



DIGITAL MONITORING RELAY FOR THREE-PHASE LINE VOLTAGE FOR IO-LINK AC 50 TO 60 HZ 3X 160 TO 690V LINE PHASE SEQUENCE, PHASE FAILURE, PHASE ASYMMETRY UNDER- AND OVERVOLTAGE HYSTERESIS 1-20V NETWORK STABILITY TIME TRIGGER DELAY TIME 1 CO CONTACT, SCREW TERMINAL

<b>Product function</b>		Phase monitoring relay
<b>Measuring circuit:</b>		
<b>Type of voltage for monitoring</b>		AC
<b>Number of poles for main current circuit</b>		3
Measurable voltage at AC	V	90 ... 400
<b>Adjustable voltage range</b>	V	90 ... 400
<b>Adjustable response delay time</b>		
• when starting	s	0 ... 999.9
• with lower or upper limit violation	s	0 ... 999.9
<b>Relative setting accuracy</b>	%	0.2
<b>Relative metering precision</b>	%	5
<b>Accuracy of digital display</b>		+/-1 digit
<b>Relative repeat accuracy</b>	%	1
<b>General technical data:</b>		
<b>Design of the display</b>		LCD
<b>Display version LED</b>		No
<b>Product function</b>		
• undervoltage detection		Yes

• Overvoltage detection		Yes
• phase sequence recognition		Yes
• Phase failure detection		Yes
• Phase unbalance		Yes
• Overvoltage detection 3 phase		Yes
• undervoltage detection 3 phases		Yes
• Voltage window recognition 3 phase		Yes
• External reset		Yes
• Auto-reset		Yes
• Adjustable open/closed-circuit current principle		Yes
<b>Starting time after the control supply voltage has been applied</b>	ms	1 000
<b>Response time maximum</b>	ms	450
<b>Type of voltage of the control supply voltage</b>		DC
<b>Control supply voltage</b>		
• at AC		
— at 50 Hz rated value	V	0 ... 0
— at 60 Hz rated value	V	0 ... 0
• at DC rated value	V	24 ... 24
<b>Operating range factor control supply voltage rated value</b>		
• at DC		1 ... 1
<b>Surge voltage resistance rated value</b>	kV	6
<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>Vibration resistance acc. to IEC 60068-2-6</b>		1 ... 6 Hz: 15 mm, 6 ... 500 Hz: 2g
<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>Degree of pollution</b>		2
<b>Ambient temperature</b>		
• during operation	°C	-25 ... +60
• during storage	°C	-40 ... +85
• during transport	°C	-40 ... +85

<b>Galvanic isolation</b>		
• between entrance and outlet		Yes
• between the voltage supply and other circuits		Yes

**Communication/ Protocol:**

<b>Type of voltage supply via input/output link master</b>		Yes
<b>IO-Link transfer rate</b>		COM2 (38,4 kBaud)
<b>Protocol is supported IO-Link protocol</b>		Yes
<b>Amount of data</b>		
• of the address area of the outputs with cyclical transfer total	byte	2
• of the address area of the inputs with cyclical transfer total	byte	4
<b>Point-to-point cycle time between master and IO-Link device minimum</b>	ms	10

**Mechanical data:**

<b>Width</b>	mm	22.5
<b>Height</b>	mm	102
<b>Depth</b>	mm	91
<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>		snap-on mounting
<b>Product function removable terminal for auxiliary and control circuit</b>		Yes
<b>Type of electrical connection</b>		screw-type terminals
<b>Type of connectable conductor cross-sections</b>		

<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 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )  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:**

<b>Number of NO contacts delayed switching</b>		0
<b>Number of NC contacts delayed switching</b>		0
<b>Number of CO contacts delayed switching</b>		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> <li>— at 400 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 A  A A A	3 3  1 0.2 0.1
<b>Thermal current of the switching element with contacts maximum</b>	A	5
<b>Operating current at 17 V minimum</b>	mA	20
<b>Continuous current of the DIAZED fuse link of the output relay</b>	A	4
<b>Mechanical service life (switching cycles) typical</b>		10 000 000
<b>Electrical endurance (switching cycles) at AC-15 at 230 V typical</b>		100 000
<b>Operating frequency with 3RT2 contactor maximum</b>	1/h	5 000

**Certificates/ approvals:**

General Product Approval			Declaration of Conformity	Test Certificates	
 CCC	<a href="#">Manufacturer Declaration</a>	 UL		 EG-Konf.	<a href="#">Type Test Certificates/Test Report</a>

