the PROFIBUS module. Remote control and operation at the inverter can be combined using an operator panel plugged onto the PROFIBUS module. The PROFIBUS module can be supplied by an external 24 V DC power supply and is thus also active when the inverter is disconnected from the power supply.

Connection by means of a 9-pin Sub-D connector (available as an option).

DeviceNet module

For networking the inverters to the DeviceNet fieldbus system widely used on the American market. A maximum transmission rate of 500 kbaud is possible. Remote control of the inverter is possible with the DeviceNet module.

Remote control and operation at the inverter can be combined using an operator panel plugged onto the DeviceNet module.

The connection to the DeviceNet bus system is made using a 5-pin connector with terminal strip.

CANopen module

Using the CANopen communications module, an inverter can be linked to the CANopen fieldbus system and remote control is then possible.

Remote control and operation at the inverter can be combined using an operator panel plugged onto the CANopen module.

The module is connected to the bus system through a 9-pin Sub-D connector.

Connection kit for PC to inverter

For controlling an inverter directly from a PC if the appropriate software has been installed (e.g. STARTER). Isolated RS-232 adapter module for reliable point-to-point connection to a PC. Includes a Sub-D connector and an RS-232 standard cable (3 m).

Operator panel door mounting kit for single inverter

For mounting an operator panel BOP-2 in a control cabinet door. Degree of protection IP56. Contains a cable adapter module with screwless terminals for use with user's own RS-232 cables [1]).

Start-up tools

- STARTER
  is a graphic start-up software for guided start-up for MICROMASTER 410/420/430/440 frequency inverters under Windows 2000/XP Professional. Parameter lists can be read out, altered, stored, entered and printed.
- DriveMonitor
  is a start-up software for list-oriented programming of frequency inverters. This program executes under Windows 98/NT/2000/ME/XP Professional.

Both programs are included on the Docu DVD which is provided with every inverter.

1) A shielded cable of type Belden 8132 (28 AWG) is recommended.
The maximum cable length is 5 m for RS-232.

Selection and ordering data

The options listed here are suitable for all MICROMASTER 430 inverters.

Options	Order No.	
Basic Operator Panel 2 (BOP-2)	**6SE6400-0BE00-0AA0**	
PROFIBUS module	**6SE6400-1PB00-0AA0**	
DeviceNet module	**6SE6400-1DN00-0AA0**	
CANopen module	**6SE6400-1CB00-0AA0**	
RS485/PROFIBUS bus connector	**6GK1500-0FC00**	
Connection kit for PC to inverter	**6SE6400-1PC00-0AA0**	
Operator panel door mounting kit for single inverter	**6SE6400-0PM00-0AA0**	
Start-up tool STARTER on DVD	**6SL3072-0AA00-0AG0**	Available on the Internet at: http://support.automation.siemens.com/WW/view/en/10804985/133100

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Technical data of the communication modules

		PROFIBUS module 6SE6400-1PB00-0AA0	DeviceNet module 6SE6400-1DN00-0AA0
			
Size (height x width x depth)		161 mm x 73 mm x 46 mm	
Degree of protection		IP20	
Degree of pollution		2 to IEC 60664-1 (DIN VDE 0110/T1), no condensation permitted during operation	
Strain resistance • Stationary • Transport	 Deflection Acceleration Deflection Acceleration	to IEC 60068-2-6 (if module is installed correctly) 0.15 mm in the frequency range of 10 Hz to 58 Hz 19.6 m/s^2 in the frequency range of 58 Hz to 500 Hz 3.5 mm in the frequency range of 5 Hz to 9 Hz 9.8 m/s^2 in the frequency range of 9 Hz to 500 Hz	
Climatic category (during operation)		3K3 to IEC 60721-3-3	
Cooling method		Natural air cooling	
Permissible ambient or cooling agent temperature • Operation • Storage and transport		 –10 °C to +50 °C (+14 °F to +122 °F) –25 °C to +70 °C (–13 °F to +158 °F)	
Relative humidity (permissible humidity rating) • Operation • Storage and transport		 ≤ 85 % (non-condensing) ≤ 95 %	
Electromagnetic compatibility	Emission Interference	to EN 55011 (1991) Class A to IEC 60801-3 and EN 61000-4-3	
Power supply		6.5 V ± 5 %, max. 300 mA, internal from inverter or 24 V ± 10 %, max. 350 mA, external	6.5 V ± 5 %, max. 300 mA internal from inverter or 24 V, max. 60 mA from DeviceNet-Bus
Output voltage		5 V ± 10 %, max. 100 mA, galvanically isolated supply • for terminating the serial interface bus or • for supplying the OLP (Optical Link Plug)	–
Data transmission rate		max. 12 Mbaud	125, 250 and 500 Kbaud

