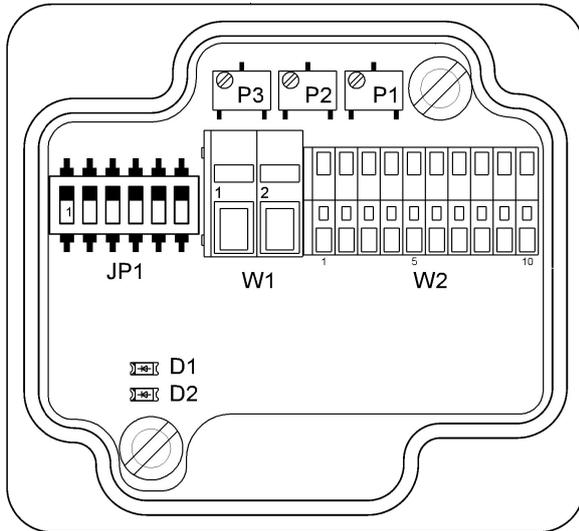


**Pin Assignment EM-MOTOR with Terminal Box KL-C2**

**3.0**



**Description**

	<b>Designation</b>	<b>Function respectively feature</b>
D1	Green LED	Ready
D2	Red LED	Current overflow/ Low Voltage
JP1	DIP-Switch	Internal Control of Motor functional settings
P1	Trimmer	Internal Current Push <sup>(*)</sup>
P2	Trimmer	Ramp-up and Ramp-down time
P3	Trimmer	Internal speed rated value setting
W1	Terminal	Power Supply Input
W2	Terminal	External Control of Motor functional settings

<sup>(\*)</sup> The factory setting of the maximum Current / Torque value can be **increased** by this function. This function must be applied only short terms.

**Safety Instructions:**

- The installation and operating may only be done by capable and qualified personal.
- First operation may be done at no-Load of the drive.
- The drive may exclusively be operated at low-ripple DC-Voltage. Permissible voltage values according type plate +10% .
- Changing the direction of rotation is exclusively possible by setting the signal line (W2-7) or DIP-Switch JP1-3.  
**Never reverse the power supply input lines (danger of destruction).**
- Functions set "ON" by DIP-Switches JP1-4 must not be overlapped by signal through the respective external terminal lines W2.
- Electronic drives of type EM have by standardization an internally fixed adjusted torque respectively current limitation. This protective function is reducing the motor current when highly exceeding the rated torque. **Permanent operation in this state is not allowed**, as the protective function takes place only beyond rated operation values.

**Operating Instructions**

- 1. Checking Off-Settings :**  
All DIP-Switches remain in position „OFF“.  
Signal-lines on terminal W2-1 up to W2-10 are power free.
- 2. Connecting Power lines to Terminal W1:**  
W1-1: (+VM) DC-Voltage according Type Plate +10%  
W1-2: (GND) Power Ground
- 3. Drive Operation**  
The drive may either be operated by means of DIP-Switches JP1 (**see chapter 3a**) or by applying external voltage (**see chapter 3b**) to the signal lines on terminal W2. As the DIP-Switches JP1 and the Signal Lines on W2 are connected with each other, it is only allowed to use the external Signal Lines W2 when the equivalent DIP-Switches JP1 are set „OFF“.

### 3a Operation by means of DIP-Switches JP1

Switch	Position „ON“	Position „OFF“ <sup>(1)</sup>
JP1-1	Drive Enable	No Enable
JP1-2	Short Circuit Brake inactive	Short Circuit Brake active
JP1-3	Direction of Rotation CCW	Direction of Rotation CW
JP1-4	<b>Internal</b> Speed setting	<b>External</b> Speed Setting
JP1-5	Ramp <b>active</b>	Ramp <b>inactive</b>
JP1-6	Internal current intensification by means of P3	Standard current limitation. Intensification possible by means of external signal line W2-4.

