

# SERVO DRIVE C1251-MI-XC-2S

With integrated Safety Functions

**EtherCAT®**

**PROFI**  
INDUSTRIAL ETHERNET  
**NET**



**EtherNet/IP™**

ETHERNET  
**POWERLINK**

**LinUDP**

**CC-Link**

**sercos**  
the automation bus



- ✓ Integrated safety functions e.g. Safe Limited Speed (SLS)
- ✓ PROFIsafe and safe digital IO's
- ✓ Configurable multibus-interface
- ✓ A wide range of technology functions and integrated prozess monitoring
- ✓ Various interfaces for external devices such as position sensor etc.
- ✓ Exchangeable SD memory card

## Servo Drive C1251-MI-XC-2S

Series C1200 servo drives are axis controllers, with 32-bit position resolution and an integrated power stage, for linear and rotary motors. The controllers are suitable for standard and high-end positioning tasks with NC Synchronisation.

This flexible hardware in compact design enables the control of any 2/3-phase motors. This means that low-power rotary servo motors such as brushless DC motors can also be integrated into the same control concept. The LinMot servo drives of the C1200 series offer a universal solution for a flexible drive concept in single and multi-axis applications with linear motors and other actuators.

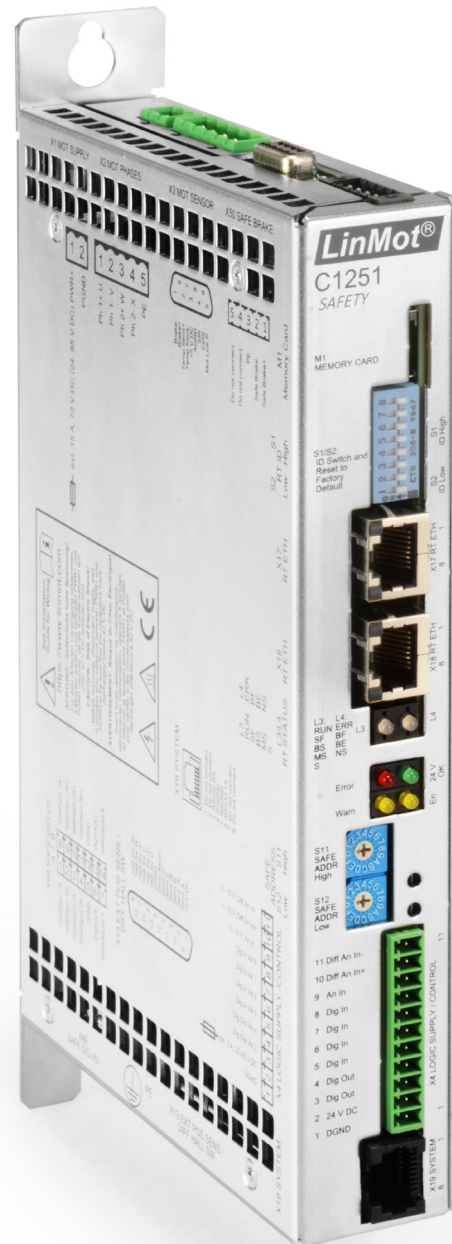
The servo drives have two separate power supplies for the logic and power sections. This has the advantage that the drive and the linear motor do not have to be reinitialised when the machine power is restarted, as all process data, including the actual position of the linear motor, are still up-to-date.

The ultra-fast control cycle together with the high resolution of the A/D converter of the C1200 series servo drives guarantee perfect motor control in demanding positioning tasks. Possible functions include interpolated movements, traversing of path curves, positioning with movement profiles and position streaming. C1251 drives with -2S option contain an integrated and certified safety module under the same housing, which together with -2S motors enables the implementation of safety functions, such as safe reduced speed (SLS). The safety functions are conveniently controlled via safety protocols such as PROFIsafe or alternatively via digital safety IO's.