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Options
Variant independent options

Technical data of the communication modules (continued)

CANopen module
6SE6400-1CB00-0AA0



Size (height x width x depth)	161 mm x 73 mm x 46 mm
Degree of protection	IP20
Degree of pollution	2 to IEC 60664-1 (DIN VDE 0110/T1), no condensation permitted during operation
Strain resistance • Stationary Deflection Acceleration • Transport Deflection Acceleration	to IEC 60068-2-6 (if module is installed correctly) 0.15 mm in the frequency range of 10 Hz to 58 Hz 19.6 m/s^2 in the frequency range of 58 Hz to 500 Hz 3.5 mm in the frequency range of 5 Hz to 9 Hz 9.8 m/s^2 in the frequency range of 9 Hz to 500 Hz
Climatic category (during operation)	3K3 to IEC 60721-3-3
Cooling method	Natural air cooling
Permissible ambient or cooling agent temperature • Operation • Storage • Transport	 –10 °C to +50 °C (+14 °F to +122 °F) –40 °C to +70 °C (–40 °F to +158 °F) –25 °C to +70 °C (–13 °F to +158 °F)
Relative humidity (permissible humidity rating) • Operation • Storage and transport	 ≤ 85 % (non-condensing) ≤ 95 %
Power supply	The CAN bus is supplied from the inverter power supply
Data transmission rate	10, 20, 50, 125, 250, 500, 800 Kbaud and 1 Mbaud

3

Documentation

Selection and ordering data

Type of documentation	Language	Order No.
Docu pack, supplied with each inverter, containing DVD [1]) and Getting Started Guide [2]) (paper version)	Multilanguage	**6SE6400-5AD00-1AP1**
Operating instructions (paper version)	German, English, French, Italian, Spanish	
	Available as pdf file on the Internet at http://support.automation.siemens.com/WW/view/en/10804926/133300	
Parameter list (paper version)	German, English, French, Italian, Spanish	
	Available as pdf file on the Internet at http://support.automation.siemens.com/WW/view/en/10804926/133300	

1) The DVD contains operating instructions, parameter list, commissioning tools STARTER and DriveMonitor, multilanguage.

Available on the Internet:
DriveMonitor at
http://support.automation.siemens.com/WW/view/en/10804984/133100

STARTER at
http://support.automation.siemens.com/WW/view/en/10804985/133100

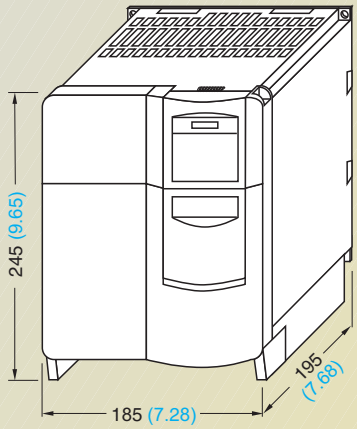
2) Available on the Internet at
http://support.automation.siemens.com/WW/view/en/10804926/133300

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MICROMASTER 430 inverter

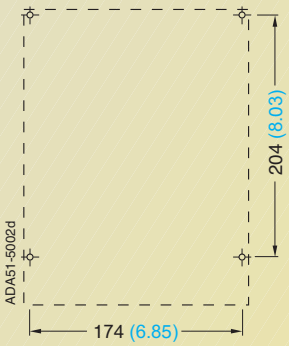
Frame size	3 AC 380 V to 480 V
C	7.5 kW to 15 kW
D	18.5 kW to 30 kW
E	37 kW to 45 kW

Note:
The inverters must not be mounted horizontally.
But the inverters can be mounted without lateral spacing.



