

# Technical Information A 68-2004-08 EN

## Positioning loop monitoring

## 1 Contrac positioning loop monitoring

The Contrac positioning loop monitoring allows for monitoring the actuator functions in the operating modes

- automatic (AUT)
- manual (MAN)
- rapid traverse

An occurring positioning loop failure deletes the "ready for operation" signal and causes a failure signal. The actuator is locked in its last position and the LEDs on the local control panel display the failure status (alternative flashing). Alternatively this failure can also be signalized as a "high alarm" (analog position signal is forcibly set to > 21.5 mA) or "low alarm" (analog position signal is forcibly set to < 3.5 mA). The graphical user interface saves and displays the reason for the failure in detail.

Speed Monitoring	No
<ul> <li>Standstill Monitoring</li> </ul>	No
<ul> <li>Moves too heavy in End Position</li> </ul>	No
- Wrong Direction	No

Fig. 1: Detailed failure message within the user interface

## 1.1 Reset of positioning loop failure

Contrac allows for various options to reset a positioning loop failure:

- reset at the local control panel of the electronic unit
- reset using the graphical user interface
- reset via a +/- command via the digital input
- variation of analog setpoint (>3%); if this variation exists for longer than 1s Contrac takes this as a drive command and the actuator moves to the new position.

#### 1.2 Activation of positioning loop monitoring

Use the graphical user interface to de- / activate the positioning loop monitoring. It is de-activated with the default settings for the standard actuators and activated for the actuators in explosion-proof design.

Moreover the graphical user interface allows for individual setting of the limit values / response threshold. The default settings for these values are identical for all actuators. Their percentage refers to the adjusted operating range.

# 2 Adjustable options

# 2.1 Switch-off limit value

In the immediate end position range the actuator might move sluggishly due to higher friction, e. g. caused by firmly bonded deposits. Activating this function stops the monitoring in this defined area. The value, entered in the graphical user interface applies for both end positions; i. e. the default value "2%" cancels the positioning loop monitoring between 98%. 100% and between 2% ... 0%.

tpoint Monitoring	Positioning Loop Monitoring			
Positioning Loop	Monitoring 🔽			
	Switch-Off Limit Value	2	%	
	Response Threshold	3	%	
	Limit Value at Standstill	4	%	
	Limit Value for Wrong Direction	4	%	
	Min. Positioning Speed	0.3	%	
	Travel Time Monitoring in End Position	5		

Fig. 2: Screen shot "positioning loop monitoring"

Close to the end positions the actuator functions are then monitored via the adjustable option "Travel monitoring in end position" (see as well chpt. 2.6).

## 2.2 Response threshold

Contrac actuators feature a positioning speed adaptation to the positioning deviation. Since the actuator can move even with creeping speed, this option becomes active only at a noteworthy position deviation. The entered value for response threshold determines the position deviation value, at which the monitoring becomes active (beyond the end position range described in 2.1).

The default value is 3%.

#### 2.3 Limit value at standstill

The position deviation is monitored even if the brake is locked (actuator standstill). If the actuator moves even so, Contrac provides a failure message as soon as the position deviation exceeds adjusted limit value.

The default value is 4%.

# 2.4 Limit value for wrong direction

Contrac monitors the compliance of actual moving direction and incoming command for all operating modes. The default value for the max. permissible deviation is 4%.

# 2.5 Min. positioning speed

Contrac allows for a general speed setting as well as for an individual speed setting for the various operating modes. The Contrac software calculates the positing time depending on the adjusted speed and operating range and expects the actuator to cover a certain distance within a determined time interval. If the actuator does not reach this distance the electronic unit provides a failure signal (provided the function is activated).

The default value is 0.3%.

## 2.6 Travel time monitoring in end position

Since the actuator might move sluggishly in the immediate end position ranges due to higher friction, e. g. caused by firmly bonded deposits, the positioning loop monitoring functions canceled in these position ranges. Define this de-activated range via the user interface (see as well chpt. 2.1).

If the actuator receives a drive command for the opposite direction it must have left this defined range within a predetermined time interval and must have moved into the "usual" operating range with activated positioning loop monitoring.

This time interval for leaving the end position ranges is influenced by the actuator specific start-up delay, the defined switch-off limit value and a non dimensional factor.

Enter this factor in the user interface. The default value is 5.

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