SIEMENS

Data sheet 3UG4512-2BR20



ANALOG MONITORING RELAY PHASE FAILURE AND -SEQUENCE 3X 160 TO 690V AC 50 TO 60 HZ 2 CHANGEOVER CONTACTS SPRING LOADED CONNECTION

Product function		Phase monitoring relay
Measuring circuit:		
Type of voltage for monitoring		AC
Number of poles for main current circuit		3
Measurable voltage with AC	V	160 690
Relative repeat accuracy	%	1

General technical data:		
Display version LED		Yes
Product function		
 undervoltage detection 		No
 Overvoltage detection 		No
 phase sequence recognition 		Yes
Phase failure detection		Yes
 Asymmetry recognition 		No
 Overvoltage detection 3 phase 		No
 undervoltage detection 3 phases 		No
 Voltage window recognition 3 phase 		No
Auto-reset		Yes
 Adjustable open/closed-circuit current principle 		No
Startup time after the control supply voltage has been	ms	1 000
applied		
Response time maximum	ms	450
Type of voltage of the control supply voltage		AC
Control supply voltage		
• with AC		

— at 50 Hz Rated value	V	160 690
— at 50 Hz Rated value — at 60 Hz Rated value	V	160 690
Operating range factor control supply voltage rated	V	100 030
value		
• with AC		
— at 50 Hz		11
— at 60 Hz		11
Surge voltage resistance Rated value	kV	6
Active power consumption	W	2
Protection class IP		IP20
Electromagnetic compatibility		IEC 60947-1 / IEC 61000-6-2 / IEC 61000-6-4
Vibration resistance acc. to IEC 60068-2-6		1 6 Hz: 15 mm, 6 500 Hz: 2g
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
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	690
Degree of pollution		3
Ambient temperature		
during operation	°C	-25 +60
during storage	°C	-40 + 85
during transport	°C	-40 +85
Galvanic isolation		
• between entrance and outlet		Yes
• between the outputs		Yes
between the voltage supply and other circuits		Yes

Mechanical data:		
Width	mm	22.5
Height	mm	94
Depth	mm	91
mounting position		any
Required spacing for grounded parts		
forwards	mm	0
Backwards	mm	0

