

## Control Units MAGTRONIC

### EBS

#### EBS Control Equipment

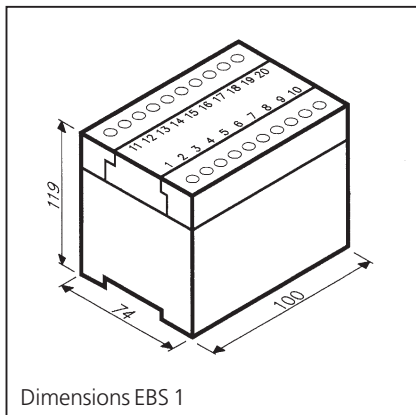
To increase the lifetime of the drive mechanisms, for barriers which have to carry out extremely frequent opening and closing operations (eg. motorway toll gates, large car parks, etc.), the installation of the EBS control equipment is to be recommended. This control equipment is also recommended for fast opening and closing barriers in order to avoid bouncing of the barrier boom.

The EBS control equipment consists of an electronic control unit, which slows the motor by means of limit switches mounted on the barrier output shaft just before the barrier boom end position is reached. Thus the barrier boom decelerates as it approaches the rubber buffers, reducing impact preventing wear.

The EBS control equipment for all barriers in the MSV 3-5 and MTS 6-8 which are controlled directly from external switches and which require torque conversion.

Or for barrier MSV 3 which require braking of the barrier boom in addition to torque conversion.

The EBS 2 control equipment has an electronic timer for torque conversion in addition to the deceleration equipment also suitable to retrofit barriers which are already installed.



#### Electrical Connection

The mains cable must be connected as per the EBS 2 diagram to the terminals 1, 2 and 3 whereas the motor must be connected to the terminals 3, 4, 5 and 6. If required, the operating capacitor for the motor has to be connected to terminals 7 and 8, and the torque conversion capacitor to the terminals 9 and 10.

On the limit switch cable, only the brown and blue wires must be taken to terminals 11 and 12 - S4 -.

The corresponding OPEN/CLOSE - S1 - reversing switch or relay has to be connected to terminals 19 and 20.

Separate OPEN - S3 - and CLOSE - S2 - must be connected to terminals 17-20 and 18-20 respectively.

If no braking device is required at the end positions, omit the limit switch and the connection to terminals 11 and (12).

#### Installation

To control the braking function, a limit switch with two cams must be mounted on the barrier boom shaft. The cams must be adjusted so that the limit switch is operated shortly before the upper and lower end positions of the barrier boom and so a smooth braking action is achieved.

#### EBS 2\* - 100

#### Instructions for internal adjustment

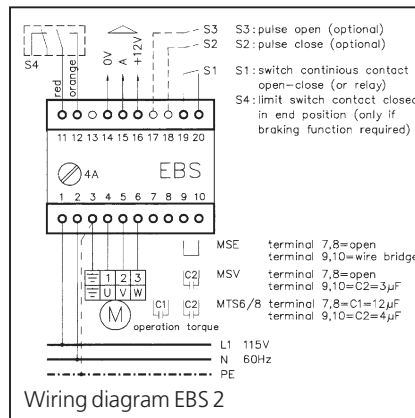
#### General

The adjustment of the torque time is only necessary when the motor must be switched in the end position for power reduction (i.e., barriers MSV 3, MSV 4, MSV 5, MTS 6, MTS 8 and for all motors having a 60 Watt power or more).

In this instance a corresponding torque capacitor must be connected to pins 9 and 10.

The new Magnetic barriers are factory adjusted. In cases of wear and exchange of spare parts, additional adjustment must be made as needed.

This power adjustment is not necessary in the standard barriers MSE 3, MSN 4. On the pins 9 and 10 a wire link is substituted for the capacitor. The operating capacitor (pins 7 and 8) is only necessary in the 110 V versions of barriers MSN/MSV and all versions of MTS 6 and MTS 8, otherwise these pins are left open.



### Setting of operation time (Torque reduction without braking)

No limit switch should be connected to pins 11 and 12 in this function.  
The unit should be powered ON with the boom connected during this operation (allow 15 minutes warm up time):

1. Remove terminal strip containing pins 11–20. Note the right potentiometer and adjust the performance time (picture 4). In accordance with the operation time (i.e., MSV 3R/L-\*\*\* = 1.6 seconds or MSV 4R/L-\*\*\* = 4.0 seconds):

Minimum (counter clockwise):  
approx. 2.5 seconds  
Maximum (clockwise):  
approx. 15 seconds

The switching time should be approximately 2–3 seconds longer than the effective operation time of the barrier arm.

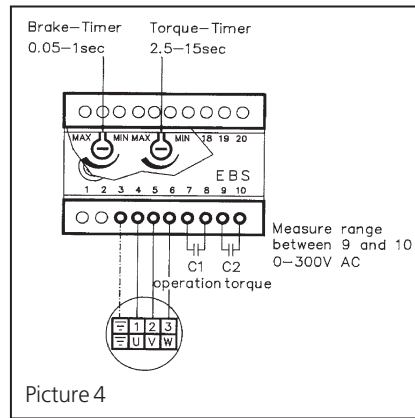
2. Re-mount the terminal.

If the adjustment is made correctly, a clear “clicking” sound of the relay can be heard. This should occur approximately two seconds after the gate reaches its open or closed position. Control can also be made by use of a voltmeter (measurement 0–300 V AC on the pins 9 and 10 is also possible).

### Adjustment of operation time (Torque reduction with brake function)

Pins 11 and 12 must be mounted with a limit switch to achieve this function. The double cam adjustment should initially be set up for tripping the limit switch prior to opening and closing.

1. Remove the terminal strip with pins 11–20 and adjust both potentiometers in the maximum clockwise position.
2. Re-mount the terminal strip.



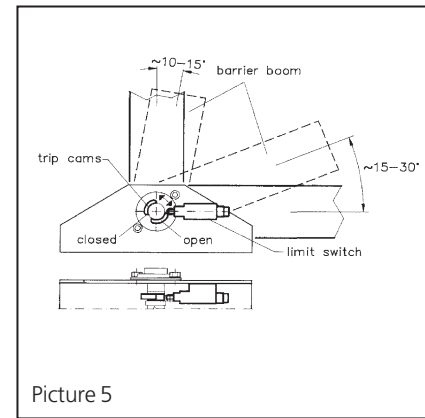
Picture 4

### Positioning the limit switch cam settings

In order to achieve an optimal braking function, the limit switch cam settings must be positioned while the motor is warm (and taking into consideration the velocity and weight of the barrier boom).

- a) closed position: between 15 and 30°
- b) open position: between 75 and 80°

Note: The above is for 90° operation. Minor adjustments will assist in eliminating „bounce“ of the barrier boom.



Picture 5