Product description

Type : MSP- FAST CURRENT CONTROLLER

Berlin , 10.03.2000

A) General Information

The MSP drive is a fast 4 quadrant current controller for use with electronic DC permanent magnet (trapeze) motors . The drives employ the well known Pulse Wide Modulated (PWM) system for accurate control of motor torque and operate with an efficiency better then 98%.
The system is designed to stand alone in a customers cabinet in one or multi axis way.
The output stage requires a DC BUS voltage of between 30 and 45 (85) VDC. The control electronics drive their power from an auxiliary 24 V DC supply.
The MSP drive includes the following parts:

- 3 phase power stage to drive a trapeze motor
- current amplifier and current sense
- start up , PWM , Hall sensor and protection/ error logic
- power supply +/- 15 and 5 V (from 24VDC level)
- ballast (Bleeder) system

The set value is an analogue voltage of +/- 10 V (differential input)

B) Motor types

The MSP amplifier can drive any type of electronic DC permanent magnet (trapeze) motors, especially Mavilor™- types. In any case we are able to adapt the motor with a PLA , which can be placed on a socket.

C) CNC or Computer Controller

Any control that provides an analogue (10 V) output is able to work with this drive. The very short response (delay) time is granting a good result and will give you a high dynamic solution.

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Technical Specs	MSP 0308	Possible Technical Specs
1 Mechanics		
dimensions	225 x 95 x 40	175 x 90 x 30
weight (without heat sink)	300 g (190 g)	
mounting	heat sink	in accordance to customers request
connector system	AMP connector	AMP connector
EMC	tested	
Vibration and shock	tested	
2 Power stage		
DC input voltage	24-45 V (max. 48 V)	12-85 V
rated voltage	35 V	24,48 or 65-75 V
rated current	7 A	1-10A
peak current	7 A	10-20 A
required inductance	0,74 mH (min.)	
chopper frequency	12 kHz	8-20 kHz
frequency in motor windings	24 kHz	16-40 kHz
powerstage protection	over voltage/over current	over temperature over voltage/over current
Fuse F 2	8 A	2-10 A
3 Braking system		
switch-on voltage	50 V +/-0,3	30-90 V
switch-off voltage	adjusted	adjusted
rated power	8 W	8W (or external 50 W)
peak power	350 W	700 W
max. power control	yes	yes
4 Electronic Supply		
DC input voltage	24 V +/- 10 %	24 V +/- 10 %
power consumption	ca. 130 mA	ca. 130 mA
Fuse F1	1A	1 A
5 Controller Type	PI current controller	PI current controller speed controller (option print)
set value	analogue +/- 10V	analogue
input resistance	> 50 K Ohm	10 - 50 K Ohm
current monitor	1 V = 1,25 A	10 V = Ia max
bandwidth	≥ 3 kHz	≥ 3 kHz
signal delay	≤ 100 µs	≤ 100 µs
Control Signals		
drive healthy signal	open-collector optocuppling	open-collector optocuppling
enable	+ 5 V	+ 5 V (+ 24 V) positive logic
LED display	green and yellow LED on = drive is OK	
green LED H4 "dark"	over current/voltage or insufficient internal electronic voltage	
yellow LED H3 "dark"	motor temperature to high or Hall system failed	
operating temperature	0.....45 °C	
storage temperature	-10.....+60 °C	

