

# Installation Guide Power Supply

ENG

## Power range 1000 W

## Type S01-72/1000



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# 1 General information

## 1.1 Introduction

Please observe the following safety instructions, the instructions on the appliance (the term "appliance" relates to a single power supply assembly) and the detailed data sheet to avoid any risk of personal injury or damage to the appliance or to other equipment which may be connected.

## 1.2 Explanation of symbols



Triangular warning symbols warn against a danger.



Round command symbols tell what to do.

## 1.3 Qualified personnel

All work such as transport, installation, commissioning and service is only allowed to be carried out by qualified personnel. Qualified personnel in the sense of the safety instructions in this documentation are persons who are familiar with the transport, installation, assembly, commissioning and operation of the product and who have the appropriate qualifications.

This manual must be read carefully before transport, installation, commissioning, service and all safety-related information must be adhered to.

## 1.4 Liability

NTI AG (as manufacturer of LinMot linear motors and MagSpring products) excludes all liability for damages and expenses caused by incorrect use of the products. This also applies to false applications, which are caused by NTI AG's own data and notes, for example in the course of sales, support or application activities. It is the sole responsibility of the user to check the information and information provided by NTI AG regarding their safety-relevant correctness. In addition, the entire responsibility for safety-related product functionality lies exclusively with the user. Product warranties are void if products are used with stators, sliders, servo drives or cables not manufactured by NTI AG unless such use was specifically approved by NTI AG.

NTI AG's warranty is limited to repair or replacement as stated in our standard warranty policy as described in our "terms and conditions" previously supplied to the purchaser of our equipment (please request copy of same if not otherwise available). Further reference is made to our general terms and conditions.

## 1.5 Copyright

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LinMot® is a registered trademark of NTI AG.

## 2 Safety instructions



Do not open!  
Do not use without a PE connection.  
Disconnect power before installing or removing.  
For built-in use only!

This warning also applies in the event that an internal fuse blows in the appliance.  
The appliance should generally only be opened and/or repaired by the manufacturer.



Appliances are approved for operation based on the connected loads and technical data stated on the rating plate and the detailed data sheet only. Please read these carefully before installing the appliance and commencing operation and take note of any performance limitations, such as reduced output power (derating) in the event of high ambient temperatures.



All appliances must be connected to a mains supply offering voltage quality which complies with EN50160 standards. Operating the appliance via UPSs, current inverters etc. which do not meet these standards may result in damage to the appliance. In such cases, no guarantee claims will be accepted.



As a rule, appliances are intended for built-in use. They must be installed and connected by qualified personnel.



Ensure that the surrounding casing protects the appliance against fire!



Heat loss occurs during operation of the appliance. To ensure safe performance and avoid any possible risk of damage to the assembly itself and/or connected equipment, provision must be made for adequate heat dispersal. Please observe the relevant instructions in this document and the appliance.



Please take note of the information shown on the connection and pin configurations for this appliance! Pay particular attention to the information on the wire cross-section and torque and ensure that the wiring complies with prevailing standards.



If a load output is designed to take sensor cables, these must be connected to the corresponding load lines to ensure safe operation of the appliance.



Appliances may be connected in parallel if this option is given in the technical data; max. three identical appliances, otherwise please consult LinMot. Advice should normally be obtained from LinMot before connecting appliances in series.



Trim potentiometers may not be used on appliances unless the relevant setting range is given in the technical data and on the appliance, and the maximum output power is not exceeded.



All appliances have been tested for compliance with the prevailing insulation and high-voltage standards. Any additional tests of this kind which may be required should not be carried out without the consent of the appliance manufacturer, LinMot. As there could be a potential risk of damaging or destroying components in the appliance, it may be necessary to take special precautions prior to such tests.

