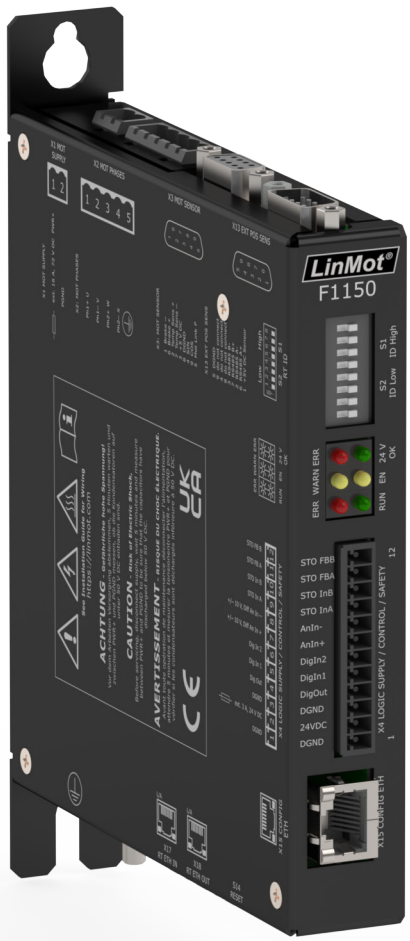
SERVO DRIVE F1150-DS-UC-3S



- Compact Drive with EtherCAT and CANopen interface
- Optimized for LinMot motors and third party actuators
- Configuration over Ethernet (X15) or EtherCAT (EoE)
- 32A power stage with STO safety
- Interface for incremental & absolute encoders
- Plug and Play (PnP) motor configuration

Servo Drive F1150-DS-UC-3S

F1150 servo drives are axis controllers with 32-bit position resolution and integrated power stage for linear motors and rotary motors. The controllers are suitable for standard and high-end positioning tasks with NC synchronisation.

This flexible hardware in a compact design enables control of any 2/3 phase motor. This means that low power rotary servomotors such as brushless DC motors can also be integrated into the same control concept. The LinMot F1150 servo drives offer a universal solution for a flexible drive concept in single and multi-axis applications with linear motors and other actuators.

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

The ultra-fast control cycle, combined with the high resolution of the A/D converter, ensures perfect motor control for demanding positioning tasks. Features include interpolated motion, trajectory tracking, motion profile positioning and position streaming. The drives can be configured directly from the higher-level control system. The Ethernet interface ensures fast parameter transfer. The F1150 Servo Drive with 3S Safety allows the drives to be stopped safely using control signals (STO) without undercutting the power stage.

