

## Stepping motor control amplifier board series SE

- Electrical and mechanical compatible with other STÖGRA power amplifier drives
- Short circuit protected
- Temperature protected
- Supply voltage range from 24 VDC to 240 VDC
- Current range from 0 A/Ph. to 12 A/Ph.
- 200,400, 500, 800, or 1000 steps/revolution
- Automatic current reduction

### Dimensions

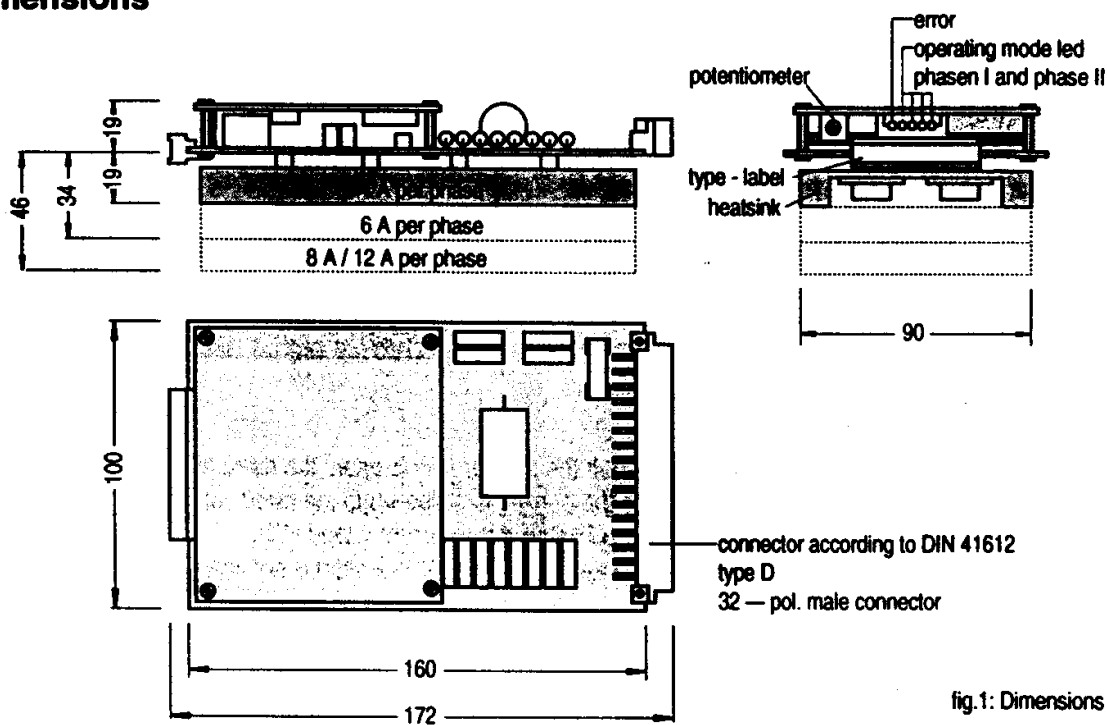


fig.1: Dimensions

### Specifications

#### Protection of the device

protection IP 00 (DIN 530)  
protection against shortcircuit (in the motor phases),  
overtemperature and undervoltage

#### Weight

nominal current	1 A/Ph	4 A/Ph	6 A/Ph	8 A/Ph	12 A/Ph
weight	0,2kg	0,52 kg	0,77 kg	1,1 kg	1,1 kg

#### Ambient conditions

ambient temperature : 0° to 50°C  
max. heat sink temperature : 85°C  
forced draft : necessary for  
power amplifier cards with nominal current 8A and 12 A

#### Noise radiation

by correct installation and shielding or/and  
filtering of the lines and signals  
according to EN 55011 class B

## Selectable adjustments

series SE

All adjustments can be made via (marked) solder-bridges on the backside of the logic board.

marking	signification	state	standard adjustment
L-H	switching LOW-HIGH active	L open, H closed: HIGH - active L closed, H open: LOW - active	H closed, L open
R	automatic current reduction	open: automatic current reduction 50% at stand still closed: no current reduction	closed
8	switching of step angle	closed: 800 steps open: 400 steps	according to order

On boards of the series SE 500... and SE 1000... the marking »8« must stay open.

