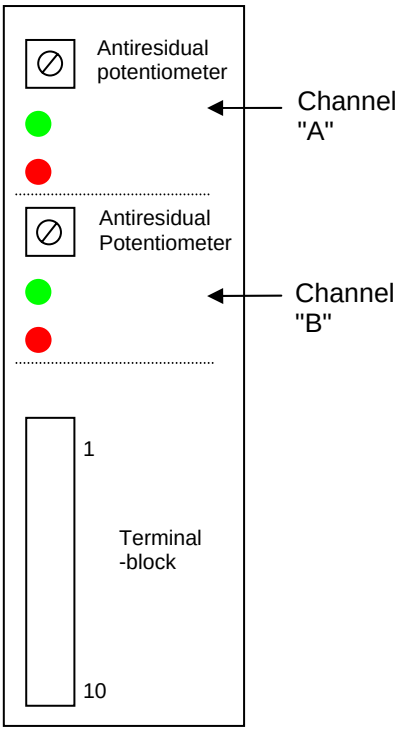
MCS2000-DRV2	Dual Channel driver 24 – 48 VCC
MCS2000-PS	Power supply 24 VDC
MCS2000-PSDRV2	PS and DRV2

User Manual

FRONT FACE OF THE DUAL CHANNEL DRIVE DRV2



Functionality:

This drive is fully interchangeable with the DRV and DRVH

Each channel is fully independent

- Status diagnostic with 2 LED's
- Power supply 24 to 48 VDC
- Protected against inversion of the power supply polarity
- Analogue input set point input with internal limitation to 10 V
- 10 V set point voltage corresponds to an output DC voltage equal to the input (power supply voltage).
- The "nominal" output voltage is de 24 VDC. Over this value we do an integration of the U^2t. The upper limit corresponds to a voltage of 48 V during 1 minutes. Once this over excitation period is over, the system returns automatically to the limited 24 VDC. This is an efficient protection of your brakes, independent of their internal resistance..
- The over excitation is achieved by using a 48 VDC power supply and a set voltage higher than 5 V (5 to 10 V depending on the over excitation required).

- Maximum output current continuous duty 4.5 A per channel
- Overload capacity to max 6 A per channel for 30 s to be followed by max 3 A for a period of min 120 s
- Protected against output overload.
- Output stages are individually protected against over temperature
- Protection against short-circuit during operation and at power up.
- By a short circuit, the output of the drive will locks for 10 ms and be reactivated. I fthe problem remains after 4 such cycles, the drive will trip.
- Once the drive trip, the RESET is achieved only by power off and on(ON / OFF)
- Individual setup of the antiresidual using a potentiometer.
    - Left position of the potentiometer (CCW) : antiresidual = 0 V
    - Right position (CW) : antiresidual = 10% of the power supply voltage.
    - To set the antiresidual, put a jumper on the corresponding analogue input (terminals 1-2 for channel A, resp. terminals 3-4 for channel B)
- Maximum operating temperature 40°C

TERMINALS of the DRV2

Terminal #	Marking	Description
1	InA 0-10V	Analogue set point input for channel "A"
2	0V	0V of the analogue input "A" (Internal limitation to 10V)
3	InB 0-10V	Analogue set point input for channel "B"
4	0V	0V of the analogue input "B" (Internal limitation to 10V)
5	BRK A+	Output channel "A" +
6	BRK A-	Output channel "A" -
7	BRK B+	Output channel "B" +
8	BRK B-	Output channel "B" -
9	- DC POWER	Power supply 24-48VDC -
10	+ 24-48 V	Power supply 24-48VDC +

THE 2 LED's AND THEIR SIGNIFICATIONS

Each channel A or B has a set of 2 LED's on the front face. The information's hereunder refer individually to each channel, i.e. one can be OK and the other one in overload…

LED		Flashing cycles of the LED's		
Green	Red	Green	Red	
○	○	Off	Off	The drive is OFF
Normal operation				
●	○	On	Off	The drive is ON, ready
●	○	 1.5s ON/0.5s OFF	Off	The drive is ON, operating in anti-residual mode
Over-excitation operation				
●	●	On	 0.5s ON/1.5s OFF	Drive over excitation possible. Limitation to 60 s maximum at full voltage
●	●	On	 1s ON/ 1s OFF	Set point is in over excitation mode, but the time limit of 60 s is exceeded. Maximum output voltage limited to 24 VDC
●	●	On	 0.5s ON/2.5s OFF	Normal operation, but the over excitation is not possible. The integral U^2t is still too high and in process to decrease. Caution: This information disappears if the system switches to anti-residual mode. The integral U^2t still needs to decrease before a new over-excitation is possible.