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

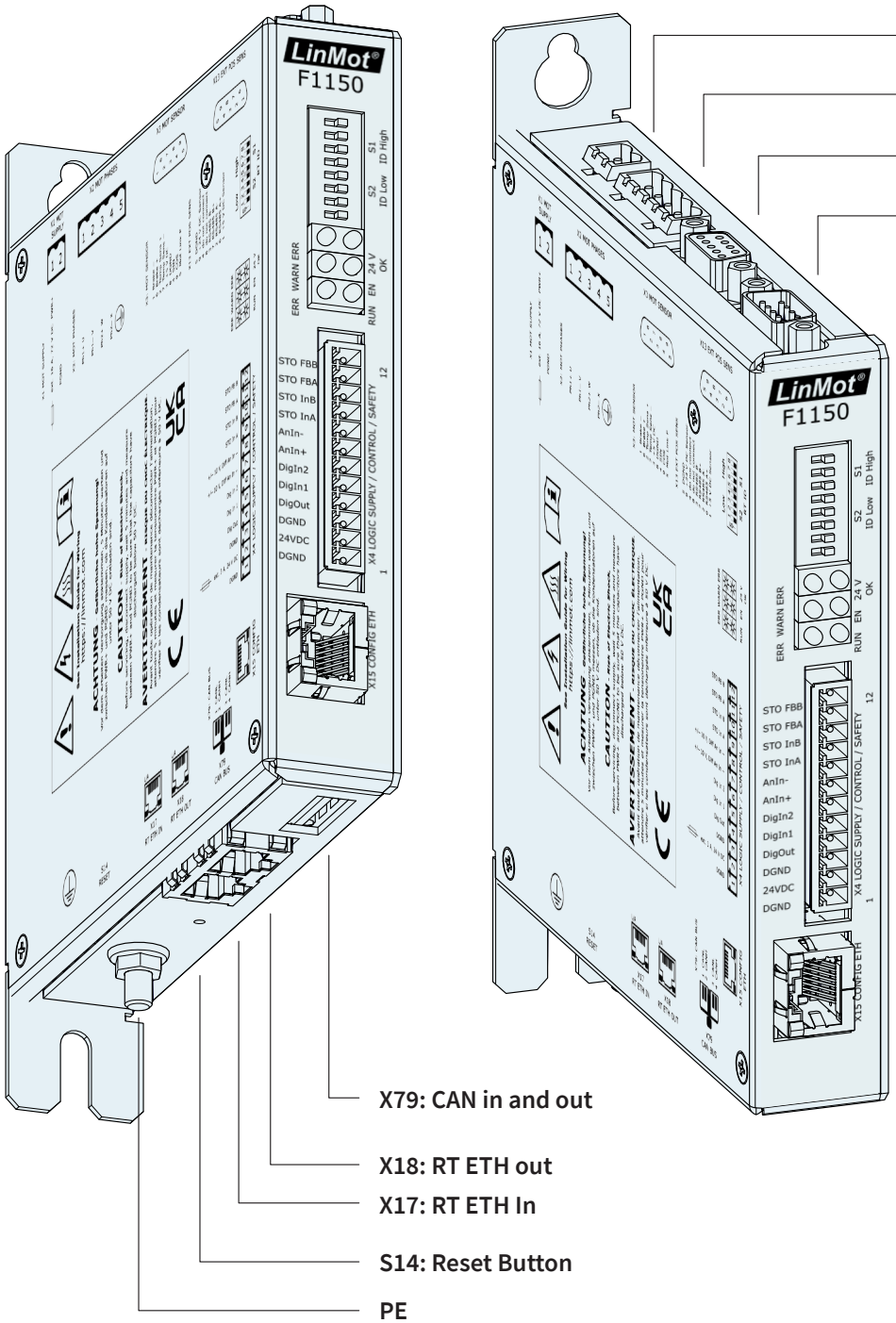
Easy configuration is guaranteed by the intuitive LinMot Talk PC software. In addition to online documentation, comprehensive debugging tools such as an oscilloscope or error memory ensure fast commissioning of the axes. Plug-and-play motors are automatically detected and configured.

The F1150 servo drives offer all the necessary interfaces to equip linear motors or rotary motors with optional peripherals such as reference and limit switches or high-precision external position sensors.

Power Supply	
	72 VDC (24 to 85 VDC)
Maximum Supported Motor Current	
	32 A_{pk} (0 to 599 Hz)
Logic Supply	
	24 VDC (22 to 26 VDC)
Control	
LinMot Motors P0x-... / PR0x-...	•
Selected third party motors (contact support)	•
Plug and Play (PnP) Auto Configuration	•
Phase short-circuit on STO, disable- and error-states*	•
Technology Functions	
	Point-to-Point Entries (VAI)
	Limited Jerk Motion Commands (VAIJ)
	Process Monitoring
	Command Table with up to 255 Entries
	Plug and Play (PnP) Auto Configuration
	Time Curves up to 50 Motion Profiles / Up to 8110 Curve Points
	Real Time Streaming
	Drive Profiles
Fieldbuses (Protocols)	
EtherCAT CiA402 (preinstalled)	•
CANopen up to 1MBaud (CANopen FW must be installed)	**(•)**
Interfaces	
Analog Inputs +-10V	1
Digital Inputs / Outputs 24 V	2 / 1
Brake Output 24 V / 0.8 A	1
Incremental (RS422 up to 25 Mcounts/s, A-B only, Z not supp.)	•
Absolute (SSI, BiSS-B, BiSS-C, EnDat2.1, EnDat 2.2)	•
Configuration Interface	
Ethernet (X15), 100BASE-TX, IPV4 and IPV6	•
Ethernet (EoE) (only if EtherCAT is used)	•
Timings	
Min. Bus Cycle Time	500 µs
PWM Frequency	16 kHz
Trigger Commands	≥ 250 µs
Position Drive	250 µs
Integrated Safety Functions	
Safe Torque Off (STO) with phase short-circuit (3S-Safety)	•
Certification	
cULus - pending	The F1150-DS-UC-3S-xxx will be listed according UL61800-5-1 (pending, this is planned to be done until the end of the year 2025).

* This feature greatly improves the system behavior on the STO and error states, because the motor will be braked by the eddy current.