### 3 Technical Data

S01-72/1000	
<b>Input</b>	
Input voltage range	AC 3 x 340-550V
Power frequency	50/60Hz
Efficiency	typ. 91,5%
Input current limitation	< 35A <sub>peak</sub> typ. in cold state, < 70A <sub>peak</sub> in hot state
Internal fuse	3 x 6.3AT
External branch circuit	16A (IEC), 20A (USA) trip characteristic C, D or K
<b>Output</b>	
Preset range Vo	56 - 80VDC factory setting Vo <sub>nom</sub> ± 0,15/0,2V
Max. output power	1000W
Powerboost > 0.5s - 2s	boost break necessary, see diagram in chapter 7
Powerboost < 0.5s	no boost break necessary, but the boost time in the last 4s may not be longer as 2s, otherwise a boost break 1min is necessary (boostbreak <25ms will be not recognized)
Operation indicator	green LED for Vo, red LED for error
Ripple	40mV <sub>ss</sub> typ.
Noise voltage	200mV <sub>ss</sub> typ.
Temperature coefficient	≤ 0,025% / K
Switch on / switch off	No Vo overshoot (soft-start)
Start-up delay	250 ms typ.
Rise time	20ms typ./155ms typ.bei 50.000 µF Last
Back feeding voltage	approx. 100VDC
Serial connection	yes, max. 2 identical power supplies
Parallel connection	yes, max. 3 identical power supplies
<b>Regulation</b>	
Line regulation	< 0.3% for Vo at U <sub>e_min</sub> - U <sub>e_max</sub>
Load regulation	< 0,5% for Vo at I <sub>o</sub> 0 - 100% single operation < 3% for Vo at I <sub>o</sub> 0 - 100% parallel operation
Response time	typ. 1ms at I <sub>o</sub> 20 - 80%
<b>Protection and Controlling</b>	
Oversvoltage protection (OVP)	approx. 87V automatical repeating
Current limitation	see diagramm, output permanent short-circuit proof
Overtemperature	Switches off if inside temperature becomes to high, reconnection with hysteresis
Mains buffering	11 ms typ. in normal operation
Relay contact	Relay contact (<80V/0.2A), changing at Vo < 37 / 52V from OK to FAIL
Control signal OFF	external switch-off with 5 - 63VDC/5mA <sub>min</sub> or switch from Vo

Safety / Standards	
	EN 60950-1 / IEC 60950-1 / VDE 0160 safety class I / VDE 0100 / IP20 CSA-C22.2 No 107 / CSA-C22.2 No. 60950-1-03 UL Std. 60950-1 / UL Std. 508 (Operation in Delta mains only for UL508)
EMC	
Flicker	EN 61000-3-3
Interference suppression / Interference immunity	EN 61000-6-2 / EN 61204-3
ESD	EN 61000-4-2 8/15 kV
Electrical fields	EN 61000-4-3 Noise level 10V/m
Burst	Input: EN 61000-4-4 4kV / Output: EN 61000-4-4 2kV
Surge	Input: EN 61000-4-5 2/4kV / Output: EN 61000-4-5 0,5kV
HF Immunity	EN 61000-4-6 noise level 10V
Voltage drop	EN 61000-4-11
Interference emission	EN 61000-6-3 / EN 61204-3 / EN 55022 / EN 55011 class B Radiation depends on assembly
Weight	
	2.0 kg

## 4 Operating data



### Temperature range

- 25°C...70°C integral, temperature controlled fan, air intake bottom-up (fan switched on/off in two steps dependent on temperature)

### Derating

- 2% / K at +60°C



Operation in any assembly position possible. The distance between the surrounding components and the air admission and air exit holes should be at least 50 mm.

**Please ensure that exhaust air is not immediately sucked in again.**

**Ensure that the surrounding casing protects the appliance against fire!**



Protect the products against moisture, humidity, condensation and dirt.

## 5 Mechanics

### 5.1 Connection

Main input:	4-pole 1,5 - 4 mm <sup>2</sup> strand/wire Min. tightening torque: 0,5Nm
Load output:	5-pole 2,5 - 4 mm <sup>2</sup> strand/wire Min. tightening torque: 0,5Nm
Control signals:	4-pole 0,5 - 1,5 mm <sup>2</sup> strand/wire Min. tightening torque: 0,22Nm

## 5.2 Mounting

All devices can be attached to a back wall using the mounting tabs (see dimensions chapter 8). Operation in any assembly position possible. The distance between the surrounding components and the air admission and air exit holes should be at least 50 mm.