■ downwards ■ downwards ■ downwards ■ forwards ■ Backwards ■ at the side ■ upwards ■ downwards ■ mm □ 0 □ upwards ■ downwards ■ mm □ 0 □ upwards □ upwards □ downwards ■ mm □ 0 □ upwards □ downwards □ mm □ 0 □ upwards □ downwards □ mm □ 0 □ Backwards □ mm □ 0 □ Countacts □ upwards	• at the side	mm	0
Required spacing with side-by-side mounting	• upwards	mm	0
• Forwards • Backwards • Backwards • at the side • upwards • downwards • Backwards • Backwards • at the side • upwards • downwards • downwards • downwards • mm 0 • at the side • upwards • downwards • mm 0 Mountling type Froduct function removable terminal for auxiliary and control circuit Type of electrical connection Type of connectable conductor cross-section • solid • finely stranded — with core end processing — without core end processing • for AWG conductors — solid • stranded • Stranded • without core end processing • without core end processing • for AWG conductors — solid • stranded • Stranded • without core end processing • at AC-15 — at 250 V at 50/60 Hz • at 125 V — at 250 V	• downwards	mm	0
• Backwards mm 0 • at the side mm 0 • downwards mm 0 Required spacing for live parts mm 0 • forwards mm 0 • Backwards mm 0 • at the side mm 0 • upwards mm 0 • downwards mm 0 Mounting type snap-on mounting Product function removable terminal for auxiliary and control circuit yes Type of electrical connection spring-loaded terminals Type of connectable conductor cross-section yes • solid 2x (0.25 1.5 mm²) • with core end processing 2x (0.25 1.5 mm²) • with or end processing 2x (0.25 1.5 mm²) • for AWG conductors 2x (24 16) - solid 2x (24 16) - stranded 2x (24 16) Number of NC contacts delayed switching 0 Number of NC contacts delayed switching 0 Number of NC contacts delayed switching 2 <	Required spacing with side-by-side mounting		
• at the side • upwards • downwards • downwards Required spacing for live parts • forwards • Backwards • at the side • upwards • at the side • upwards • downwards • downwards • mm 0 • at the side • upwards • downwards • mm 0 • mm 0 • mm 0 • snap-on mounting Product function removable terminal for auxiliary and control circuit Type of connectable conductor cross-section • solid • finely stranded • with core end processing • without core end processing • without core end processing • solid • solid • sranded • sranded • stranded • with core end processing • or AWG conductors • solid • stranded • stranded • stranded • stranded • stranded • stranded Dutputs: Number of NC contacts delayed switching Number of OC contacts delayed switching Number of OC contacts delayed switching Ampacity of the output relay • at AC-15 • at 250 V at 50/60 Hz • at 125 V • at 125 V • at 125 V • at 250 V • at 250 V • at 250 V Thermal current of the switching element with A 5	• forwards	mm	0
• upwards • downwards • downwards Required spacing for live parts • forwards • at the side • upwards • downwards Mounting type Product function removable terminal for auxiliary and control circuit Type of electrical connection Type of connectable conductor cross-section • solid • finely stranded — with core end processing — without core end processing • for AWG conductors — solid — stranded Sunder Sunder Vax (0.25 1.5 mm²) 2 x (0.25 1.5 mm²) 2 x (0.25 1.5 mm²) 2 x (0.25 1.5 mm²) Number of NC contacts delayed switching Number of NC contacts delayed switching Number of NC contacts delayed switching Number of CO contacts delayed switching 1 at AC-15 — at 250 V at 50/60 Hz — at 400 V at 50/60 Hz — at 400 V at 50/60 Hz — at 250 V — at 125 V — at 250 V A D 1 Thermal current of the switching element with A 5	Backwards	mm	0
## downwards ## Decirion ##	• at the side	mm	0
Required spacing for live parts	• upwards	mm	0
	• downwards	mm	0
■ Backwards ■ at the side ■ upwards ■ downwards ■ downwards ■ mm 0 Mounting type Product function removable terminal for auxiliary and control circuit Type of electrical connection Type of connectable conductor cross-section ■ solid ■ mith core end processing ■ with core end processing ■ of AWG conductors ■ solid ■ stranded ■ stranded □ with core end processing ■ for AWG conductors ■ solid □ stranded □ without core end processing ■ for AWG conductors □ solid □ stranded □ stranded □ without core end processing ■ of AWG conductors □ solid □ stranded □ stranded □ stranded □ stranded □ without core end processing □ at 24 V	Required spacing for live parts		
• at the side • upwards • downwards Mounting type Product function removable terminal for auxiliary and control circuit Type of electrical connection Type of connectable conductor cross-section • solid • finely stranded — with core end processing — without core end processing — of AWG conductors — solid — stranded — stranded — stranded Sumber of NO contacts delayed switching Number of NO contacts delayed switching Number of CO contacts delayed switching Ampacity of the output relay • at AC-15 — at 250 V at 50/60 Hz — at 125 V — at 125 V — at 250 V Thermal current of the switching element with Type snap-on mounting Yes snap-on mounting Yes snap-on mounting Yes snap-on mounting Yes snap-on mounting 1	• forwards	mm	0
● upwards mm 0 ● downwards mm 0 Mounting type snap-on mounting Product function removable terminal for auxiliary and control circuit Yes Type of electrical connection spring-loaded terminals Type of connectable conductor cross-section 2x (0.25 1.5 mm²) ● solid 2x (0.25 1.5 mm²) ● finely stranded 2x (0.25 1.5 mm²) — with core end processing 2x (0.25 1.5 mm²) ● for AWG conductors 2x (24 16) — solid 2x (24 16) — stranded 2x (24 16) Polyputs: 0 Number of NO contacts delayed switching 0 Number of NC contacts delayed switching 0 Number of CO contacts delayed switching 2 • at AC-15 4 3 — at 250 V at 50/60 Hz A 3 • at DC-13 4 3 — at 24 V A 1 — at 250 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	Backwards	mm	0