EtherCAT® CANopen



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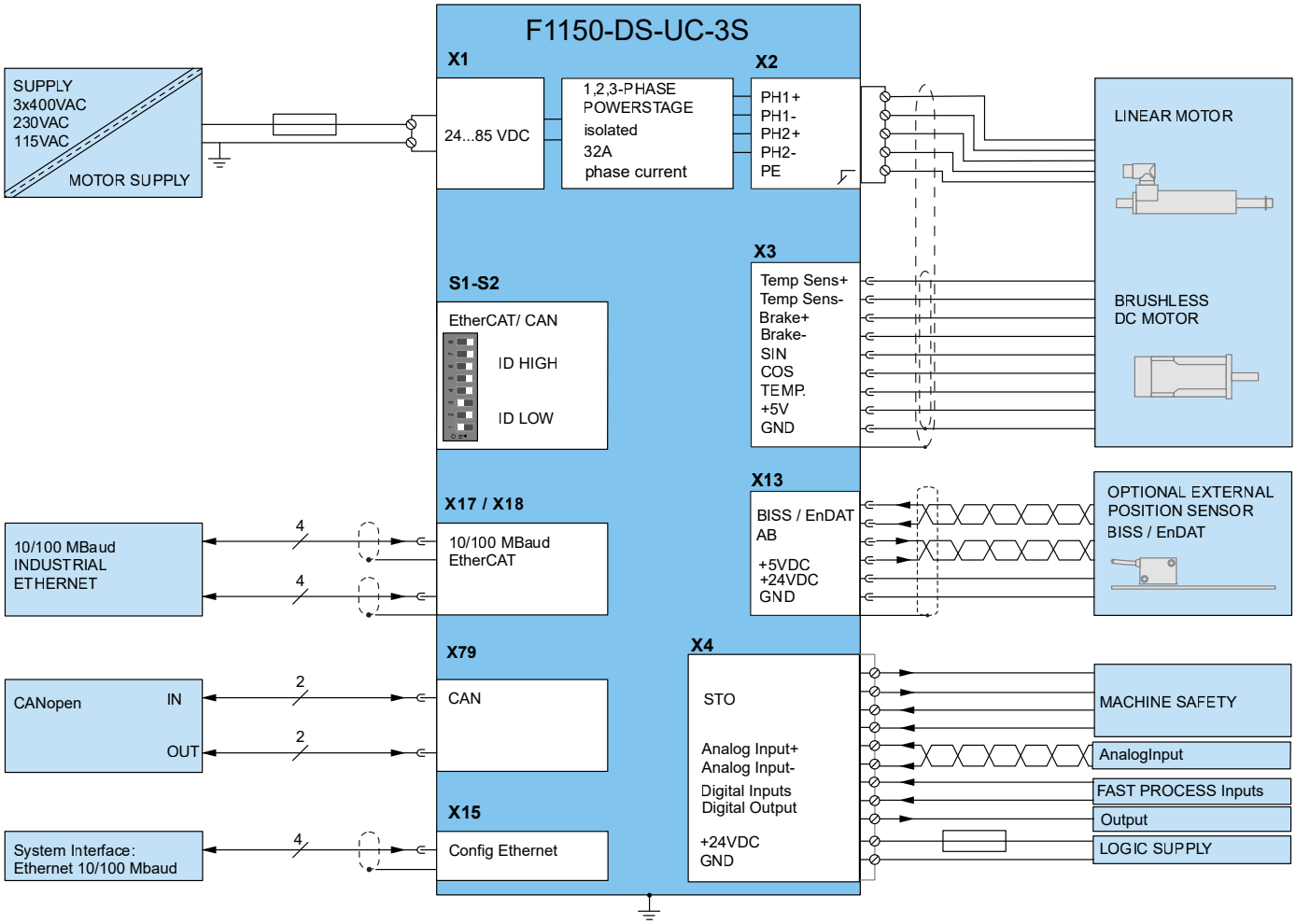
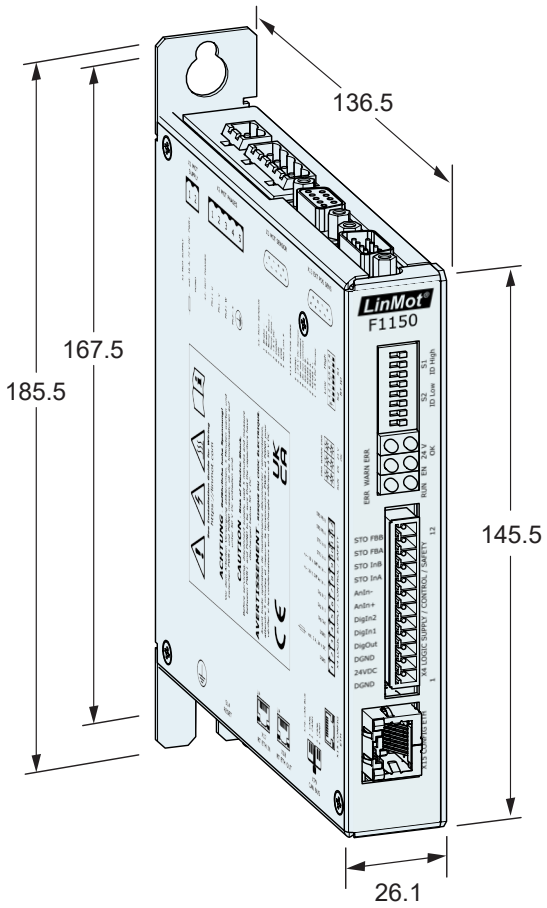