Test Certificates	other	Railway
<a href="#">Special Test Certificate</a>	<a href="#">Confirmation</a>	<a href="#">Vibration and Shock</a>

#### 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**

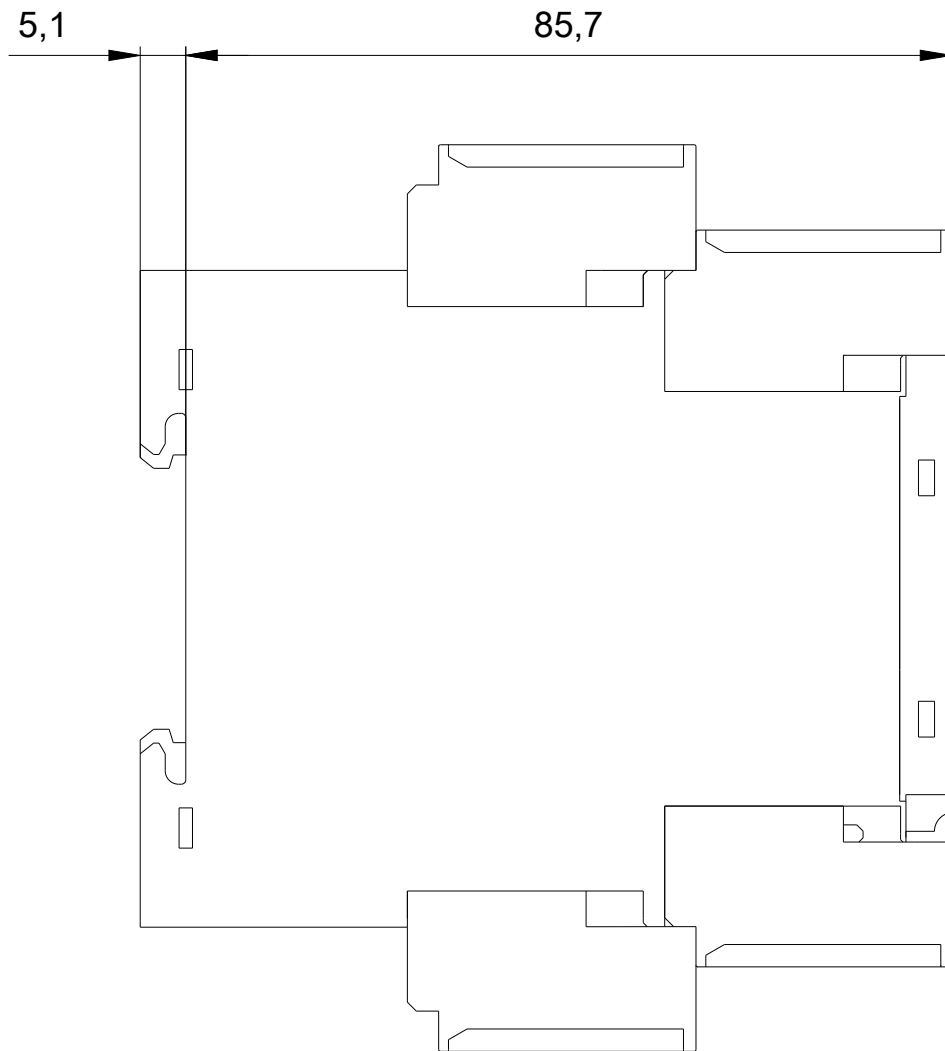
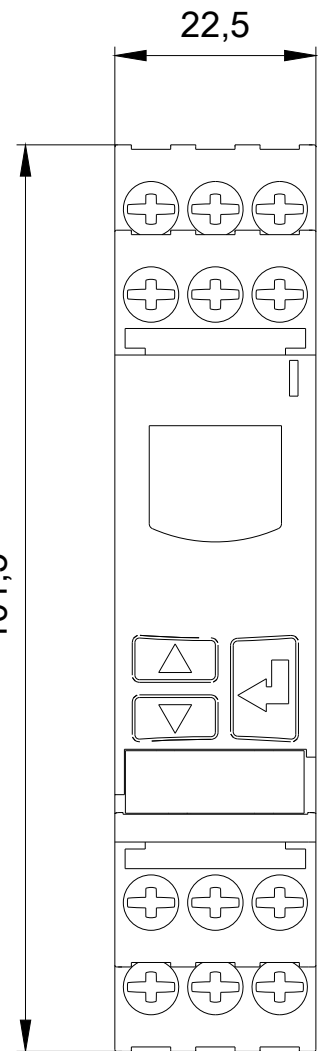
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3UG4816-1AA40>

