SIEMENS

Data sheet 3UG4651-1AA30



DIGITAL MONITORING RELAY SPEED MONITORING FROM 0.1 TO 2200 REV/MIN OVERSHOOT AND UNDERSHOOT SUPPLY VOLTAGE: AC/DC 24V DC AND AC 50 TO 60 HZ NO GALVANIC ISOLATION FROM MEASURING CIRCUIT STARTUP DELAY 1 TO 900S TRIP DELAY 0.1 TO 99.9S HYSTERESIS 0.1 TO 99 REV/MIN 1 CO CONTACT W. OR W/O ERROR LOG SCREW TERMINAL REPLACEMENT PRODUCT FOR 3UG3051

Product function		RPM monitoring relay
Measuring circuit:		
Measurable line frequency	Hz	50 ... 60
Adjustable response delay time		
• when starting	s	1 ... 900
• with lower or upper limit violation	s	0.1 ... 99.9
Adjustable response value speed	1/min	0.1 ... 2 200
Input voltage at digital input 1		
• 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
Input current at digital input 2		
• 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
Design of input feedback input		No
Design of the sensor		
• 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
Input current at digital input 1 maximum	mA	50

Changes preserved
© Copyright Siemens AG

Pulse duration minimum	ms	5
Pulse interval minimum	ms	5
Number of sensor signals per revolution		1 ... 10
Switching hysteresis for rotational speed	1/min	0 ... 99.9

General technical data:		
Design of the display		LCD
Product function		
• 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
Startup time after the control supply voltage has been applied	ms	500
Response time maximum	ms	100
Buffering time in the event of power failure minimum	ms	10
Relative metering precision	%	10
Accuracy of digital display		+/- 1 Digit
Relative repeat accuracy	%	1
Type of voltage of the control supply voltage		AC/DC
Control supply voltage		
• with AC		
— at 50 Hz Rated value	V	24 ... 24
— at 60 Hz Rated value	V	24 ... 24
• for DC Rated value	V	24 ... 24
Operating range factor control supply voltage rated value		
• with AC		
— at 50 Hz		1.1 ... 0.8
— at 60 Hz		1.1 ... 0.8
• for DC		0.8 ... 1.1
Surge voltage resistance Rated value	kV	4
Active power consumption	W	2
Protection class IP		IP20
Electromagnetic compatibility		IEC 60947-1 / IEC 61000-6-2 / IEC 61000-6-4
Shock resistance acc. to IEC 60068-2-27		sinusoidal half-wave 15g / 11 ms
Installation altitude at height above sea level maximum	m	2 000
Conducted interference due to burst acc. to IEC 61000-4-4		2 kV

Changes preserved
© Copyright Siemens AG

Conducted interference due to conductor-earth surge acc. to IEC 61000-4-5		2 kV
Conducted interference due to conductor-conductor surge acc. to IEC 61000-4-5		1 kV
Electrostatic discharge acc. to IEC 61000-4-2		6 kV contact discharge / 8 kV air discharge
Field-bound parasitic coupling acc. to IEC 61000-4-3		10 V/m
Insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 Rated value	V	300
Degree of pollution		3
Apparent power consumption		
• with AC		
— at 24 V maximum	V·A	2.5
Ambient temperature		
• during operation	°C	-25 ... +60
• during storage	°C	-40 ... +80
• during transport	°C	-40 ... +80
Galvanic isolation		
• between entrance and outlet		Yes
• between the outputs		No
Suitability for use safety-related circuits		No
Category acc. to EN 954-1		none
Safety Integrity Level (SIL) acc. to IEC 61508		none

Mechanical data:		
Width	mm	22.5
Height	mm	86
Depth	mm	102
mounting position		any
Required spacing for grounded parts		
• forwards	mm	0
• Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• downwards	mm	0
Required spacing with side-by-side mounting		
• forwards	mm	0
• Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• downwards	mm	0
Required spacing for live parts		
• forwards	mm	0

Changes preserved
© Copyright Siemens AG

• Backwards	mm	0
• at the side	mm	0
• upwards	mm	0
• downwards	mm	0
Mounting type		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-section		
• solid		1x (0.5 ... 4 mm2), 2x (0.5 ... 2.5 mm2)
• finely stranded		
— with core end processing		1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
• for AWG conductors		
— solid		2x (20 ... 14)
— stranded		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		
• at AC-15		
— at 250 V at 50/60 Hz	A	3
• at DC-13		
— at 24 V	A	1
— at 125 V	A	0.2
— at 250 V	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:

Changes preserved
© Copyright Siemens AG

General Product Approval			EMC	Test Certificates	
CCC		UL	C-TICK	Type Test Certificates/Test Report	Special Test Certificate

Shipping Approval			other	
DNV	GL	LRS	Declaration of Conformity	other

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&mlfb=3UG46511AA30

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UG46511AA30

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UG46511AA30&lang=en

last modified: 05.05.2015

Changes preserved
© Copyright Siemens AG