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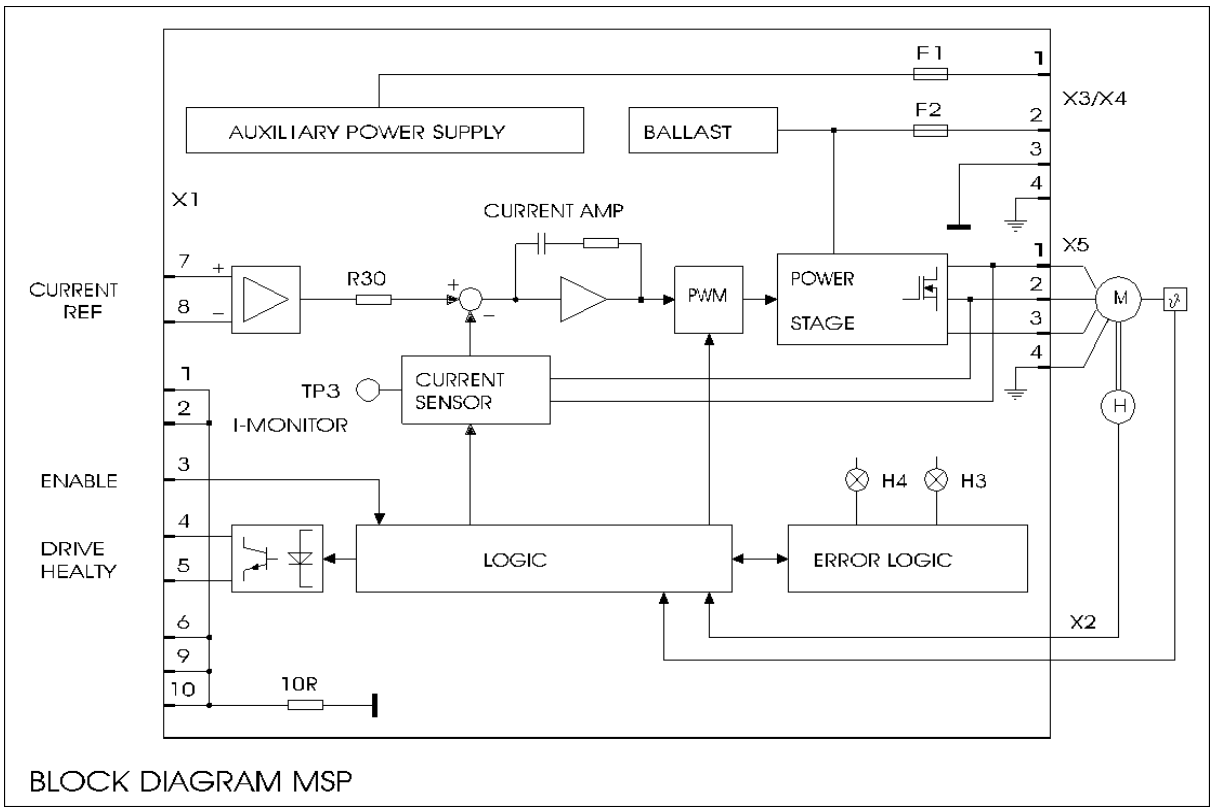

BLOCK DIAGRAM MSP

PIN	Connector	Function	Remark
	X1	**Control-signals**	
1/2		GND	
3		Enable	+ 5 V
4		O.K.	
5/6		GND	
7		I (+)	Current input command
8		I (-)	Current input command
9/10		GND	
	X2	**Motor Hall Sensor**	
1		Hall 1	
2		Hall 2	
3		Hall 3	
4		+ 5 V	Hall supply
6/7/8		GND	Signal and supply
	X3 & X4	**Power input**	X3/X4 parallel
1		+ 24 V	electronic suppy
2		+ Ucc	Power
3		0V	common for power and electronic
4		PE	
	X 5	**Motor (Power)**	
1		Phase 1	
2		Phase 2	
3		Phase 3	
4		PE	

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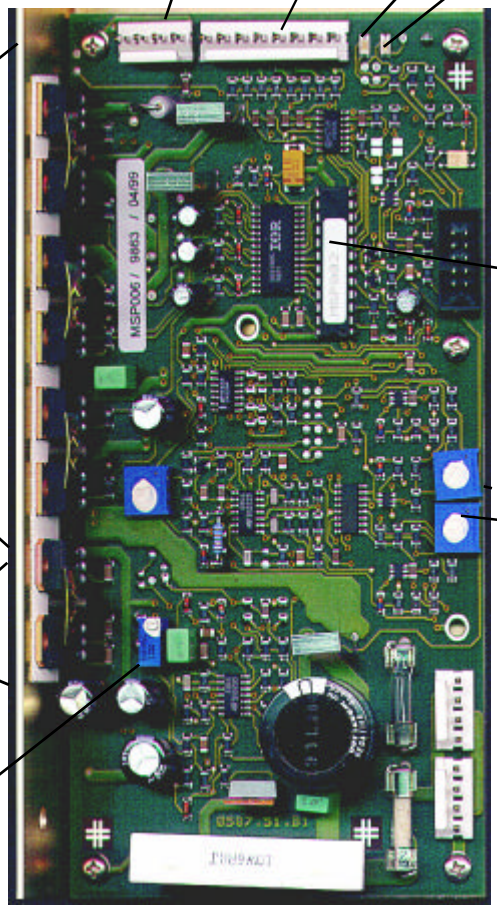
Components Location



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