

# Dimension sheet for EAS<sup>®</sup>-Sp Control Unit Type 009.000.2

(M.0090002.GB)

## Application

This unit is used to monitor, control and to signal overload on pneumatically adjustable overload clutches with switching functions.



## Function

The EAS<sup>®</sup>-Sp control unit monitors the switching condition of the clutch and emits a signal when the set torque is exceeded. It controls pneumatic valves which are used to lock or to open the compressed air supply or to switch from engagement pressure 2 to torque pressure 1.

**Switching valve** opens or closes the compressed air supply to the clutch; connections V2a/V2b

**Pressure valve** switches over between engagement pressure 2 and torque pressure 1  $\mu$ m; connections V1a/V1b

Both connections are resistant against short-circuiting.



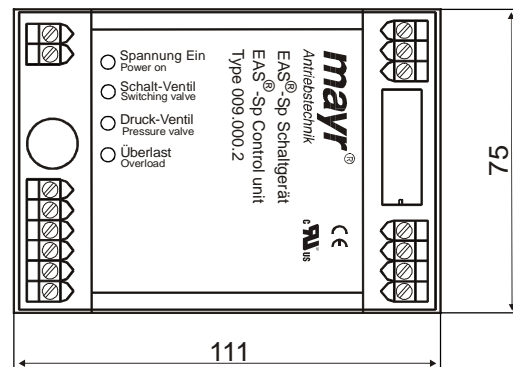
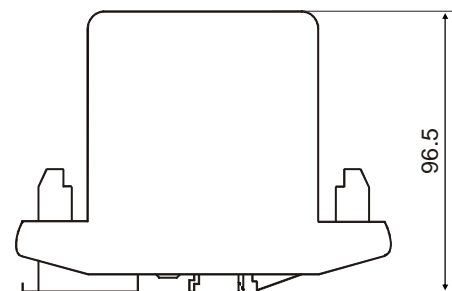
## Electrical Connection

24 V/Gnd	+24 VDC input voltage Please Observe: Installed protection against incorrect polarity! To set up the voltage supply in the EAS <sup>®</sup> -Sp control unit, the correct connection voltage polarity is necessary.
ON	Start button / (+) connection for SPS control.
OFF	Stop button / (+) connection for SPS control.
Gnd1	(-) Connection for SPS control
End	Limit switch signal
Gnd2	(-) Connection for limit switch
12 V	(+) Output voltage for ON/OFF contacts and limit switch
V1a/V1b	Pressure valve 24 VDC
V2a/V2b	Switching valve 24 VDC
14 – 11 – 12	<b>Overload signalling relay</b> , potential-free switch contacts, max. contact load 250 VAC/10 A

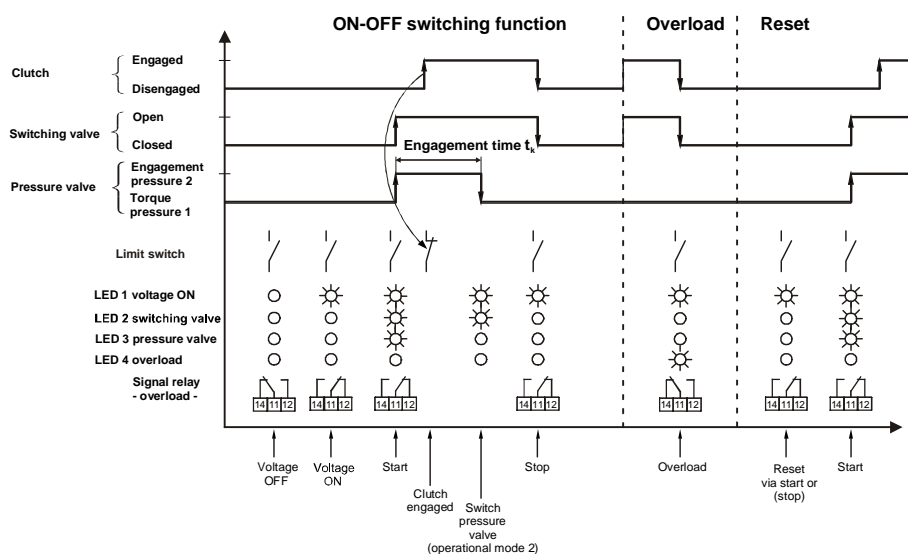


**Please Observe!** Do not apply any external voltage to the 12 V terminal.

## Dimensions (mm)



## Functional Sequence



## Adjustments

### Start - Operation

- 3 2 1  
Single-start (Manufacturer setting)
- Multi-start

### Engagement time with single-start

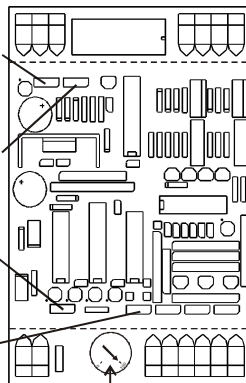
- 0 - 30 sec. (Manufacturer setting)
- 0 - 5 min.