Inverter frame size **C**

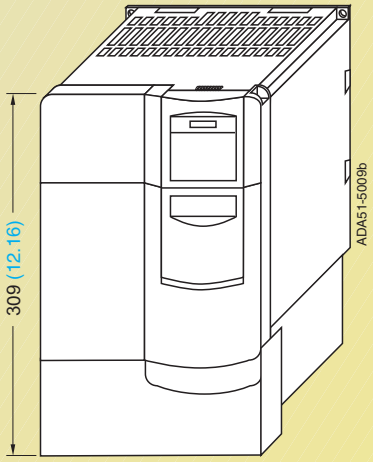
Drill pattern



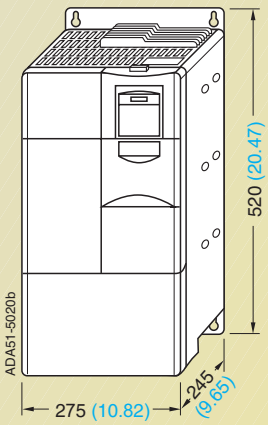
Fixing with
4 x M5 bolts
4 x M5 nuts
4 x M5 washers

Tightening torque with washers fitted: 3.0 Nm

Ventilation clearance required at top and bottom: 100 mm

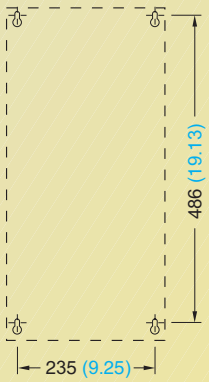


Inverter frame size **C** with **gland plate**



Inverter frame size **D**

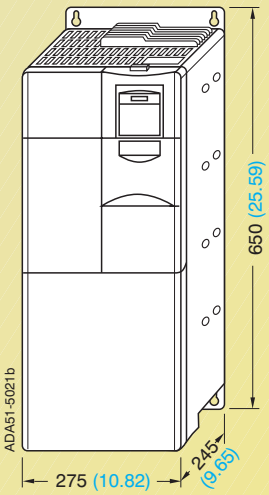
Drill pattern



Fixing with
4 x M8 bolts
4 x M8 nuts
4 x M8 washers

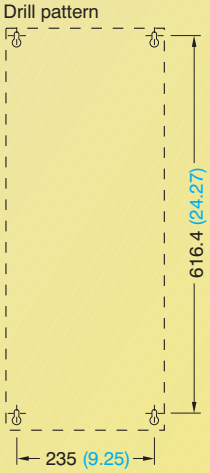
Tightening torque with washers fitted: 13 Nm

Ventilation clearance required at top and bottom: 300 mm



Inverter frame size **E**

Drill pattern



Fixing with
4 x M8 bolts
4 x M8 nuts
4 x M8 washers

Tightening torque with washers fitted: 13 Nm

Ventilation clearance required at top and bottom: 300 mm

With the communication module, the mounting depth increases for frame size C by 23 mm (0.91 inches).

All dimensions in mm (values in brackets are in inches)

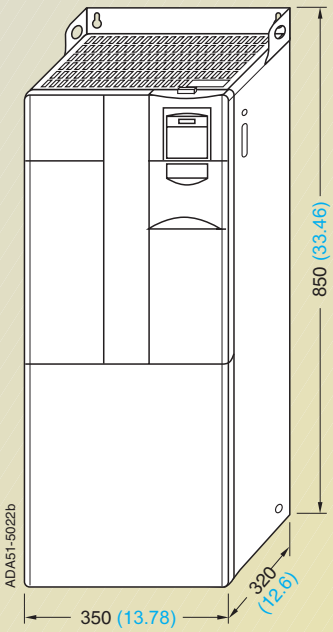
© Siemens AG 2007

Dimension drawings

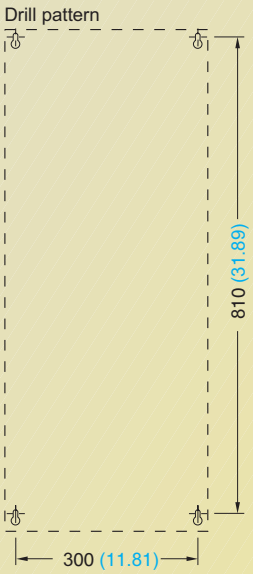
MICROMASTER 430 inverter

Frame size	3 AC 380 V to 480 V
F	55 kW to 90 kW

Note:
The inverters must not be mounted horizontally.
But the inverters can be mounted without lateral spacing.



