



INDUSTRIKOMPONENTER A/S
En anerkendt partner i Mobil Energi

**HASTIGHEDSVAGTE
EDO**



For mere specifikke oplysninger om disse produkter, og
hvordan de kan dække dine behov, ring venligst

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HASTIGHEDSVAGTE EDO

APPLICATION

The electronic rotational speed monitoring device EDO is applied together with a pulse indicator for monitoring the rotational speed of drives.

The device is intended for use in stationary installations and in vehicles.

Applications other than specified and unauthorised modifications to the device or its components may lead to injury to persons and damage to the device for which the manufacturer is not liable.

Make sure that the intended use is not impaired in any way, even after unexpected outside influence on the device.

“Intended Application” particularly means that any work performed with the device or on the device must be carried out in accordance with the present operating instructions. Only qualified personnel that are familiar with the regulations for the prevention of accidents as well as the standard safety rules are allowed to work on the device.

Observing the intended application protects yourself and prevents damage to the device!

1. DESIGN AND FUNCTION

The electronic rotational speed monitoring device EDO is applied together with a pulse indicator for measuring, monitoring, and controlling drives. The pulses of the indicator are analysed by the speed monitoring device, which signals the low speeding or overspeeding of a defined reference speed.

1.1 Design

The rotational speed monitoring device EDO is delivered in a solid plastic housing (8) for hat-rail mounting. The indicating and operating elements are assigned to the front side of the device.

When there are more than 1,500 pulses a minute the diode lights up permanently.

LED status, orange

Flashing: Pulses of the rotational speed indicator are applied.

Permanently: Number of pulses > 1,500 pulses/min.

LED green (1) lights up: standard operating status.

LED green (1) out: Standstill of plant, no pulse release, or defective pulse indicator or connections.

Off: Standstill of plant, when the pulse releasing device stops directly before the pulse indicator, or when the speed monitoring device has no voltage.

Set button (3)

By operating the set button (3) to output relay (16) can be triggered directly in order to prevent it from dropping during the setting.

Potentiometer run-up delay (4)

Setting the duration of the run-up delay between 0 and 40 seconds.

Reference value setting (5)

This potentiometer serves to adjust the speed monitoring device to the operating speed of the drive.

Pulse Range Switch (6)

By means of this toggle switch the required range of pulses can be set. The switch-off delays listed in table 1, are fixed values depending on the switching.

LED green (1), switching status output relay (16)

LED status, green

On: output relay (16) attracted

Off: output relay (16) dropped

LED orange (2), input supervision

The light-emitting diode flashes with the cycle of the indicator pulses.

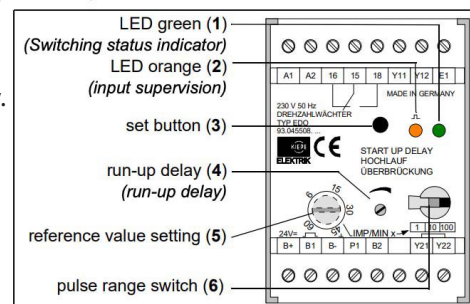


Fig. 1.1 Operating elements of the speed monitoring device

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Switch-off delay

In order to avoid malfunctions caused by jolting drives, the switch-off of the output relay can be delayed. For this, the terminals Y21 and Y22 must be bridged. By means of the jumper (27) on the circuit board (26) three minimum delays can be set: 10; 2,5; and 0,5 seconds.

1.2 Function Principle of the EDO

1.2.1 General

Together with a rotational speed indicator, the rotational speed monitoring device EDO serves to monitor the low speeding, standstill, or overspeeding of a drive. The pulses of the indicator are analysed by the monitoring device, which signals the low speeding or overspeeding of a defined reference speed.

The indicator input (17) (terminals B+, B1, B2, B-) of the speed monitoring device is designed for all common rotational speed indicators complying with the NAMUR regulations (s. fig. 1-1). It is also possible to connect 3-wire pulse indicators (negative switching NPN or positive switching PNP). The indicator input (17) can be supervised by means of the light-emitting diode LED orange (2). Any number of rotational speed monitoring devices can be connected to one pulse indicator.