### HIGH - active

( marking »L« open, »H« closed )

A voltage of 3,5 V to 24 V at a input activates the input.

Input »pulse« : The rising edge is significant.

standard adjustment is HIGH - active.

### LOW - active

( marking »L« closed, »H« open )

Closing the marking »L« and opening the marking »H« makes all inputs Low - active.

0V at an input activates the input.

Input »pulse« : The falling edge is significant.

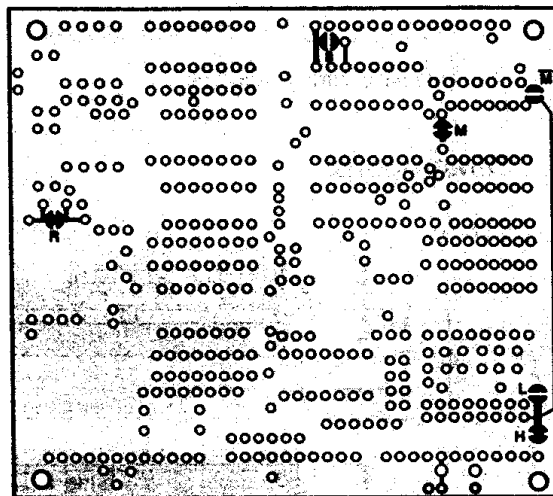


fig.2: Adjustments

### Automatic current reduction

( marking »R« closed )

The rated duty current is set by the potentiometer. If the marker »R« is open, the rated motor current will be automatically reduced by half. With the first arriving pulse the current is pulled-up to the rated current. 20 ms after the last arriving pulse the phase current will be reduced by half to the rated current (stand still).

Standard deliverd: The marker »R« is closed, the automatic current reduction is not activated.

### Supply voltage

**Maximum allowed supply voltage :** Nominal voltage of the power amplifier card plus 15% (mains fluctuation !).

The Nominal output voltage of the power pack unit ( = supply voltage of power amplifier card ) may not be higher than the nominal supply voltage of the power amplifier card.

E.g.: Calculation of a power pack unit for a SE 400.08.120 :

$$\text{Output voltage of power pack} = 120 \text{ VDC (and not (!) } 138 \text{ VDC} = 120 \text{ VDC} + 15\%)$$

In case of connections between power pack unit and power amplifier card, which are longer than 0,5 m, there has to be installed a capacitor of min. 1000µF direct at the power amplifier card (Inputs Supply voltage - GND ).

## Current adjustment

Ex factory the amplifier board is adjusted to the nominal current. The motor phase current may be changed. For changing the phase current the board has to be set to a defined state ( give pulse signals to the input »pulse« until only one red LED is illuminated). At two measuring points ( A-B in case of LED 0 or LED 1 respective A-C in case of LED 2 or LED 3 ) on the logic board there can be measured a voltage which is proportional to the adjusted phase current. 300 mV correspond to the nominal current (267 mV in case of amplifier boards with 8 A/Ph. nominal current - see table below). Meaning that on a amplifier board type SE 400.06.85 the phase current is adjusted to 6 A if the Voltmeter shows 300 mV. 225 mV correspond to 4,5 A/Ph. Via the Potentiometer on the frontside of the board the current can be adjusted. If the current reduction is activated, then 150 mV correspond to 100% (resp. 133mV at 8 A cards).