Please ensure that exhaust air is not immediately sucked in again.

## 6 Explanation of symbols

PE 

L1 / L2 / L3

+ / -

Relay OK/FAIL

OFF

**Protective conductor**

**Do not use supply without PE connection!**

Mains phases

Load connection

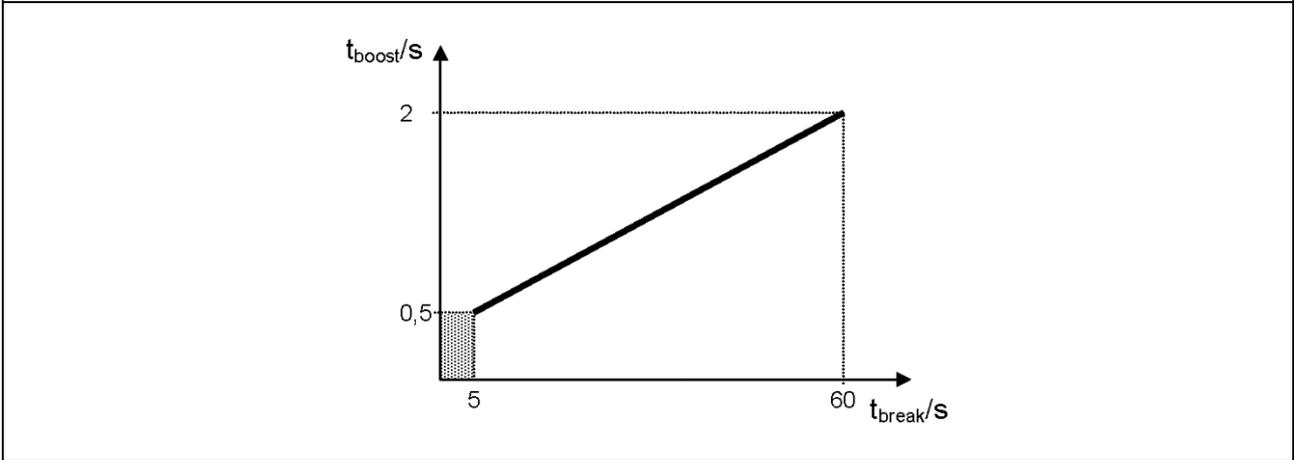
Monitoring connections

Control connection