The output relay (16) is a change-over contact. The current switching status of the relay is indicated by the light-emitting diode LED green (1).

In addition, the rotational speed monitoring device is provided with a pulse output to connect common digital rotational speed counters.

1.2.2 Run-up Delay

In order to start up the plant, the rotational speed monitoring device EDO is provided with the feature run-up delay.

By means of the potentiometer run-up delay (4) the duration of the run-up delay can be set between 0 and approx. 40 seconds (s. fig. 1-1). During this time, the output relay (16) remains attracted, and the plant can be started.

1.2.3 Low speed monitoring/switching function (with run-up delay)

The speed monitoring device can either be applied to the supply voltage together with the drive to be monitored, or the speed monitoring device is applied to the supply voltage permanently. In this event, the monitoring function is released via the start input E1. The output relay (16) is attracted during the set run-up delay time.

Speed monitoring device	the following relay contacts are closed
EDO	15 and 18

When the delay time is reached and the drive maintains a constant operating speed, the output relay (16) remains attracted and the green LED (1) lights up. The orange-coloured LED (2) flashes with the cycle of the incoming pulses.

Low speeding the reference speed

If the set speed is not reached, the output relay (16) drops and the green LED (1) extinguishes (s. fig. 1-2).

Speed monitoring device	the following relay contacts are closed
EDO	15 and 16

Table 1

Position of the switch	Pulse range	Switch-off delay
	pulses/minute	seconds
	switching range	with relay dropping time
1 10 100		
	6 to 60	10 ... 1
	60 to 600	1 ... 0.1
	600 to 6.000	0.1 ... 0.01

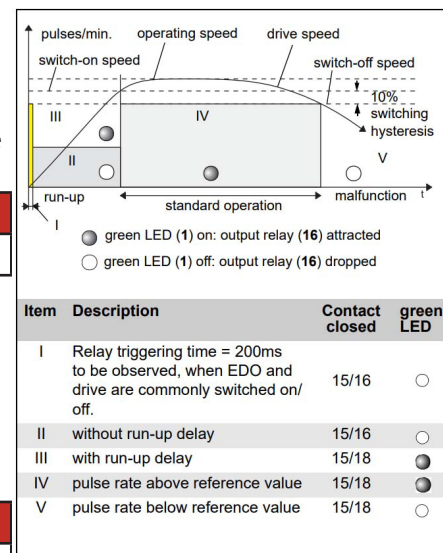


Fig. 1.2 Time Chart for low speed monitoring device

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1.2.4 Overspeed monitoring (without run-up delay)

When overspeeding the set switching speed, the output relay drops and the green LED (1) extinguishes.

The operating mode overspeed monitoring is set by means of a jumper (27) (s. section ###).