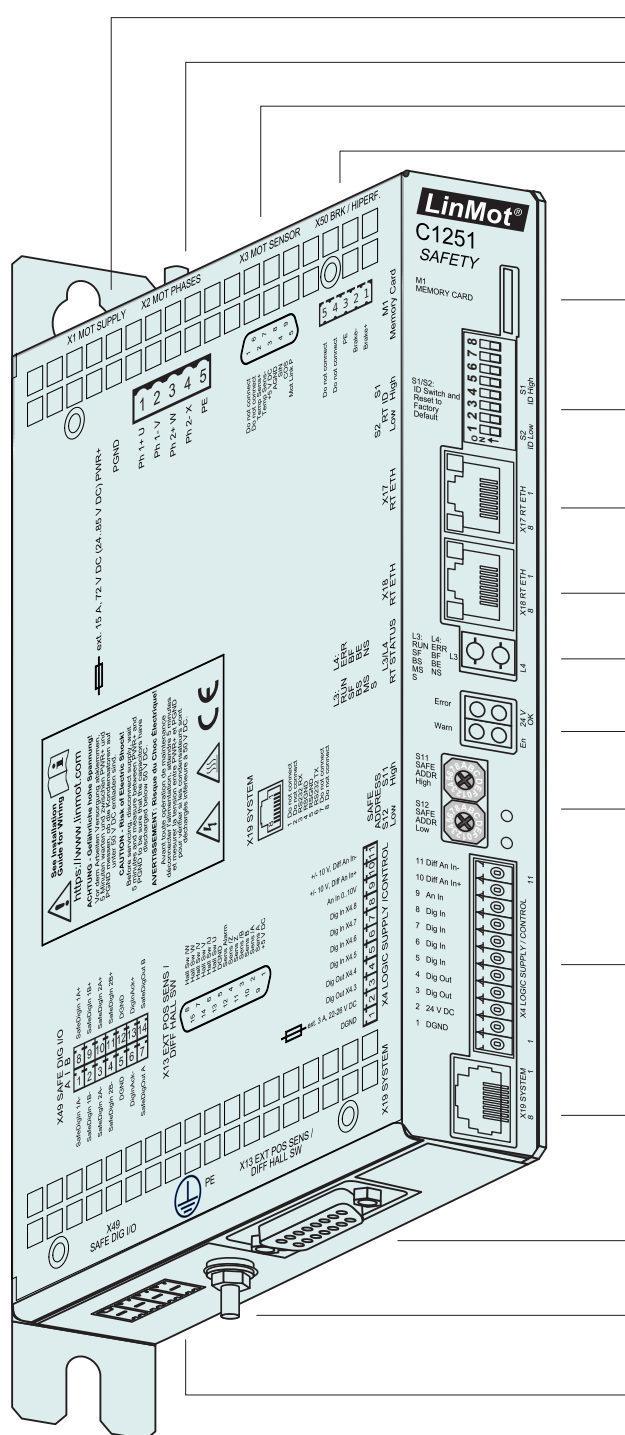
Freely programmable analogue and digital inputs and fast trigger inputs are available as fast process interfaces or for direct evaluation of sensor signals.

Simple configuration is ensured by the intuitive LinMot Talk PC software. In addition to online documentation, comprehensive debugging tools such as an oscilloscope or the error memory ensure fast commissioning of the axes. Motors with plug-and-play function are automatically recognised and configured.

The C1200 Servo Drives offer all the necessary interfaces to equip linear or rotary motors with optional peripherals such as reference and limit switches, high-precision external position sensors or a mechanical holding brake.