The drive turns if following DIP-Switches are in position „ON“:  
 JP1-1 (Drive Enable)  
 JP1-2 (Brake deactivated)  
 JP1-4 (Internal Speed Setting)

Direction of rotation can be changed by switching switch JP1-3. Due to the high dynamic of the drive, we recommend to perform changes in direction of rotation only in standstill, to avoid heavy wear or damages of attached mechanics as e.g. gears.

<sup>(1)</sup>Attention: In position „OFF“, functions can be controlled externally by means of signal lines of terminal W2.

For starting the drives under heavier conditions, dematek-drives provide a torque respectively current amplification input (JP1-6 res. W2-4). Depending on the degree of the amplification this function must only be turned on for short terms (few seconds to few minutes).

The speed (rpm) is pre-adjusted according to the nominal speed declared on the type plate. It can be re-adjusted by means of trimmer P3.

### 3b Operation by means of external Control, Terminal W2-1 to W2-10

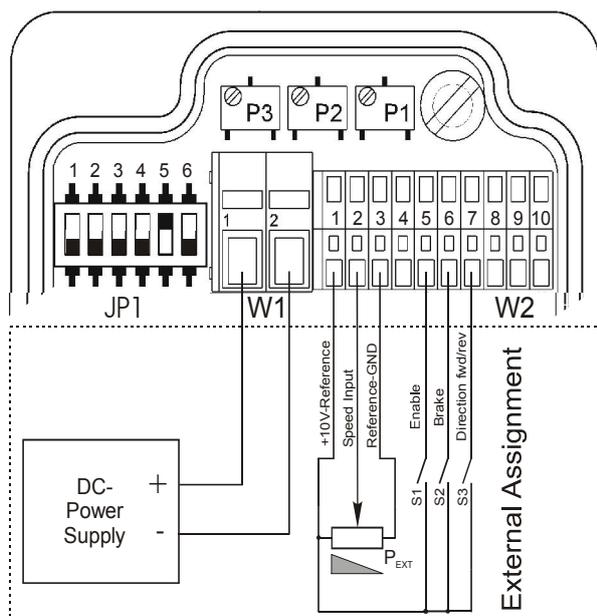
Terminal	Function
W2-1	+10.0V Reference Voltage for speed setting, Load: 10mA max.
W2-2	Analog Input for speed setting 0-10V
W2-3	reference Voltage Ground (same potential as Supply voltage Ground)
W2-4	Current Intensification
W2-8	Failure Output for Over Current/ Low Voltage <sup>(3)</sup>
W2-9	Impulse Output A, 2 Impulses per revolution (Motor Shaft) <sup>(4)</sup>
W2-10	Impulse Output B, 2 Impulses per revolution (Motor Shaft), 120° Phase-Shift to Output A <sup>(4)</sup>

Terminal	Function at „High“-Level (12-24V)	Function at „Low“-Level (< ca. 5V)
W2-5	Drive Enable (active)	No Enable (standstill)
W2-6	Brake deactivated, drive idle	Short Circuit Brake activated <sup>(5)</sup>
W2-7	Direction of rotation CCW	Direction of rotation CW

<sup>(3)</sup> Open Collector Output 45V 100mA max.

<sup>(4)</sup> Open Collector Output, optional Open Emitter-Output

<sup>(5)</sup> Short Circuit Brake only functional with applied supply voltage.



**Picture: External Pin Assignment. Basic Assignment**

**Important:** Switch JP-1 to JP1-4 and JP1-6 remain „OFF“, JP1-5 turned „ON“.

After closing Switch S1 and S2 the motor runs with a speed(rpm) proportional to the adjusted input voltage at the speed input. A voltage of 10V is equivalent to the nominal speed printed on the type plate. the input voltage in the illus-trated example is achieved by a Potentiometer P<sub>EXT</sub> (Value approx. 10kOhm).

**Hint:** The reference GND is connected to the Supply Voltage GND.