## LED indications

Yellow (F) : Error

- short circuit or
- overtemperature or
- undervoltage

Red (0 - 3) : state of excitation of the phases

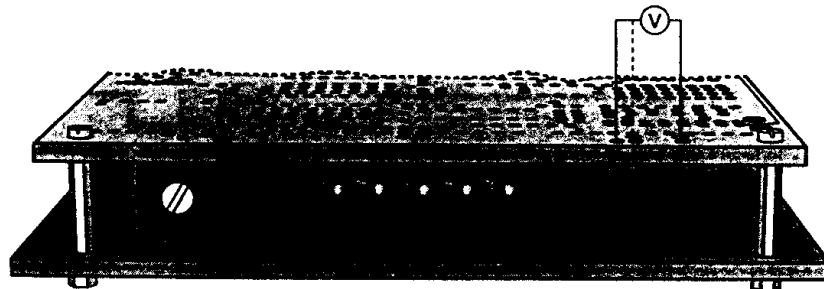
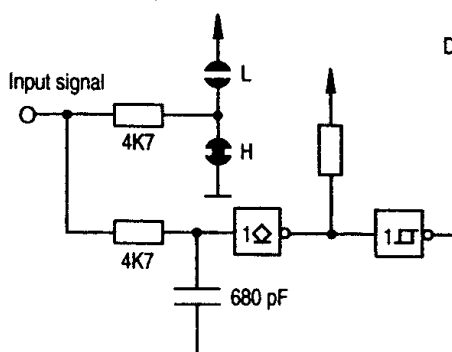


fig.3:current adjustment and state indications

nominal current		1 A/Ph. SE 400.01.24	4 A/Ph. SE 400.04.85	6 A/Ph. SE 500.06.85	12 A/Ph. SE 800.12.120	8A/Ph. SE 1000.08.120			
ⓧ	measured voltage	set phase current				measured voltage			
	%	[A/Ph]	[A/Ph]	[A/Ph]	[A/Ph]	[A/Ph]	[A/Ph]	[A/Ph]	
	375 mV	125%	1,25	5	7,5	15	333 mV	125%	10
	300 mV	100%	1	4	6	12	267 mV	100%	8
	225 mV	75%	0,75	3	4,5	9	200 mV	75%	6
	150 mV	50%	0,50	2	3	6	133 mV	50%	4
	max. adjustable current in ampere / phase (+ 5%)		1.4	5.6	8.4	14.5	11.2		