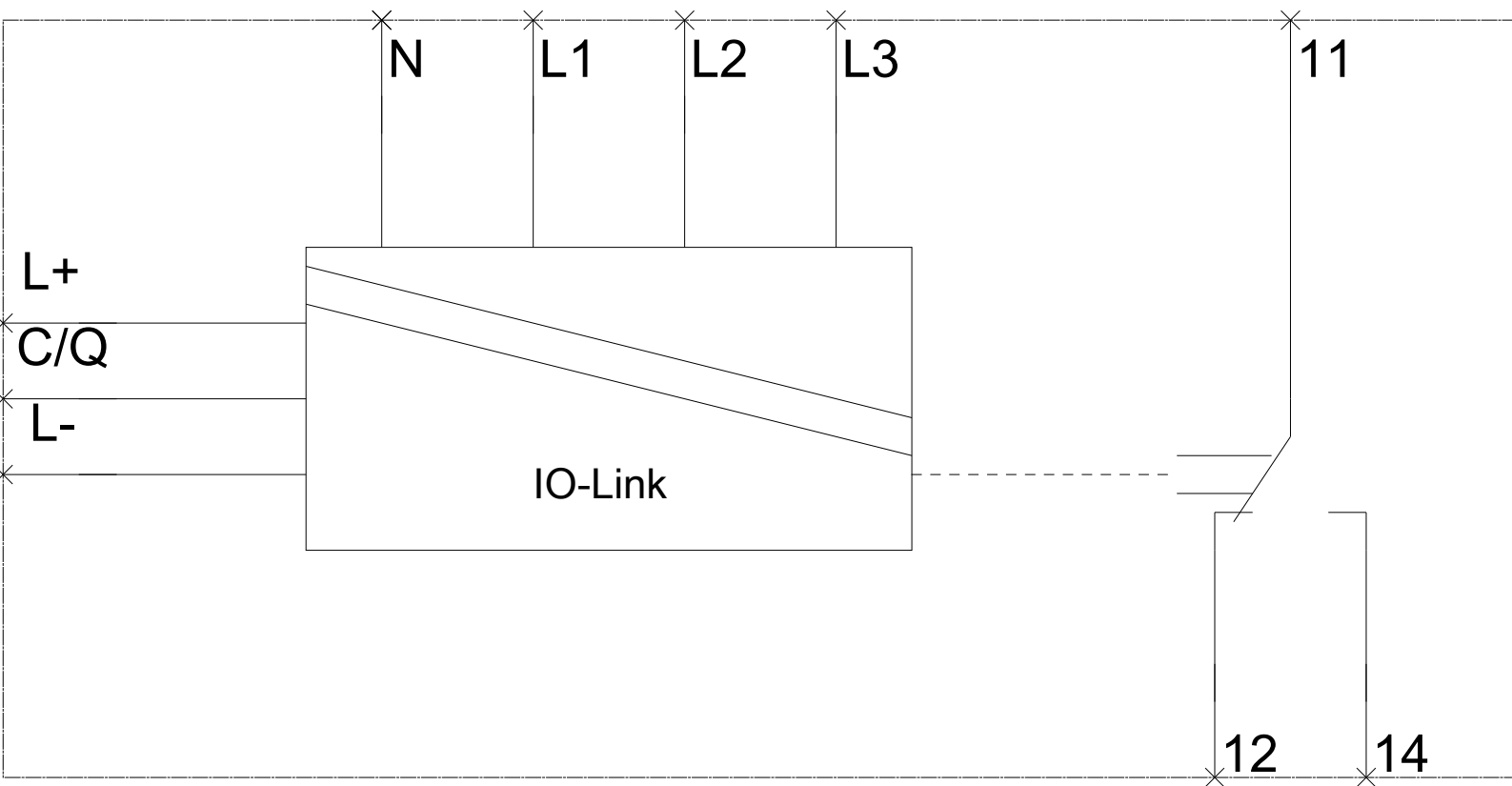
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3UG4816-1AA40>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3UG4816-1AA40&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3UG4816-1AA40&lang=en)





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