Kollmorgen S7120S-NANANA

S700 Digital Servo Amplifier



Kollmorgen S7120S-NANANA is an S700 digital servo amplifier for controlled torque, speed and positioning of electric motors. The standard configuration combines an internal brake resistor, onboard CANopen and EtherCAT communication, and dual-channel Safe Torque Off. Its onboard position controller and flexible feedback interfaces support coordinated machine-axis applications, while digital control loops process motor current, speed and position. The S7120S high-peak-current version supplies 12 A rms continuously and up to 30 A rms for short acceleration demands.

Technical Specifications

Product Identity	
Manufacturer	Kollmorgen
Complete order code	S7120S-NANANA
Series	S700
Housing dimensions	70 × 345 × 243 mm, without connectors
Functional Configuration	
Standard interfaces	CANopen; EtherCAT; RS-232
Safety function	Dual-channel Safe Torque Off
Performance & Power	
Mains supply	3 × 208–480 V AC nominal, 50/60 Hz
Continuous output current	12 A rms
Peak output current	30 A rms, maximum 2 seconds
Control supply	24 V DC PELV, –0% / +15%
Environment	
Protection	IP20
Rated operating ambient	0 to +40 °C

Selected original manufacturer pages follow on pages 3–5.

Compatibility & Selection Guide

S700 motion integration. S7120S-NANANA can control synchronous servo, linear, asynchronous or DC motors when the motor parameters and feedback are configured for that application. Supported feedback families include resolver, encoder, AquadB and ComCoder.

Controller and setup interfaces. The onboard fieldbus interfaces support CANopen and EtherCAT. Use DRIVEGUI.EXE through the RS-232 setup interface to configure the amplifier for the installed motor and feedback.

Wiring & Installation Reference

Electrical connection

Power. Connect the matched three-phase supply, protective earth, 24 V control supply and motor circuits using the applicable connection diagram.

Feedback and safety. Use the correct motor feedback interface and integrate dual-channel STO into the machine safety circuit.

Cabinet mounting

Prepare the panel. Mount vertically on a conductive mounting plate with unobstructed cooling airflow.

Secure the amplifier. Use three M5 socket-head screws to ISO 4762 and a 4 mm Allen key. Remove the fan for mounting and refit it afterward.

Complete protective bonding. Maintain protective-earth and shield connections as shown in the electrical installation diagram.

Installation precautions. Only qualified electrical personnel may install or wire the amplifier. Isolate and secure the supply before work. After disconnecting mains, wait at least 10 minutes and verify that DC-bus voltage is below 50 V before touching potentially live connections. Motor standstill does not establish electrical isolation.