### Engagement time with multi-start

- 0 - 30 sec. (Manufacturer setting)
- 10 sec.

### Operational mode

- 2 (Manufacturer setting)
- 1



Potentiometer 0 - 100 %  
for engagement time  $t_k$



**Please Observe!** To avoid malfunctions, the operational mode is to be observed before making adjustments.

## Engagement Time $t_k$

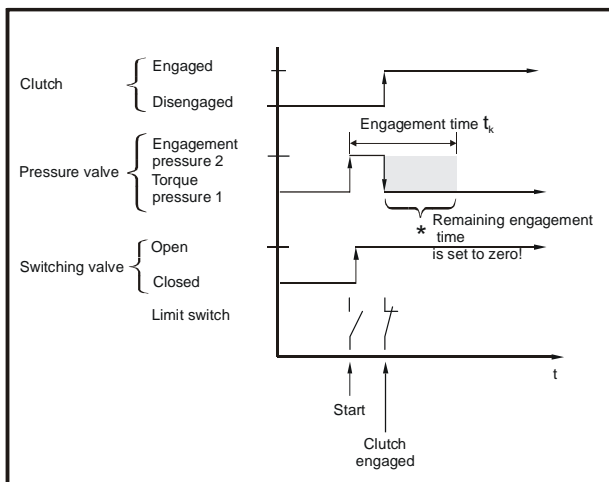
Adjustments of the engagement time  $t_k$  are to be carried out using the external potentiometer 0 - 100 %.

### Adjustment of the engagement times for the following operational conditions:

- 1) **Single-start** (Manufacturer setting)  
Coding bridge: "Engagement time for single-start"  
 (Manufacturer setting) 0 - 30 s  
 (for speeds > 2 rpm)  
 By changing the coding: 0 - 5 min.  
 (for speeds < 2 rpm)
- 2) **Multi-start** (by changing the settings)
  - a. **Single-start-operation (for 1. impulse-start)**  
Coding bridge: "Engagement time for single-start"  
 (Manufacturer setting) 0 - 30 s  
 By changing the coding: 0 - 5 min.
  - b. **multi-start-operation (2. and additional impulses)**  
 (Manufacturer setting) 0 - 30 s  
 By changing the coding: 10 s

## Operational Mode 1 (Please Observe Settings)

Switch over from engagement pressure 2 to torque pressure 1, if the clutch is engaged and the limit switch is actuated. The remaining engagement time is set to zero.

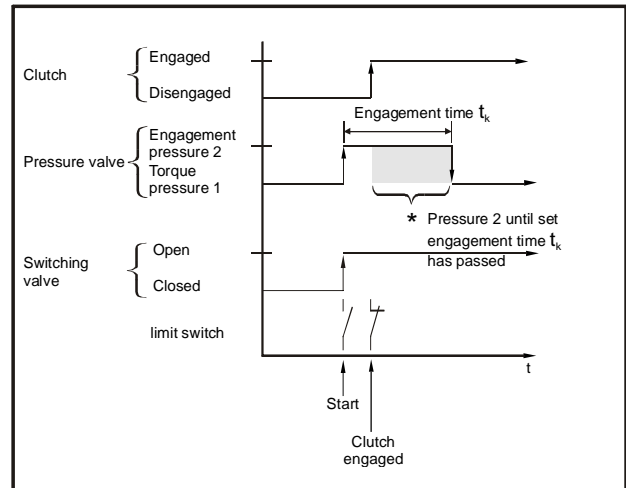


## Operational Mode 2 (Manufacturer setting)

Switch over from engagement pressure 2 to torque pressure 1, when the engagement time  $t_k$  has passed and the clutch remains engaged.