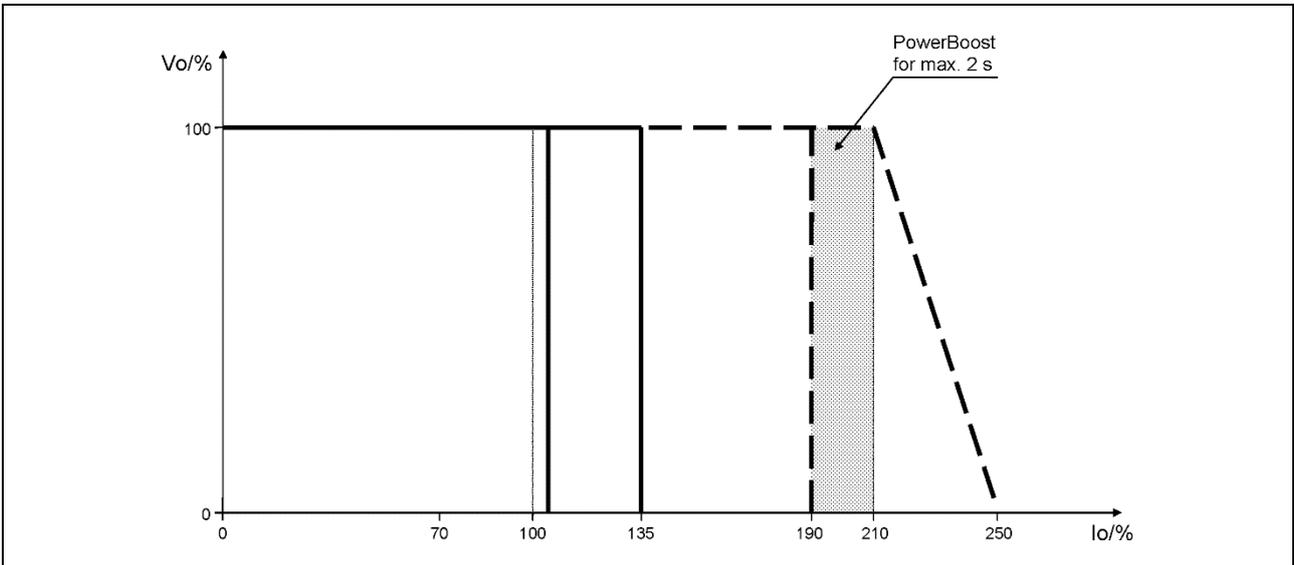


## 7 Notes

### 7.1 Context between powerboost time and minimum break time

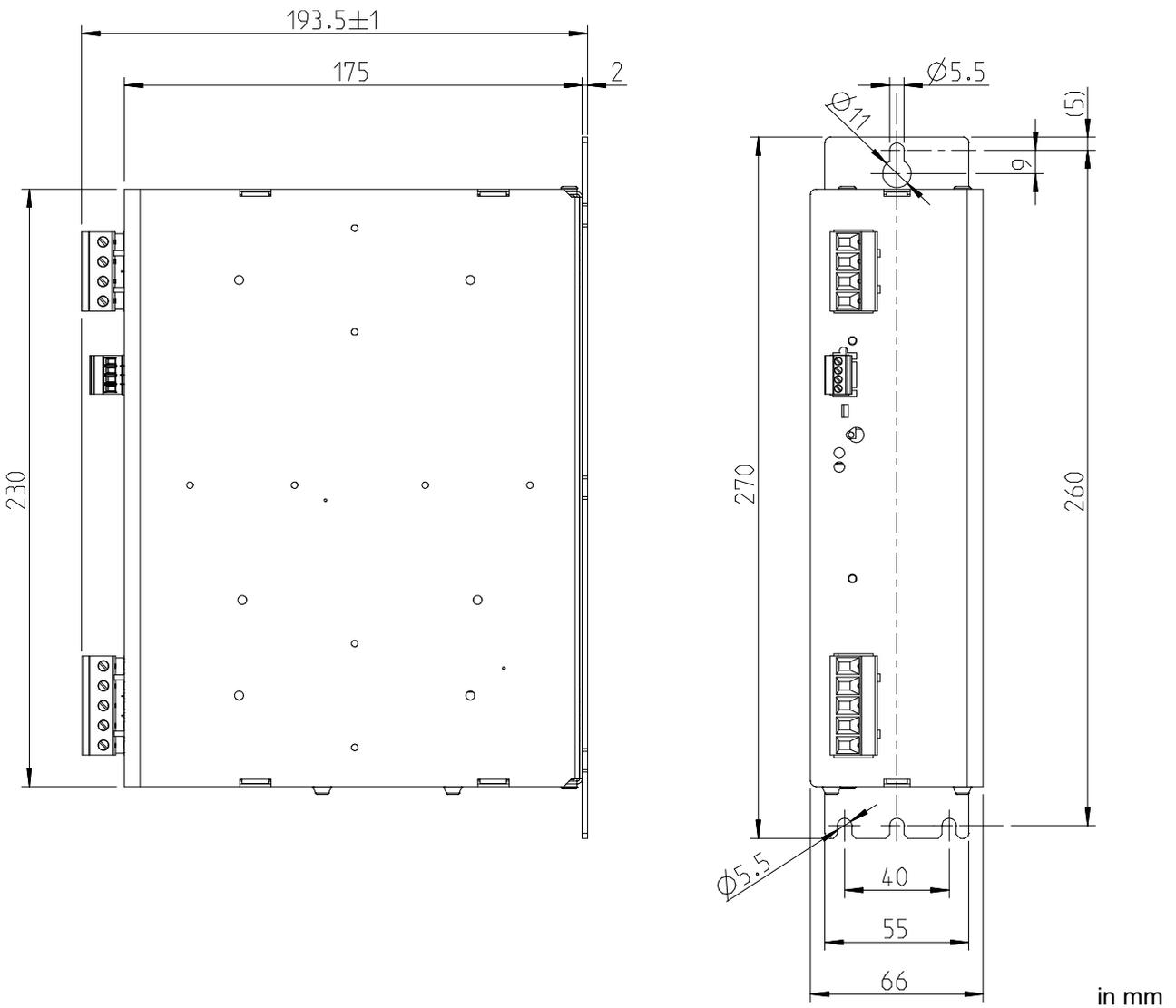


### 7.2 Current limiting characteristic



Start-up takes place with power boost between 190% and 210% of the nominal current for a period of approx. 2s. You can use power boost also in running operation.