	C1251-MI-XC-2S-0E-000	C1251-MI-XC-2S-0E-C00
Power Supply		
	72 VDC (24 to 85 VDC)	
Maximum Supported Motor Current		
	25 A <sub>pk</sub> (0 to 599 Hz)	
Logic Supply		
	24 VDC (22 to 26 VDC)	
Control of		
LinMot Motors P0x-... / PR0x-...	•	•
3rd Party Motors (please contact Support)	•	•
Technology Functions		
	Point-to-Point Entries (VAI)	
	Limited Jerk Motion Commands (VAIJ)	
	Force and Torque Control	
	Process Monitoring	
	Command Table with up to 255 Entries	
	Plug and Play (PnP) Auto Configuration	
	Time Curves up to 100 Motion Profiles / Up to 16302 Curve Points	
	Real Time Streaming	
	Drive Profiles	
Fieldbuses (Protocols)		
	PROFINet (LinMot I/O, PROFIdrive, PROFIsafe)	
	Powerlink (LinMot I/O, DS402)	
	Sercos III (FSP Drive)	
	EtherNet/IP (LinMot I/O, CIP Sync Motion)	
	LinUDP	
	CC-Link IE Field Basic (LinMot I/O)	
Interfaces		
Analog Inputs 0..10V / +-10V	1 / 1	
Digital Inputs / Outputs 24 V	4 / 2	
Brake Output 24 V / 0.8 A	1	
Safe Digital Inputs / Outputs	2 (+1 non-safe acknowledge input) / 1	
Incremental Encoder (RS422 up to 25 Mcounts/s)	•	•
Absolute Encoder (SSI, BiSS-B, BiSS-C, EnDat 2.1, EnDat 2.2)	•	•
RS232 Config	•	•
ETHERNET Config (EoE, etc... depending on Interface)	•	•
Timings		
Min. Bus Cycle Time	250 μs	
PWM Frequency	16 kHz	
Trigger Commands	≥ 125 μs	
Position Drive	125 μs	
Integrated Safety Functions		
Safe Torque Off (STO)	•	•
Safe Stop 1 (SS1)	•	•
Safe Stop 2 (SS2)	•	•
Safe Operating Stop (SOS)	•	•
Safe Limited Speed (SLS)	•	•
Safe Brake Control (SBC)	•	•
Safe Brake Test (SBT)	•	•
Calibrated Measuring Functions (-Cxx Option)		
Calibrated analogue measuring Inputs		•



X1: Motor Power Supply

X2: Motor Phases

X3: Motor Signal

X50: Safe Brake Control

M1: SD Memory Card (Slot)