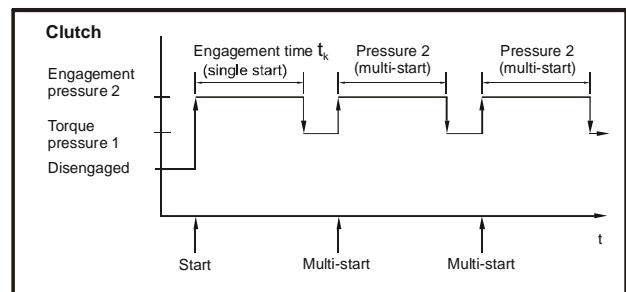
**Please Observe!** Clutch-ratchetting during the engagement time  $t_k$  causes disconnection of the clutch and emission of an overload signal.



## Multi-start (Please Observe Adjustments)

The multi-start allows repetition of the engagement pressure 2 switch-on during functional operation.

Application possible in operational modes 1 or 2 and only with 2-contact function control.



## Installation

The unit is installed using a snap fastener attached to the housing which can be attached to all DIN EN mounting rails.



**Power connections are to be run interference-free!**

The control wires (ON - OFF - Gnd1 - End - Gnd2 - 12 V) are to be laid separately and at a sufficient distance from the high voltage current or pulsating wires (PE / L1 / N).

## Connection Examples

### Control elements / Control functions

Application	Function
	<b>2 contacts</b> <b>Start:</b> close ON contact <b>Stop:</b> open OFF contact
	<b>SPS control</b> <b>Start:</b> +24 V <b>Stop:</b> 0 V SPS control 10 – 30 VDC
	<b>1 contact</b> <b>Start:</b> close contact <b>Stop:</b> open contact

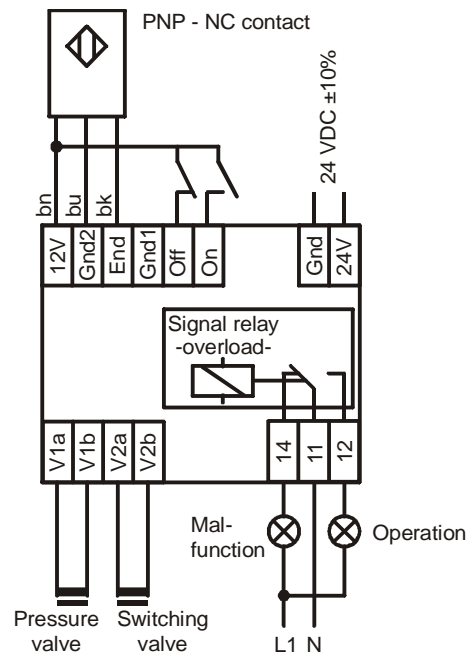
### Limit switch (monitoring)

Application	Function
	<b>1 contact</b> <b>Clutch engaged:</b> contact closed <b>Clutch disengaged:</b> contact open
	<b>SPS control</b> <b>engaged:</b> +24 VDC <b>disengaged:</b> 0 VDC SPS control 10 – 30 VDC
	<b>PNP-NC contact</b> <b>Clutch engaged:</b> sensor undamped <b>Clutch disengaged:</b> sensor damped PNP-NC contact: 3 lead sensors, 10 – 30 VDC



**Warning:** No overload status signal will be emitted if the limit switch is not installed according to the regulations.

## Connection Example



## Technical Data

Input voltage	+24 VDC, +/-10 %
Connection for pressure valve	+24 VDC, 0.5 Amp., resistant against short-circuits
Connection for switching valve	+24 VDC, 0.5 Amp., resistant against short-circuits
Current consumption	max. 1 A/100 % duty cycle
No-load supply power	<1 W
Protection	IP 20
Operating temperature	0 up to +50 °C
Storage temperature	-20 up to +70 °C
Max. clampable conductor cross section	0.14 – 2.5 mm <sup>2</sup> / AWG 26-14
Weight	210 g
Overload signal relay	potential-free contact, max. load 250 VAC/10 A
Conformity markings:	UL-standard UL 508 CSA-standard C22.2 No. 14-M91
Short circuit-resistant coil connections	If short-circuiting occurs, electronic monitoring registers and switches off the affected coil voltage between the coil connections V1a and V1b or V2a and V2b.



**Please Observe!** The customer is responsible for providing the input voltage-side protection fuse.

## Order Example

To be stated on order:	Type
Order number	009.000.2