## Input wiring

Example: HIGH - active



## Input signals

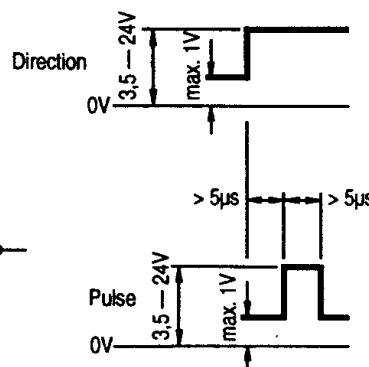


fig.4:Circuits for Input signals

# Pin connection

Si

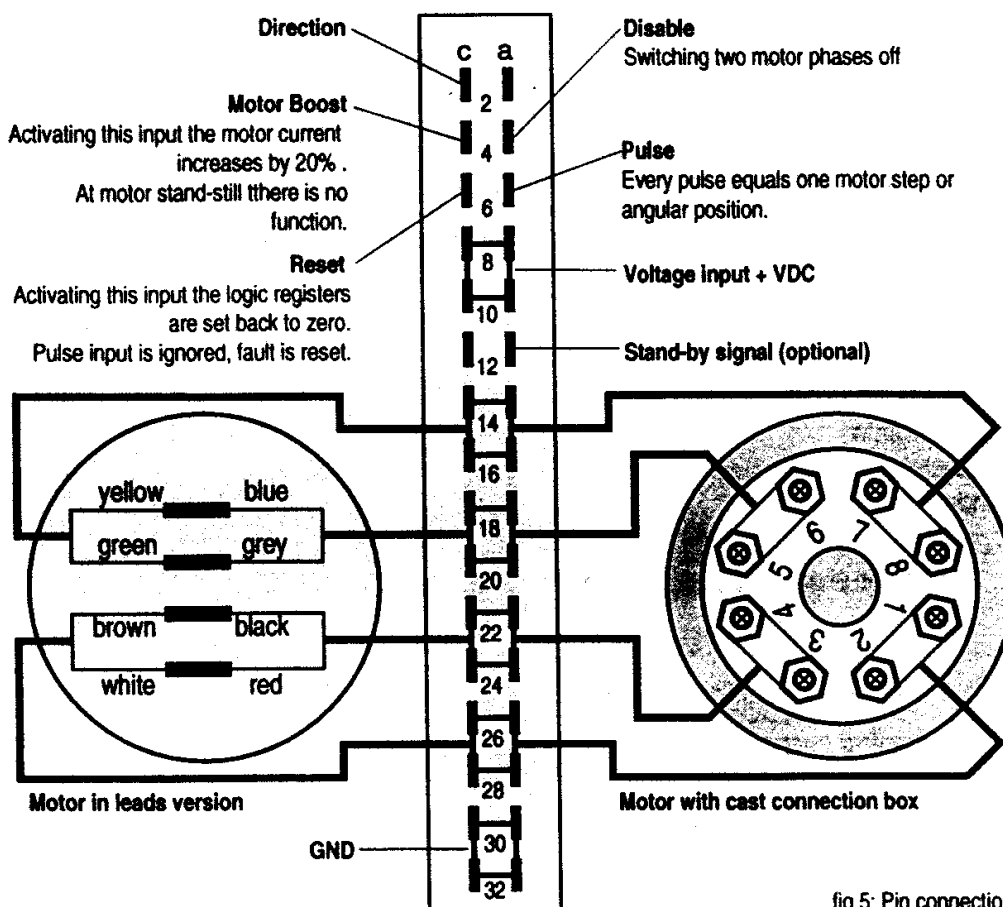


fig.5: Pin connection

Available mother boards type RP/L60 or RP/C60

Non used inputs may stay open, there is no need to connect to an external potential.

Available types: Example: SE 800.06.120 L

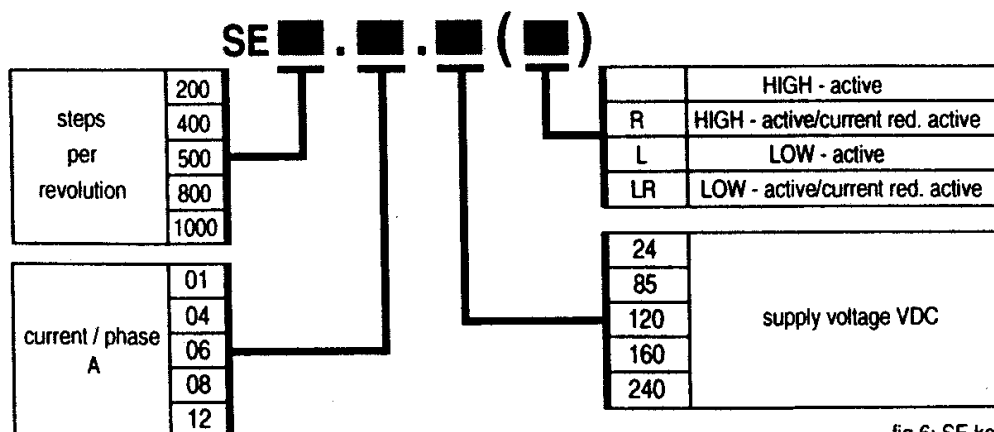


fig.6: SE key

All rights reserved!  
Printed 10.97

STÖGRA ANTRIEBSTECHNIK GMBH

Machtlfinger Strasse 24  
D-81379 München

Tel.: +49-89-15904000  
Fax.: +49-89-15904009

E-Mail: [info@stoegra.de](mailto:info@stoegra.de)  
Internet: [www.stoegra.de](http://www.stoegra.de)