S1-2: Bus Address Switch

X17: RT ETH In

X18: RT ETH Out

L3-4: RT Bus LEDs

LED: State Indicator

S11-12: Safe Address High/Low

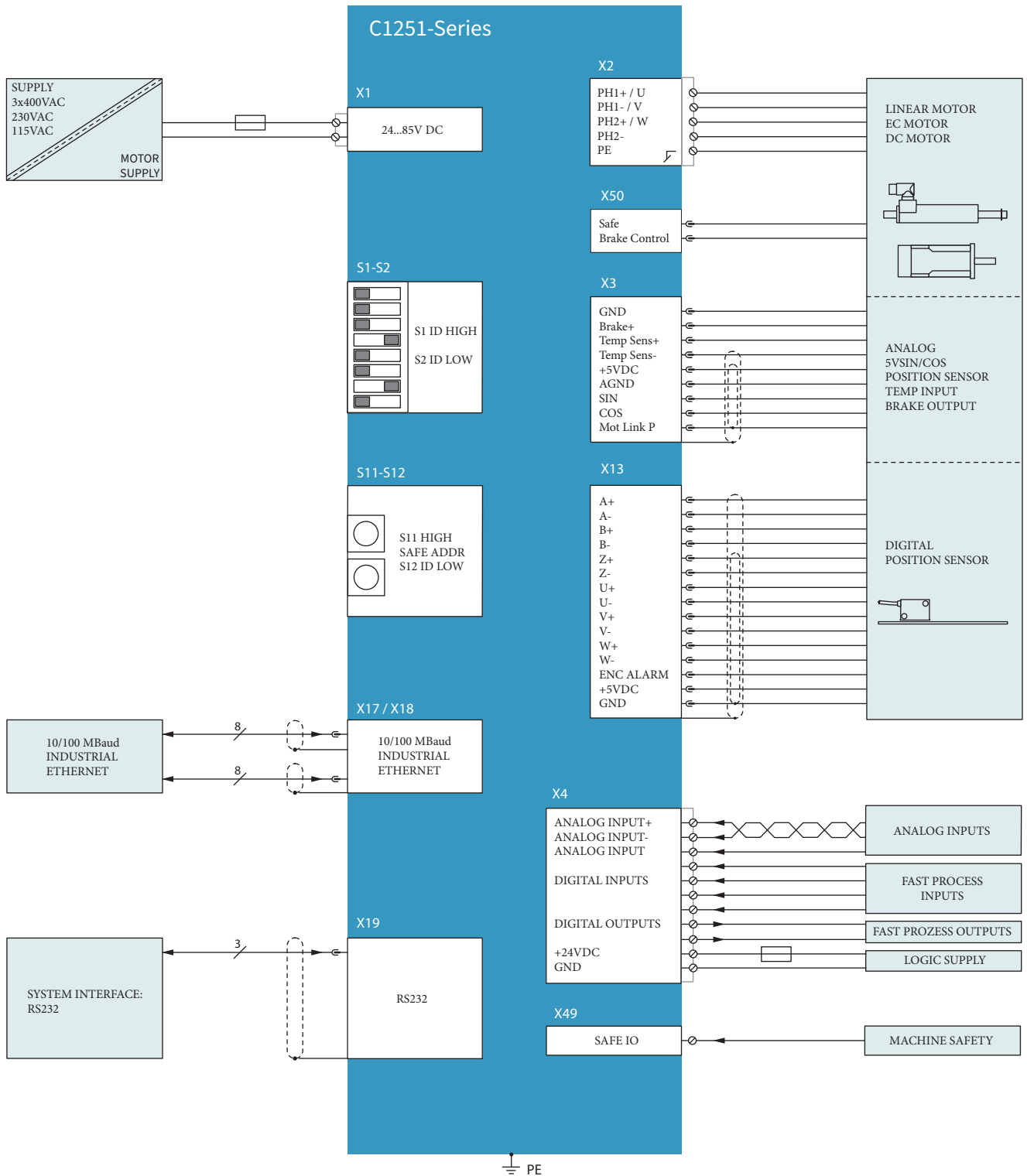
X4: Logic Supply / Control

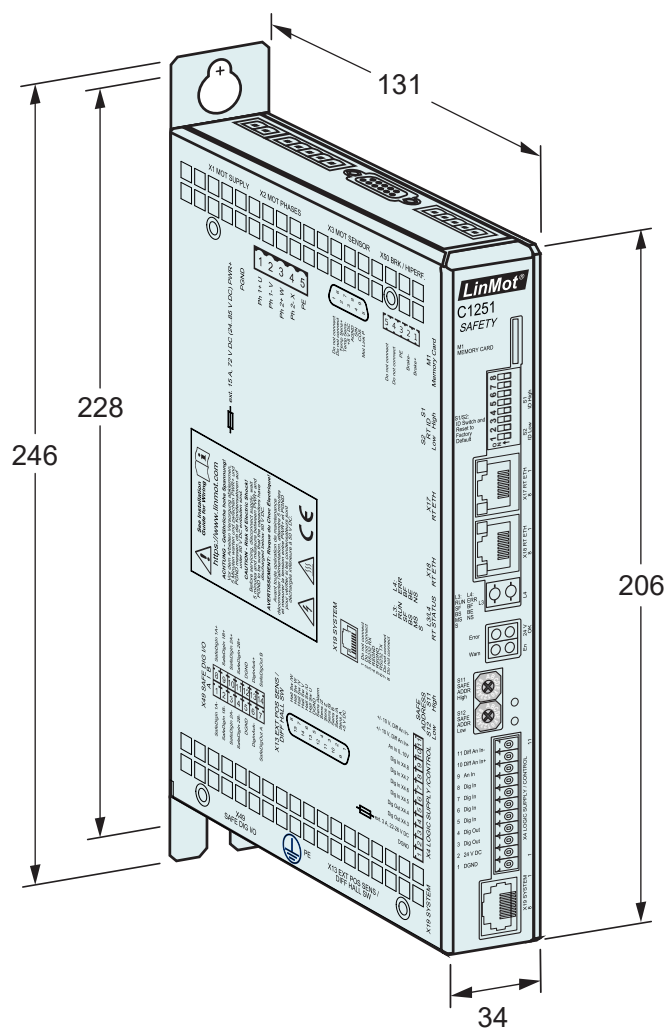
X19: System Configuration RS232

X13: External Position Sensor /  
Differential Hall Switch

PE: Ground

X49: Safe Digital IO





Dimensions in mm  
Mounting points for M5 screws

Servo Drive Serie		C1251-MI-XC-2S-0E-000	C1251-MI-XC-2S-0E-C00
Width	mm (in)	34 (1.4)	
Height	mm (in)	206 (8.11)	
Height with fixings	mm (in)	246 (9.69)	
Depth	mm (in)	131 (5.16)	
Weight	g (lb)	1100 (2.42)	
Mounting Screws		2 x M5	
Mounting Distance between screw holes	mm (in)	228 (8.98)	
Case IP Code	IP	20 (mounting in the control cabinet with at least IP54)	
Storage temperature	°C	-25...40	
Transport temperature	°C	-20...70	
Operating temperature	°C	5...40	
Relative humidity	%	10...85 (non-condensing)	
Pollution	IEC/EN 60664-1	Pollution degree 2	
Shock resistance (22 ms)	m/s <sup>2</sup>	40	
Vibration resistance (10-150 Hz)	m/s <sup>2</sup>	1	
Max. case temperature	°C	70	
Max. power dissipation	W	30	
Mounting place		in the control cabinet (minimum IP54)	
Mounting position		vertical	
Distance between Drives	mm (in)	20 (0.8) horizontal / 50 (2) vertical	

Servo Drives		
Item	Description	Part Number
<b>Drives</b>		
<b>C1251-MI-XC-2S-0E-000</b>	C1251 Drive with Multi Interface (72 V/25 A)	<a href="#">0150-2933</a>