Speed monitoring device	the following relay contacts are closed
EDO	15/16

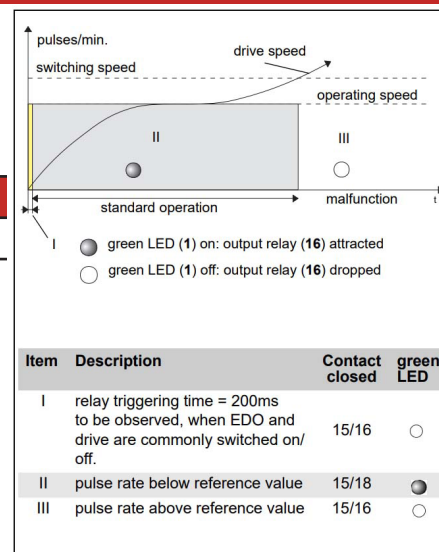


Fig. 1-3 Time chart for overspeed monitoring device

2. TEKNISKE DATA

2.1 Safety Regulations			
VDE 0100	Regulation for mounting power plants with nominal voltages up to 1000 V		
VDE 0113 part 1 (DIN EN 60204)	Machines safety; electrical equipment of machines		
VDE 0113 part 101 (DIN EN 60204)	Machines safety; display, indication, operation		
VDE 0160 (DIN EN 50178)	Equipment for power plants with electronic materials		
Regulations for the prevention of accidents, particularly VBG 4. EN regulations, national standards, directions of the operating authority			
2.2 Supply Voltage			
Terminals A1, A2	Power Consumption	EDO type	Start Input E1 (reference A2)
AC 230 V \pm 10%, 50 - 60 Hz	< 3 VA	93.045 508.001	AC 230 V
AC 115 V \pm 10%, 50 - 60 Hz	< 3 VA	93.045 508.007	AC 115 V
DC 24 V \pm 15%	< 3 VA	93.045 508.005	DC 24 V
DC 48 V to 60 V \pm 15%	< 3 VA	93.045 508.012	DC 48 V to 60 V
2.3 Reference Data			
Switching Point Deviation	< 1%		
Run-up delay	0 to ~ 40s (adjustable)		
Switching hysteresis	~ 10% of operating speed (3% and 30% adjustable via internal potentiometer)		
2.4 Input Data			
Indicator input/pulse input	Terminals B+, B1, B2, B-		
Indicator type	all 2-wire pulse indicators according to NAMUR (EN 50227),e. g. Kiepe type DG or DK NPN-/PNP 3-wire pulse indicator, e. g. Kiepe type EOG or DGP		
Min. pulse duration of the indicator	\geq 2 ms		

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2. TEKNISKE DATA (continued)

2.4 Input Data (continued)		
Pulse ranges (adjustable)	Pulses/minute	Switch-off delay in s (excl. relay dropping time)
1	6 ... 60	10 ... 1
10	60 ... 600	1 ... 0,1
100	600 ... 6.000	0,1 ... 0,01
Start input	Terminals E1 (reference A2)	
Input voltage	93.045 508.001: AC 230 V 93.045 508.007: AC 115 V	93.045 508.012: DC 48 V - 60 V 93.045 508.005: DC 24 V
2.5 Output Data		
Relay output	Terminals 15/16/18	
Type of contact	1 change-over contact	
max. switching voltage (AC/DC)	≤ 250 V (AC) / ≤ 30 V (DC)	
max. switching current (AC/DC)	≤ 28A	
max. switching capacity (AC/DC)	≤ 2000 VA (AC) / 30 W (DC)	
Triggering time of the relay	200 ms (Please monitor the triggering time of the relay in case that the speed monitoring device and a drive are commonly switched on/off.)	
2.6 Switch-off Delay (adjustable)		
Min. delay time	Jumper field on the circuit board	
Fixed values to be set:	approx. 0,5 s / 2,5 s / 10 s (requires an additional bridge between terminals Y21 - Y22)	
2.7 Environment		
Permissible operating temperature	-25 °C til +70 °C	
Permissible Storage temperature	-25 °C til +70 °C	
2.8 Design		
Protection Class	Case: IP 30, according to DIN VDE 0470, part 1 (EN 60529) Terminals: IP 20 , according to DIN VDE 0470, part 1 (EN 60529)	
Protection Class incl. ISO housing	IP65, according to DIN VDE 0470, part 1 (EN 60529)	
Line cross section	max. 2,5 mm²	
Dimensions (w x h x d)	55 mm x 75 mm x 110 mm (+ approximately 10 mm for the setting buttons)	
Fastening	Mounting on 35 mm hat-rails according to EN 50 022 Mounting by fastening screws onto switch boards or in ISO housing	
Built-in position	any	
Weight	approx. 330 g (AC) approx. 250 q (DC)	