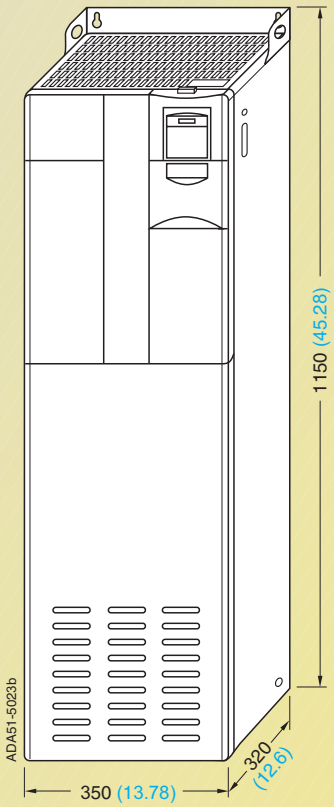
Inverter frame size **F** without filter



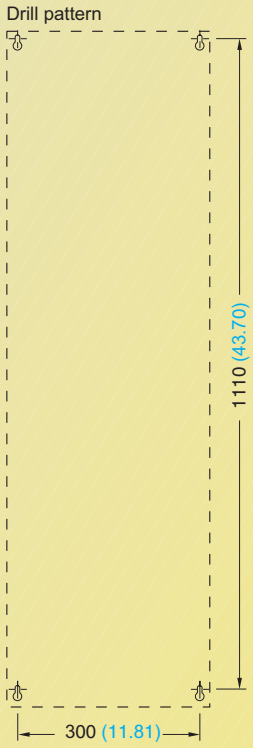
Fixing with
4 x M8 bolts
4 x M8 nuts
4 x M8 washers

Tightening torque with washers fitted: 13 Nm

Ventilation clearance required at top and bottom: 350 mm



Inverter frame size **F** with filter



Fixing with
4 x M8 bolts
4 x M8 nuts
4 x M8 washers

Tightening torque with washers fitted: 13 Nm

Ventilation clearance required at top and bottom: 350 mm

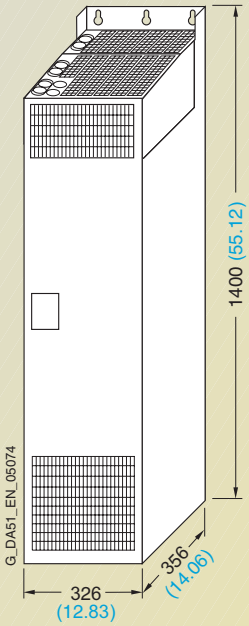
All dimensions in mm (values in brackets are in inches)

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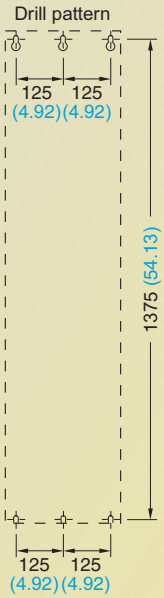
MICROMASTER 430 inverter

Frame size	3 AC 380 V to 480 V
FX	110 kW to 132 kW
GX	160 kW to 250 kW

Note:
The inverters must not be mounted horizontally.
But the inverters can be mounted without lateral spacing.