<b>C1251-MI-XC-2S-0E-C00</b>	C1251 Drive with Multi Interface (72 V/25 A), Calibrated Measuring Amplifier	<a href="#">0150-4185</a>
Accessories		
Item	Description	Part Number
<b>Connector Set</b>		
<b>DC01-C1251-2S/X1/X4/X49/X50</b>	Drive Connector Set for C1251-2S	<a href="#">0150-4391</a>
<b>Single Connector</b>	<b>All included in set 0150-4391</b>	
<b>DC01-C1X00/X1</b>	Drive Connector for PWR 72 VDC Input	<a href="#">0150-3525</a>
<b>DC01-C1X00/X2</b>	Drive Connector Motor Phases	<a href="#">0150-3526</a>
<b>DC01-Signal/X4</b>	Drive Connector 24 VDC & Logic	<a href="#">0150-3447</a>
<b>DC01-Safety/X49</b>	Drive Connector 2S Safety (2 pcs. necessary)	<a href="#">0150-4390</a>
<b>DC01-X50 Safe Brake</b>	Drive Connector Safe Brake	<a href="#">0150-4392</a>
<b>Converter</b>		
<b>USB-RS232 converter</b>	USB-RS232 Converter with cable	<a href="#">0150-2473</a>
<b>Compatible Power Supplies</b>		
<b>S02-72/600</b>	Power Supply 72 V/600W (1500W Peak), 120-230VAC	<a href="#">0150-5700</a>
<b>S02-72/1000</b>	Power Supply 72 V/1000 W, 3x400-480 VAC	<a href="#">0150-4535</a>
<b>S01-24/500</b>	Power Supply 24 V/500 W, 1x120/230 VAC	<a href="#">0150-2480</a>
<b>S01-48/300</b>	Power Supply 48 V/300 W, 1x120/230 VAC	<a href="#">0150-1941</a>
<b>S01-48/600</b>	Power Supply 48 V/600 W, 1x120/230 VAC	<a href="#">0150-1946</a>
<b>Capacitor</b>		
<b>Capacitor 10.000uF/100V</b>	Capacitor with mounting material	<a href="#">0150-3075</a>
<b>Memory Card</b>		
<b>FC10-000</b>	Memory Card for Safety Drives	<a href="#">0150-2936</a>