F1150-DS-UC-3S
X1
X2
SUPPLY
3x400VAC
230VAC
115VAC
MOTOR SUPPLY
24...85 VDC
1,2,3-PHASE
POWERSTAGE
isolated
32A
phase current
PH1+
PH1-
PH2+
PH2-
PE
LINEAR MOTOR
X3
S1-S2
Temp Sens+
Temp Sens-
Brake+
Brake-
SIN
COS
TEMP.
+5V
GND
BRUSHLESS
DC MOTOR
EtherCAT/ CAN
ID HIGH
ID LOW
X13
X17 / X18
BISS / EnDAT
AB
+5VDC
+24VDC
GND
OPTIONAL EXTERNAL
POSITION SENSOR
BISS / EnDAT
10/100 MBaud
INDUSTRIAL
ETHERNET
4
4
10/100 MBaud
EtherCAT
X79
X4
CANopen
IN
OUT
2
2
CAN
STO
Analog Input+
Analog Input-
Digital Inputs
Digital Output
+24VDC
GND
MACHINE SAFETY
AnalogInput
FAST PROCESS Inputs
Output
LOGIC SUPPLY
X15
System Interface:
Ethernet 10/100 Mbaud
4
Config Ethernet



Dimensions in mm
Mouting points for M5 screws

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Servo Drive		F1150-DS-UC-3S
Width	mm (in)	26.1 (1.03)
Height	mm (in)	145.5 (5.73)
Height with fixings	mm (in)	185.5 (7.30)
Depth	mm (in)	136.5 (5.37)
Weight	g (lb)	765 (1.67)
Mounting Screws		2 x M5
Mounting Distance between screw holes	mm (in)	167.5 (6.59)
Case IP Code	IP	20
Storage temperature	°C	-25...40, maximum change 20 K/hour
Transport temperature	°C	-20...70
Operating temperature	°C	5...40 at rated data
Relative humidity		< 85 % (non-condensing)
Air pressure	hPa	700…1060
Exposure to ionizing radiation		Not acceptable
Exposure to corrosive environment		Not acceptable
EMC		EN/IEC 61000-6-7 (Functional Safety)
Pollution	IEC/EN 60664-1	Pollution degree 2
Shock resistance (30 ms)	g (lb)	5 (0.01)
Vibration resistance (10-150 Hz)	g (lb)	1 (0.002)
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)	Without power derating *: 20 (0.8) horizontal / 50 (2) vertical With power derating *: 5 (0.2) horizontal / 20 (0.8) vertical

* The derating is depending on the situation in the cabinet. The temperature of the drive should be checked under full load (the temperature should be stable, which may take an hour or more). This allows to verify that enough margin is there if the cabinet goes to the maximum allowable temperature of 40° C. For example, if the drive temperature reaches 45° C and the cabinet temperature is 30° C, this would result in a drive temperature of about 55° C at a cabinet temperature of 40° C. The warning level of the drive is configured by default to 75° C and the error level to 80° C. In this example, everything is fine. If the drive temperature is long time above the warning level, this might result in a reduced lifetime of the drive.

Servo Drives		
Item	**Description**	**Part Number**
F1150-DS-UC-3S-000	DS Drive (72V/32A), STO	0150-6489

Accessories		
Item	**Description**	**Part Number**
Single Connector	**All included in set 0150-4391**	
DC01-C1X00/X2	Drive Connector Motor Phases	0150-3526
Compatible Power Supplies		
S02-72/600	Power Supply 72V/600W (1500W Peak), 120-230VAC	0150-5700
S02-72/1000	Power Supply 72 V/1000 W, 3x400-480 VAC	0150-4535
S01-24/500	Power Supply 24 V/500 W, 1x120/230 VAC	0150-2480

The connectors X1 and X4 are delivered together with the drive! The connector X2 is included on the motor cable.

DOC-NO. 0185-0222-E / VERSION 1V1
SUBJECT TO ALTERATIONS