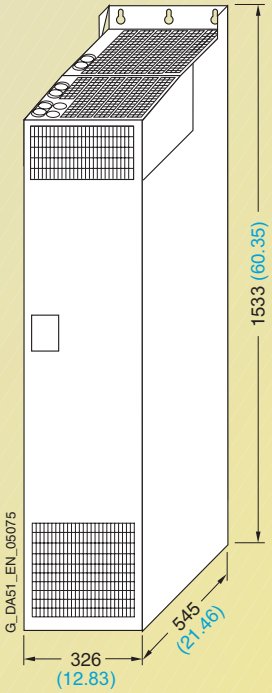
Inverter frame size **FX**



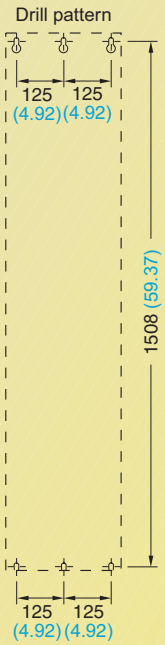
Fixing with
6 x M8 bolts
6 x M8 nuts
6 x M8 washers

Tightening torque
with washers
fitted: 13.0 Nm

Ventilation clearance
required:
at top: 250 mm
at bottom: 150 mm
in front: 40 mm



Inverter frame size **GX**



Fixing with
6 x M8 bolts
6 x M8 nuts
6 x M8 washers

Tightening torque
with washers
fitted: 13.0 Nm

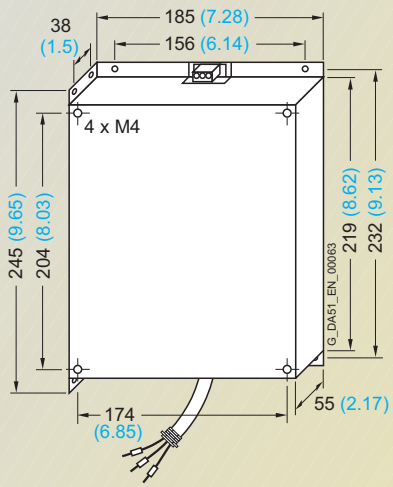
Ventilation clearance
required:
at top: 250 mm
at bottom: 150 mm
in front: 50 mm

All dimensions in mm (values in brackets are in inches)

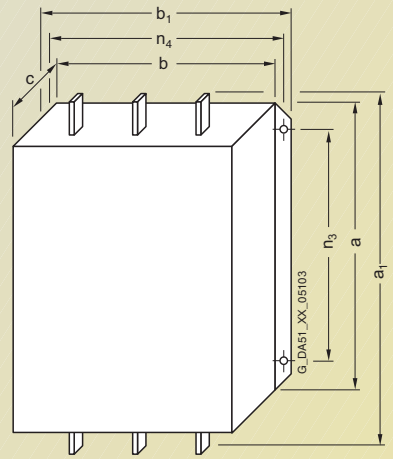
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Dimension drawings

EMC filter



EMC filter for frame size **C**



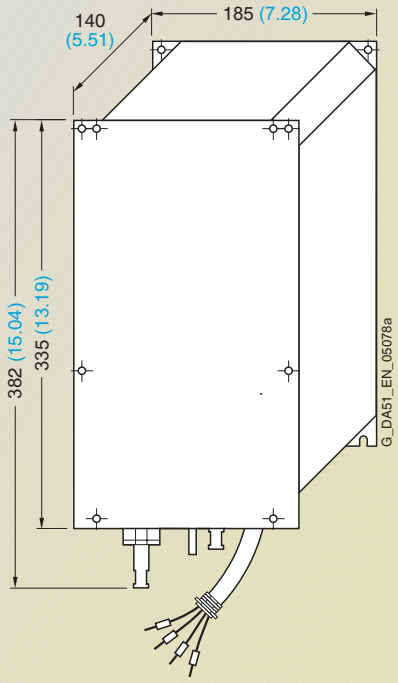
EMC filter Class A Type 6SL3000-	for inverter Frame size (FS)	Dimensions a	a_1	b	b_1	c	n_3	n_4	Weight, approx. kg
0BE32-5AA0	**FX**	270 (10.63)	360 (14.17)	200 (7.87)	240 (9.45)	116 (4.57)	210 (8.27)	220 (8.66)	12.3
0BE34-4AA0	**FX/GX**	270 (10.63)	360 (14.17)	200 (7.87)	240 (9.45)	116 (4.57)	210 (8.27)	220 (8.66)	12.3
0BE36-0AA0	**GX**	310 (12.2)	400 (15.75)	215 (8.46)	265 (10.43)	140 (5.51)	250 (9.84)	240 (9.45)	19.0