Failure mode				
○	●	Off	On	Internal initialisation error at power ON. Fatal error – return the drive for repair • *OUTPUTS LOCKED - Drive tripped*
○	●	Off	1.0s ON/0.5s OFF	Short circuit or overload in operation. • *OUTPUTS LOCKED – Drive tripped.* • To RESET the drive you need to power it OFF an ON again.
●	●	0.5s ON/0.5s OFF	0.5s ON/0.5s OFF	Internal auxiliary power supply out of tolerances • *OUTPUTS LOCKED* • To RESET the drive you need to power it OFF an ON again or when the fault disappears
○	●	Off	0.5s ON/0.5s OFF	Internal auxiliary power supply failure or drive power supply > 48 VDC +10%. • *OUTPUTS LOCKED* • To RESET the drive you need to power it OFF an ON again or when the fault disappears
●	●	2x 0.5s ON/0.5s OFF + 2,5s OFF	2x 0.5s ON/0.5s OFF + 2,5s OFF	Output stage temperature too high. The output will be locked in 30s. During this time frame the drive is in normal operation mode.
●	●	0.5s ON/0.5s OFF	0.5s ON/0.5s OFF	Temperature of the output stage too high. • *OUTPUT LOCKED* • Auto RESET when the temperature has decreased
Channel A ● Channel A ● Channel B ● Channel B ●		0.5s ON/1.5s OFF		Ambient temperature too high. The output will be locked in 30s. During this time frame the drive is in normal operation mode.
Channel A ● Channel A ● Channel B ● Channel B ●		1s ON/2.5s OFF		Ambient temperature too high. • *OUTPUT LOCKED* • Auto RESET when the temperature has decreased

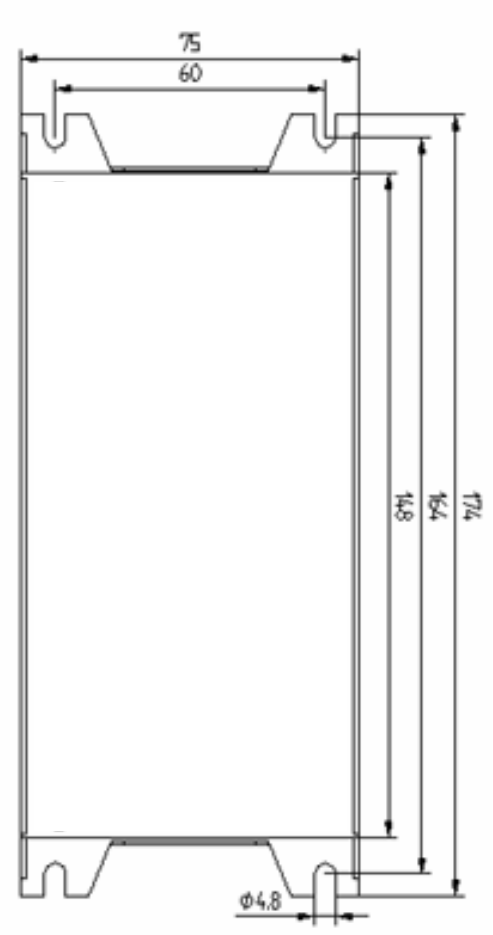
TERMINALS MCS2000-PS and PSDRV2 (right part when facing the front of unit)

~	AC input	100 to 260 VAC auto-range
~	AC input	100 to 260 VAC auto-range
Earth	Main earth, tied to housing	
+24 V	2 terminal output internally connected	24 VDC / 3,1 A
0V	2 terminal output internally connected, tied to housing	

The power supply module PS used is the one as used in the former PSDRV and its output power is limited to 3.1 A by 24 VCC.

With this power supply you can't get the peak performances of the DRV2. To achieve those peak performances we suggest to use an outsourced power supply 24 or 48 VCC, maximum current 12 A is both channel are used simultaneously.

DIMENSIONS



Depth 185 mm

CROSS-REFERENCES TO THE TERMINAL OF THE DRV

DRV	DRV2
Ref 10V	Doesn't exist
0V	Doesn't exist
InBxV	Doesn't exist
InB 0-10V	Terminal 3
0V	Terminal 4
InAxV	Doesn't exist
InA 0-10V	Terminal 1
0V	Terminal 2
BRK COM	Terminal 8
BRK B+	Terminal 7
BRK COM	Terminal 6
BRK A+	Terminal 5
+ 24 V	Terminal 10
0V	Terminal 9

Caution : On the DRV2, in the opposite to the former DRV, the terminals 4, 2 and 9 are not connected together inside of the drive.

Subject to alteration without prior notice

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