

DIGITAL MONITORING RELAY SPEED MONITORING  
 FROM 0.1 TO 2200 REV/MIN OVERSHOOT AND  
 UNDERSHOOT AC/DC 24 TO 240V DC AND AC 50 TO  
 60 HZ STARTUP DELAY 1 TO 900S TRIPPING  
 DELAYED 0.1 TO 99.9S HYSTERESIS 0.1 TO 99  
 REV/MIN 1 CHANGEOVER CONTACT W. OR W/O  
 ERROR LOG SCREW TERMINAL REPLACEMENT  
 PRODUCT F. 3UG3051

<b>Product function</b>		RPM monitoring relay
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**Measuring circuit:**

<b>Measurable line frequency</b>	Hz	50 ... 60
<b>Adjustable response delay time</b>		
• when starting	s	1 ... 900
• with lower or upper limit violation	s	0.1 ... 99.9
<b>Adjustable response value speed</b>	1/min	0.1 ... 2 200
<b>Input voltage at digital input 1</b>		
• initial value for signal<0>-recognition	V	0
• Full-scale value for signal<0> recognition	V	1
• initial value for signal<1>-recognition	V	4.5
• Full-scale value for signal<1> recognition	V	30
<b>Input current at digital input 2</b>		
• initial value for signal<0>-recognition	mA	0
• Full-scale value for signal<0> recognition	mA	1.2
• initial value for signal<1>-recognition	mA	2.1
• Full-scale value for signal<1> recognition	mA	8.2
<b>Design of input feedback input</b>		No
<b>Design of the sensor</b>		
• at digital input 1 connectable		PNP switching three-wire sensor or mechanical impulse contact with external DC supply (4.5 V ... 30 V)
• at digital input 2 connectable		2-conductor Namur sensor or mechanical impulse contact
<b>Input current at digital input 1 maximum</b>	mA	50
<b>Pulse duration minimum</b>	ms	5
<b>Pulse interval minimum</b>	ms	5
<b>Number of sensor signals per revolution</b>		1 ... 10
<b>Switching hysteresis for rotational speed</b>	1/min	0 ... 99.9

**General technical data:**

<b>Design of the display</b>		LCD
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<b>Product function</b>		
• rotation speed monitoring		Yes
• Standstill monitoring		No
• Fault storage		Yes
• External reset		Yes
• Auto-reset		Yes
• Manual RESET		Yes
• Adjustable open/closed-circuit current principle		Yes
<b>Starting time after the control supply voltage has been applied</b>	ms	500
<b>Response time maximum</b>	ms	100
<b>Buffering time in the event of power failure minimum</b>	ms	10
<b>Relative metering precision</b>	%	10
<b>Accuracy of digital display</b>		+/- 1 Digit
<b>Relative repeat accuracy</b>	%	1
<b>Type of voltage of the control supply voltage</b>		AC/DC
<b>Control supply voltage</b>		
• at AC		
— at 50 Hz rated value	V	24 ... 240
— at 60 Hz rated value	V	24 ... 240
• at DC rated value	V	24 ... 240
<b>Operating range factor control supply voltage rated value</b>		
• at AC		
— at 50 Hz		1.1 ... 0.8
— at 60 Hz		1.1 ... 0.8
• at DC		0.8 ... 1.1
<b>Surge voltage resistance rated value</b>	kV	4
<b>Consumed active power</b>	W	2
<b>Protection class IP</b>		IP20
<b>Electromagnetic compatibility</b>		IEC 60947-1 / IEC 61000-6-2 / IEC 61000-6-4
<b>Shock resistance acc. to IEC 60068-2-27</b>		sinusoidal half-wave 15g / 11 ms
<b>Installation altitude at height above sea level maximum</b>	m	2 000
<b>Conducted interference due to burst acc. to IEC 61000-4-4</b>		2 kV
<b>Conducted interference due to conductor-earth surge acc. to IEC 61000-4-5</b>		2 kV
<b>Conducted interference due to conductor-conductor surge acc. to IEC 61000-4-5</b>		1 kV
<b>Electrostatic discharge acc. to IEC 61000-4-2</b>		6 kV contact discharge / 8 kV air discharge
<b>Field-bound parasitic coupling acc. to IEC 61000-4-3</b>		10 V/m

<b>Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value</b>	V	300
<b>Degree of pollution</b>		3
<b>Apparent power consumption</b>		
• at AC		
— at 24 V maximum	V·A	4
— at 240 V maximum	V·A	9
<b>Ambient temperature</b>		
• during operation	°C	-25 ... +60
• during storage	°C	-40 ... +80
• during transport	°C	-40 ... +80
<b>Galvanic isolation</b>		
• between entrance and outlet		Yes
• between the outputs		No
<b>Suitability for use safety-related circuits</b>		No
<b>Category acc. to EN 954-1</b>		none
<b>Safety Integrity Level (SIL) acc. to IEC 61508</b>		none






#### Mechanical data:

<b>Width</b>	mm	22.5
<b>Height</b>	mm	86
<b>Depth</b>	mm	102
<b>Mounting position</b>		any
<b>Required spacing for grounded parts</b>		
• forwards	mm	0
• Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• downwards	mm	0
<b>Required spacing with side-by-side mounting</b>		
• forwards	mm	0
• Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• downwards	mm	0
<b>Required spacing for live parts</b>		
• forwards	mm	0
• Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• downwards	mm	0
<b>Mounting type</b>		screw and snap-on mounting

Product function removable terminal for auxiliary and control circuit		Yes
Type of electrical connection		screw-type terminals
Type of connectable conductor cross-sections		1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> </ul> </li> <li>• at AWG conductors <ul style="list-style-type: none"> <li>— solid</li> <li>— stranded</li> </ul> </li> </ul>		1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
		2x (20 ... 14)
		2x (20 ... 14)
Tightening torque with screw-type terminals	N·m	0.8 ... 1.2

Outputs:		
Number of NO contacts delayed switching		0
Number of NC contacts delayed switching		0
Number of CO contacts delayed switching		1
Ampacity of the output relay		
<ul style="list-style-type: none"> <li>• at AC-15 <ul style="list-style-type: none"> <li>— at 250 V at 50/60 Hz</li> </ul> </li> <li>• at DC-13 <ul style="list-style-type: none"> <li>— at 24 V</li> <li>— at 125 V</li> <li>— at 250 V</li> </ul> </li> </ul>	A	3
	A	1
	A	0.2
	A	0.1
Operating current at 17 V minimum	mA	5
Continuous current of the DIAZED fuse link of the output relay	A	4
Mechanical service life (switching cycles) typical		10 000 000
Electrical endurance (switching cycles) at AC-15 at 230 V typical		100 000
Operating frequency with 3RT2 contactor maximum	1/h	5 000

Certificates/ approvals:

General Product Approval			EMC	Declaration of Conformity	Test Certificates
 CCC	 UL		 C-Tick	 EG-Konf.	<a href="#">Typprüfbescheinigung/Werkszeugnis</a>

Test Certificates	Shipping Approval			other	Railway
<a href="#">spezielle Prüfbescheinigung</a> <u>n</u>	 DNV	 GL	 LRS	<a href="#">Bestätigungen</a>	<a href="#">Schwingen/Schocke</a> <u>n</u>

#### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<http://www.siemens.com/industrymall>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3UG4651-1AW30>

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3UG4651-1AW30>

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3UG4651-1AW30&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3UG4651-1AW30&lang=en)

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