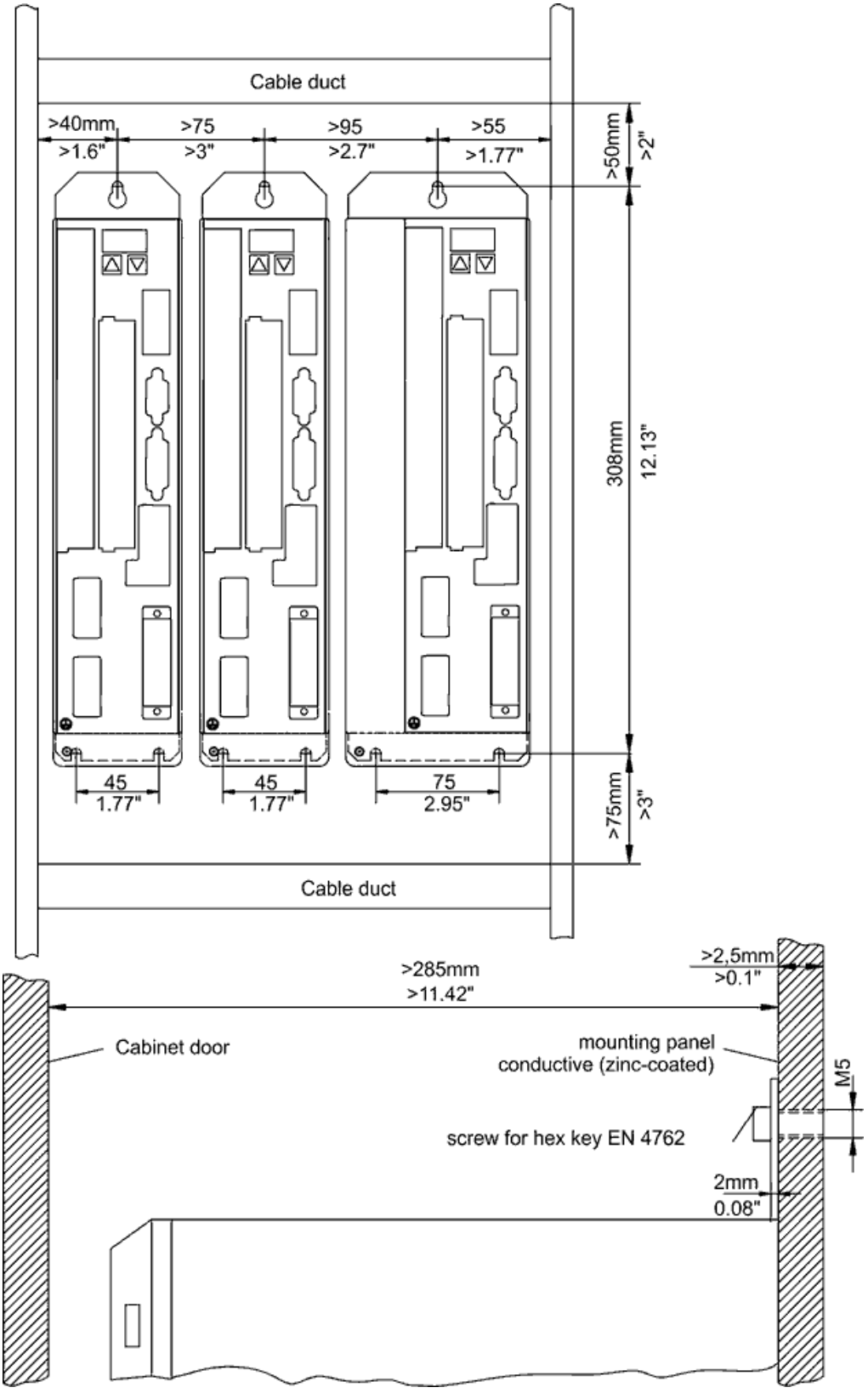
Mounting reference · PDF page 3 | Installation / connection reference · PDF page 4 | Installation / connection reference · PDF page 5

Source: Kollmorgen S7120S-NANANA manufacturer manual, April 2020; hardware revision 02.30.

8.3 Assembly

Material: three M5 hexagon socket screws to ISO 4762
Tool required : 4 mm Allen key

NOTE Remove the fan before mounting the servo amplifier and replace it again afterwards (➜ # 58).



9 Electrical Installation

9.1 Important Notes



DANGER High Voltage up to 900 V!

There is a danger of serious personal injury or death by electrical shock or electrical arcing. Capacitors can still have dangerous voltages present up to 10 minutes after switching off the supply power. Control and power connections can still be live, even if the motor is not rotating.

- Only install and wire the equipment when it is not live.
- Make sure that the cabinet is safely disconnected (for instance, with a lock-out and warning signs).
- Never remove electrical connections to the drive while it is live.
- Wait at least 10 minutes after disconnecting the drive from the main supply power before touching potentially live sections of the equipment (e.g. contacts) or undoing any connections.
- To be sure, measure the voltage in the DC bus link and wait until it has fallen below 50 V.

NOTICE Wrong mains voltage, unsuitable motor or wrong wiring will damage the amplifier.
Check the combination of servo amplifier and motor. Compare the rated voltage and current of the units. Implement the wiring according to the connection diagram (➜ # 61)
Make sure that the maximum permissible rated voltage at the terminals L1, L2, L3 or +DC, –DC is not exceeded by more than 10% even in the most unfavorable circumstances (see IEC 60204-1).

NOTICE Excessively high external fusing will endanger cables and devices. The fusing of the voltage supply must be installed by the user, best values (➜ # 32). Hints for use of Residual-current circuit breakers (FI), (➜ # 54).

NOTICE The servo amplifier's status must be monitored by the PLC to acknowledge critical situations. Wire the BTB/RTO contact in series into the emergency off circuit of the installation. The emergency off circuit must operate the supply contactor.

9.7 Connection diagram (Overview)

Reference Safety Instructions (➜ # 12) and Use As Direct (➜ # 15) !