## 8 Dimensions



## 9 International Certificates



**IECEE**  
CB SCHEME  
IEC 60950-1



## 10 Declaration of Conformity and CE-marking

Wir  
We  
Nous

**NTI AG**  
**Bodenaeckerstrasse 2**  
**8957 Spreitenbach**

erklären in alleiniger Verantwortung, dass das Produkt  
declare under our sole responsibility that the product  
declarons sous notre seule responsabilité que le produit

Produkt	Art-Nr.
Schaltnetzteil 72V/1000W, 3x340-550VAC	0150-1872

konform ist mit den Anforderungen der Richtlinien,  
is conform to the provisions of directives,  
est conforme aux exigences des directives,

**2014/35/EU (LVD) + 2014/30/EU (EMCD)**

gestützt auf die folgenden Normen,  
based on the following standards,  
base aux normes suivants,

<b>EMCD</b>	<b>EN61000-6-2:2005</b> <b>EN61000-6-3:2007 + A1:2011</b>
<b>SAFETY</b>	<b>IEC 60950-1:2005 (second edition) + A1:2009 + A2:2013</b> <b>EN 60950-1:2006 + A11:2009 + A1:2010 + AC:2011 + A12:2011 + A2:2013</b>

Jahr der CE-Kennzeichnung:  
Year of CE marking:  
Annee du marquage CE:

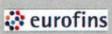
**2017**

Spreitenbach, 17.08.2018



Dr.-Ing. Ronald Rohner  
CEO NTI AG

**11 CB Test Certificate**

		Ref. Certif. No. <b>CH-10066</b>
IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME		
<p><b>CB TEST CERTIFICATE</b></p>		
Product	Power Supply	
Name and address of the applicant	NTI AG Bodenaackerstr.2, 8957 Spreitenbach Switzerland	
Name and address of the manufacturer	NTI AG Bodenaackerstr.2, 8957 Spreitenbach Switzerland	
Name and address of the factory	NTI AG Bodenaackerstr.2, 8957 Spreitenbach Switzerland	
<i>Note: When more than one factory, please report on page 2</i>		
Ratings and principal characteristics	In:100 – 120 VAC, 9 A; 200 – 240 VAC, 4,5 A 50-60 Hz Out: 72 VDC, 6,7 A (S01-72/500-xxx) In:3 x 380 -500 VAC, 2.1 A 50-60 Hz, Out: 48 VDC, 20 A S01-48/1000-xxx) In:3 x 380 -500 VAC, 2.1 A 50-60 Hz, Out: 72 VDC, 13.5 A (S01-72/1000-xxx)	
Trademark (if any)		
Customer Test Facility (CTF) Level used	./.	
Model / Type Ref.	S01-72/500-xxx S01-48/1000-xxx S01-72/1000-xxx	
Additional information (if necessary may also be reported on page 2)		
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005 IEC 60950-1:2005/AMD1:2009 IEC 60950-1:2005/AMD2:2013  <i>National differences:</i> EU Group Differences EU Special National Conditions EU A-Deviations AE, AR, AU, BH, BY, CA, CN, CO, ID, IN, IL, JP, KE, KR, MX, MY, NZ, RU, SA, SG, TH, TR, UA, US, VN, ZA	
As shown in the Test Report Ref. No. which forms part of this Certificate	18-EL-0065.S01, .S02	
This CB Test Certificate is issued by the National Certification Body		
 Electrosuisse Product Testing AG Luppenstrasse 3 8320 Fehraltorf SWITZERLAND		
Date: 2018-07-10	Signature: Martin Plüss	

T01\_V01

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