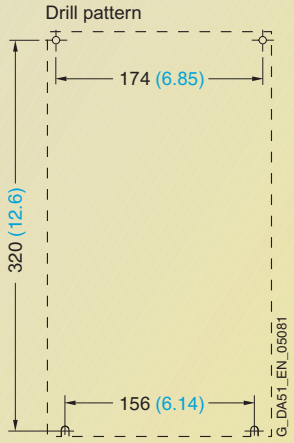
EMC filter for frame sizes **FX** and **GX**

All dimensions in mm (values in brackets are in inches)

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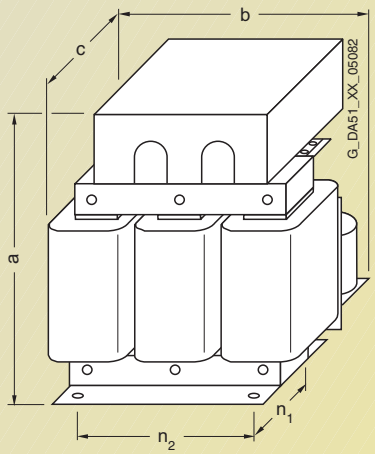
LC filter





Fixing with M5 bolts

LC filter 6SE6400-3TD03-2CD0 for frame size **C**



Fixing with M10 bolts

LC filter for frame sizes **D** to **F**

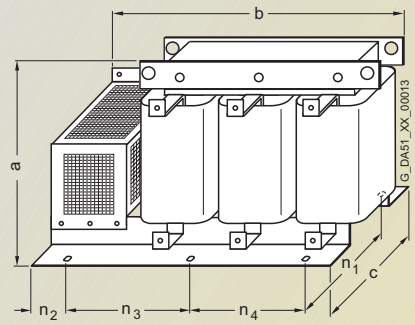
LC filter Type	for inverter Frame size (FS)	Dimensions					Weight (max.)
		a	b	c	n_1	n_2	kg
6SE6400-3TD03-7DD0	**D**	278 (10.94)	240 (9.45)	230 (9.06)	115 (4.53)	190 (7.48)	21.0
6SE6400-3TD04-8DD0	**D**	290 (11.42)	240 (9.45)	240 (9.45)	125 (4.92)	190 (7.48)	26.0
6SE6400-3TD06-1DD0	**D**	345 (13.58)	300 (11.81)	220 (8.66)	120 (4.72)	240 (9.45)	34.0
6SE6400-3TD07-2ED0	**E**	355 (13.98)	300 (11.81)	235 (9.25)	145 (5.71)	240 (9.45)	49.5
6SE6400-3TD11-5FD0	**E/F**	460 (18.11)	360 (14.17)	235 (9.25)	125 (4.92)	264 (10.39)	67.0
6SE6400-3TD15-0FD0	**F**	460 (18.11)	360 (14.17)	250 (9.84)	140 (5.51)	264 (10.39)	75.0
6SE6400-3TD18-0FD0	**F**	520 (20.47)	420 (16.54)	290 (11.42)	173 (6.81)	316 (12.44)	77.5

All dimensions in mm (values in brackets are in inches)

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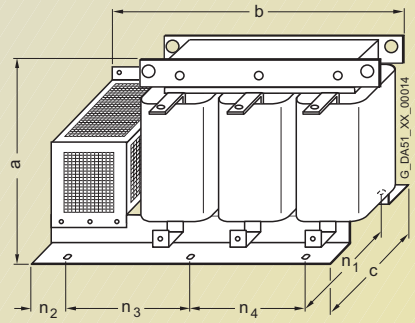
Dimension drawings

Sinusoidal filter



Sinusoidal filter for frame sizes **FX** and **GX**

Sinusoidal filter Type 6SL3000-	for inverter Frame size (FS)	Dimensions							Weight (max.)
		a	b	c	n_1	n_2	n_3	n_4	kg
2CE32-3AA0	**FX**	300 (11.81)	620 (24.41)	320 (12.6)	280 (11.02)	105 (4.13)	225 (8.86)	150 (5.91)	135.0
2CE32-8AA0	**GX**	300 (11.81)	620 (24.41)	320 (12.6)	280 (11.02)	105 (4.13)	225 (8.86)	150 (5.91)	138.0