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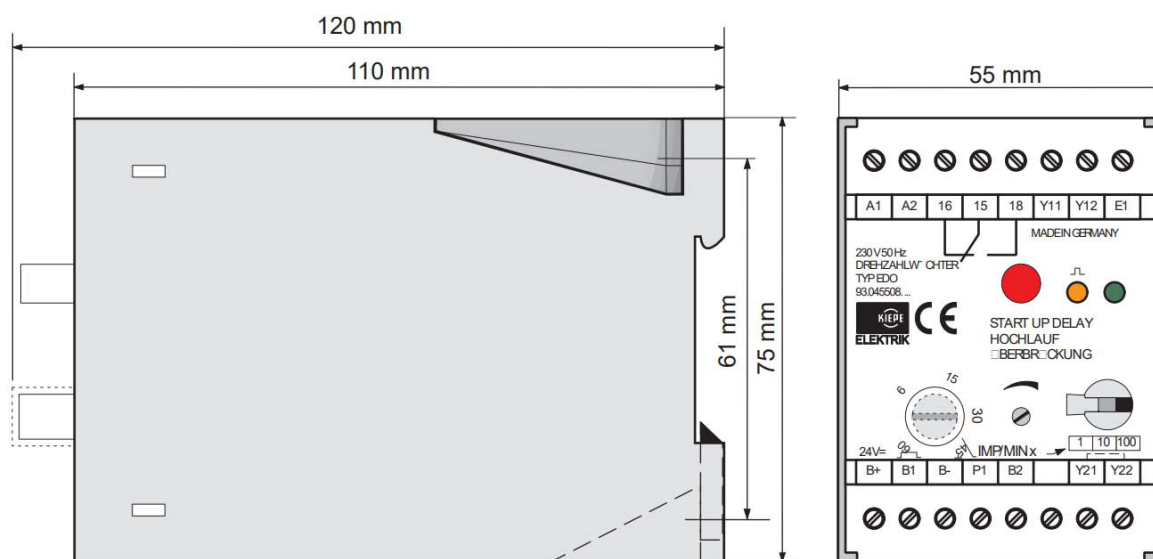
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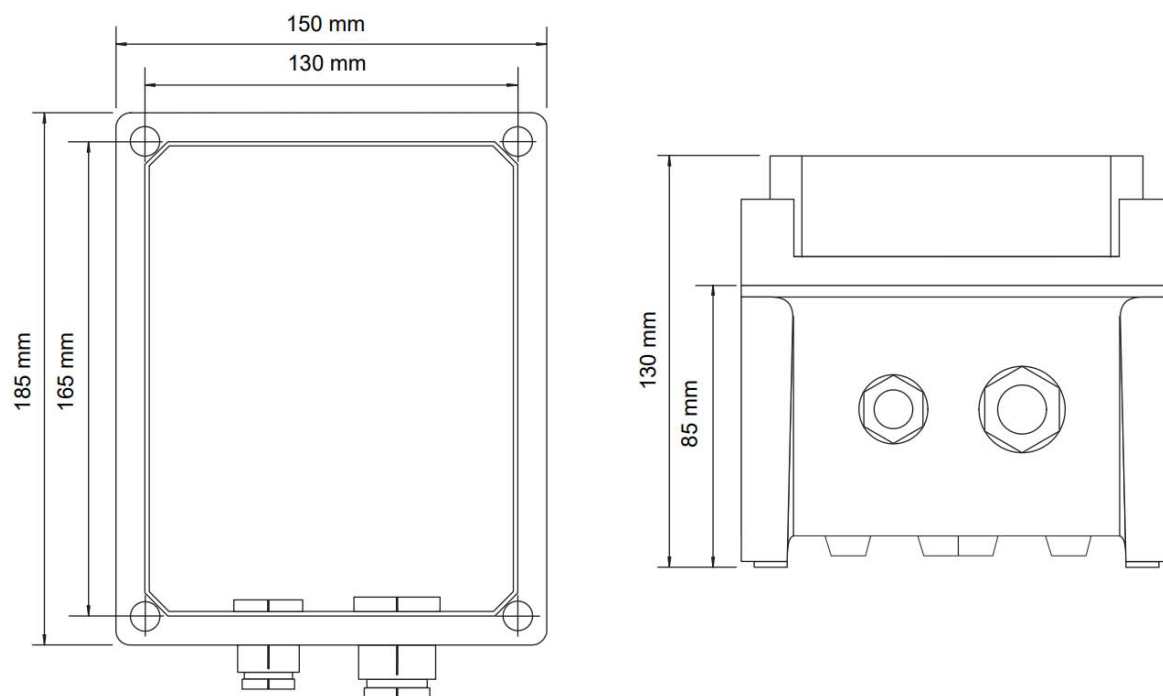
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EDO DIMENSIONS



EDO BUILT-IN DIMENSIONS ISO HOUSING



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