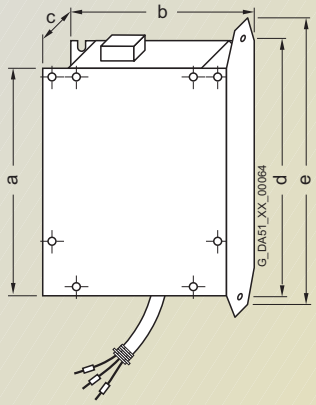
Sinusoidal filter for frame size **GX**

Sinusoidal filter Type 6SL3000-	for inverter Frame size (FS)	Dimensions							Weight (max.)
		a	b	c	n_1	n_2	n_3	n_4	kg
2CE33-3AA0	**GX**	370 (14.57)	620 (24.41)	360 (14.17)	320 (12.6)	105 (4.13)	225 (8.86)	150 (5.91)	144.0
2CE34-1AA0	**GX**	370 (14.57)	620 (24.41)	360 (14.17)	320 (12.6)	105 (4.13)	225 (8.86)	150 (5.91)	208.0

All dimensions in mm (values in brackets are in inches)

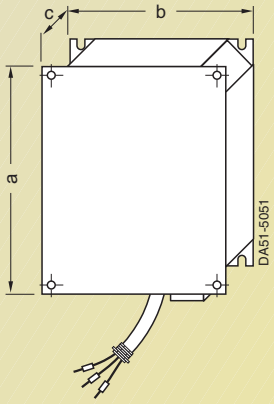
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Line commutating chokes



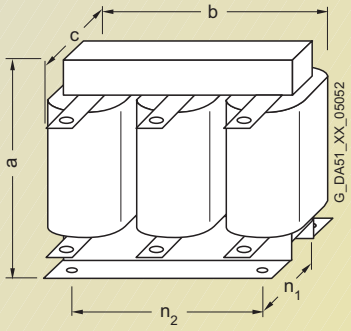
Line commutating choke for	Dimensions					Weight (max.)
	a	b	c	d	e	kg
Frame size **C**	245 (9.65)	185 (7.28)	50 (1.97)	264 (10.39)	280 (11.02)	5.1

Line commutating choke for frame size **C**



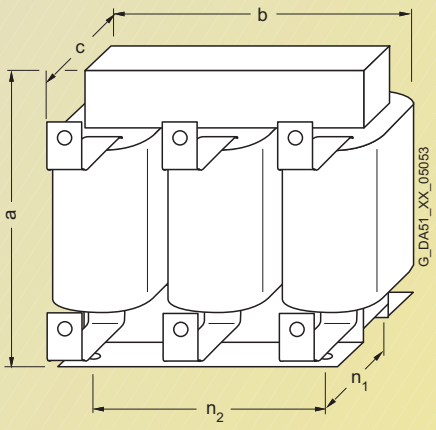
Line commutating choke for	Dimensions			Weight (max.)
	a	b	c	kg
Frame size **D**	520 (20.47)	275 (10.83)	85 (3.35)	9.5
Frame size **E**	650 (25.59)	275 (10.83)	95 (3.74)	17.0

Line commutating choke for frame sizes **D** and **E**



Line commutating choke Type 6SE6400-	for inverter Frame size	Dimensions					Weight (max.)
		a	b	c	n_1	n_2	kg
3CC11-....	**F**	228 (8.98)	240 (9.45)	141 (5.55)	95 (3.74)	185 (7.28)	25.0

Line commutating choke for inverter frame size **F**



Line commutating choke Type 6SL3000-	for inverter Frame size (FS)	Dimensions					Weight (max.)
		a	b	c	n_1	n_2	kg
0CE32-....	**FX**	248 (9.76)	255 (10.04)	203 (7.99)	101 (3.98)	200 (7.87)	24.0
0CE33-....	**GX**	248 (9.76)	255 (10.04)	203 (7.99)	101 (3.98)	200 (7.87)	25.0
0CE35-....	**GX**	269 (10.59)	275 (10.83)	210 (8.27)	118 (4.65)	224 (8.82)	35.0

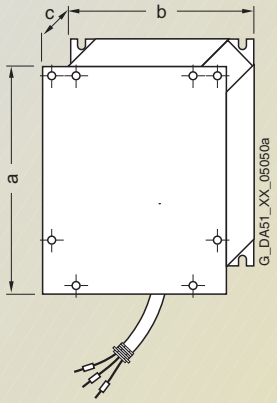
Line commutating choke for inverters of frame sizes **FX** and **GX**

All dimensions in mm (values in brackets are in inches)

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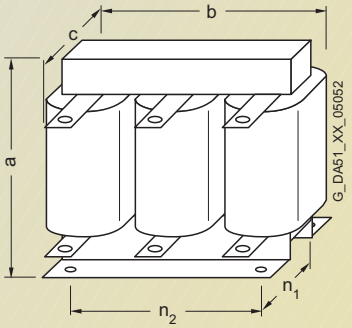
Dimension drawings

Output chokes



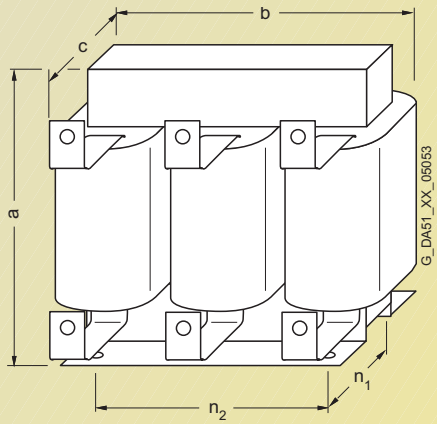
Line commutating choke
for frame size **C**

Output chokes for	Dimensions			Weight (max.)
	a	b	c	kg
Frame size **C**	245 (9.65)	185 (7.28)	80 (3.15)	6.6



Output chokes
for inverters of size **D**, **E** and **F**

Output choke Type 6SE6400-	for inverter Frame size (FS)	Dimensions a	b	c	n_1 (to DIN 41308)	n_2	Weight (max.) kg
3TC03-8DD0	**D**	210 (8.27)	225 (8.86)	179 (7.05)	94 (3.70)	176 (6.93)	16.1
3TC05-4DD0	**D**	210 (8.27)	225 (8.86)	150 (5.91)	70 (2.76)	176 (6.93)	10.7
3TC07-5ED0	**E**	248 (9.76)	270 (10.63)	209 (8.23)	101 (3.98)	200 (7.87)	24.9
3TC08-0ED0	**E**	210 (8.27)	225 (8.86)	150 (5.91)	70 (2.76)	176 (6.93)	10.4
3TC14-5FD0	**F**	321 (12.64)	350 (13.78)	288 (11.34)	138 (5.43)	264 (10.39)	51.5
3TC15-4FD0	**F**	248 (9.76)	270 (10.63)	209 (8.23)	101 (3.98)	200 (7.87)	24.0



Output chokes
for inverters of size **FX** and **GX**

Output choke Type 6SL3000-	for inverter Frame size (FS)	Dimensions a	b	c	n_1	n_2	Weight (max.) kg
2BE32-1AA0	**FX**	285 (11.22)	300 (11.81)	257 (10.12)	163 (6.42)	224 (8.82)	60.0
2BE32-6AA0	**FX**	315 (12.4)	300 (11.81)	277 (10.91)	183 (7.2)	224 (8.82)	66.0
2BE33-2AA0	**GX**	285 (11.22)	300 (11.81)	257 (10.12)	163 (6.42)	224 (8.82)	62.0
2BE33-8AA0	**GX**	285 (11.22)	300 (11.81)	277 (10.91)	183 (7.2)	224 (8.82)	73.0
2BE35-0AA0	**GX**	365 (14.37)	300 (11.81)	277 (10.91)	183 (7.2)	224 (8.82)	100.0

All dimensions in mm (values in brackets are in inches)