• downwards mm 0 Mounting type snap-on mounting Product function removable terminal for auxiliary and control circuit Type of electrical connection Type of connectable conductor cross-section • solid • finely stranded — with core end processing — without core end processing — without core end processing • for AWG conductors — solid — stranded — stranded Dutputs' Number of NO contacts delayed switching Number of NC contacts delayed switching Number of CO contacts delayed switching Ampacity of the output relay • at AC-15 — at 250 V at 50/60 Hz — at 400 V at 50/60 Hz — at 250 V — at 250 V — at 250 V A 0.2 — at 250 V Thermal current of the switching element with A 5	• at the side	mm	0
Mounting type snap-on mounting Product function removable terminal for auxiliary and control circuit Type of electrical connection spring-loaded terminals Type of connectable conductor cross-section • solid 2x (0.25 1.5 mm²) • finely stranded 2x (0.25 1.5 mm²) • with core end processing 2x (0.25 1.5 mm²) • for AWG conductors 2x (24 16) • stranded 2x (24 16) - stranded 2x (24 16) Dutputs: Number of NO contacts delayed switching 0 Number of NC contacts delayed switching 0 Number of CO contacts delayed switching 2 Ampacity of the output relay • at AC-15 - at 250 V at 50/60 Hz A 3 - at 400 V at 50/60 Hz A 3 - at 24 V A 1 - at 250 V A 0.2 - at 250 V A 0.1 Thermal current of the switching element with A 5	• upwards	mm	0
Product function removable terminal for auxiliary and control circuit Yes Type of electrical connection spring-loaded terminals Type of connectable conductor cross-section 2x (0.25 1.5 mm²) • finely stranded 2x (0.25 1.5 mm²) — with core end processing 2x (0.25 1.5 mm²) — without core end processing 2x (0.25 1.5 mm²) • for AWG conductors 2x (24 16) — stranded 2x (24 16) Dutputs: 0 Number of NO contacts delayed switching 0 Number of NC contacts delayed switching 2 Ampacity of the output relay 2 • at AC-15 3 — at 250 V at 50/60 Hz A 3 • at DC-13 A 3 — at 24 V A 1 — at 125 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	• downwards	mm	0
control circuit spring-loaded terminals Type of electrical connectable conductor cross-section spring-loaded terminals ◆ solid 2x (0.25 1.5 mm²) ◆ finely stranded 2x (0.25 1.5 mm²) — with core end processing 2x (0.25 1.5 mm²) — without core end processing 2x (0.25 1.5 mm²) • for AWG conductors 2x (24 16) — solid 2x (24 16) — stranded 2x (24 16) Dutputs: Number of NC contacts delayed switching 0 Number of NC contacts delayed switching 0 Number of CO contacts delayed switching 2 Ampacity of the output relay 2 • at AC-15 4 3 — at 250 V at 50/60 Hz A 3 • at DC-13 A 3 — at 24 V A 1 — at 125 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	Mounting type	_	snap-on mounting
Type of connectable conductor cross-section			Yes
 ◆ solid ◆ finely stranded — with core end processing — without core end processing 2 x (0.25 1.5 mm²) — without core end processing 2 x (0.25 1.5 mm²) ◆ for AWG conductors — solid — stranded 2x (24 16) — stranded 2x (24 16) Outputs: Number of NO contacts delayed switching Number of NC contacts delayed switching Number of CO contacts delayed switching at AC-15 — at 250 V at 50/60 Hz — at 400 V at 50/60 Hz — at 400 V at 50/60 Hz A 3 — at 24 V — at 25 V — at 250 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with 	Type of electrical connection		spring-loaded terminals
 • finely stranded — with core end processing — without core end processing — without core end processing • for AWG conductors — solid — stranded — stranded — 2x (24 16) — stranded — 2x (24 16) — stranded — 2x (24 16) — without core end processing — 2x (24 16) — 2x (24 16) — stranded — 2x (24 16) — stranded — 0 — 0 — 0	Type of connectable conductor cross-section		
— with core end processing 2 x (0.25 1.5 mm²) — without core end processing 2x (0.25 1.5 mm²) • for AWG conductors 2x (24 16) — stranded 2x (24 16) Dutputs: Number of NO contacts delayed switching Number of NC contacts delayed switching 0 Number of CO contacts delayed switching 2 Ampacity of the output relay 2 • at AC-15 A 3 — at 250 V at 50/60 Hz A 3 • at DC-13 A 3 — at 24 V A 1 — at 125 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	• solid		2x (0.25 1.5 mm²)
- without core end processing • for AWG conductors - solid - stranded Dutputs: Number of NO contacts delayed switching Number of NC contacts delayed switching Number of CO contacts delayed switching Ampacity of the output relay • at AC-15 - at 250 V at 50/60 Hz - at 400 V at 50/60 Hz • at DC-13 - at 24 V - at 125 V - at 250 V - at 250 V A 0.1 Thermal current of the switching element with A 2x (24 16) 2x (24 16) 0 0 A 3 4 4 4 4 4 4 4 4 4 4 4 4	finely stranded		
● for AWG conductors — solid — stranded 2x (24 16) 2x (24 16) 2x (24 16) Dutputs: Number of NO contacts delayed switching Number of CO contacts delayed switching Ampacity of the output relay ● at AC-15 — at 250 V at 50/60 Hz A 3 — at 400 V at 50/60 Hz A 1 — at 125 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	— with core end processing		2 x (0.25 1.5 mm²)
solid	 — without core end processing 		2x (0.25 1.5 mm²)
	 for AWG conductors 		
Dutputs: Number of NO contacts delayed switching Number of NC contacts delayed switching Number of CO contacts delayed switching Ampacity of the output relay • at AC-15 - at 250 V at 50/60 Hz - at 400 V at 50/60 Hz • at DC-13 - at 24 V - at 125 V - at 250 V A 0.2 - at 250 V Thermal current of the switching element with O 0 A 3 4 1 - at 250 V A 0.1	— solid		2x (24 16)
Number of NO contacts delayed switching Number of NC contacts delayed switching Number of CO contacts delayed switching Ampacity of the output relay at AC-15 at 250 V at 50/60 Hz at 400 V at 50/60 Hz at 24 V at 125 V at 125 V at 250 V A 0.2 at 250 V A 0.1 Thermal current of the switching element with 0 0 0 0 0 0 0 0 0 0 0 0 0	— stranded		2x (24 16)
Number of NC contacts delayed switching 0 Number of CO contacts delayed switching 2 Ampacity of the output relay 2 • at AC-15 A — at 250 V at 50/60 Hz A • at DC-13 A — at 24 V A — at 125 V A — at 250 V A O.2 A — at 250 V A Thermal current of the switching element with A	Outputs:		
Number of CO contacts delayed switching 2 Ampacity of the output relay 4 • at AC-15 A — at 250 V at 50/60 Hz A • at DC-13 A — at 24 V A — at 125 V A — at 250 V A Thermal current of the switching element with A	Number of NO contacts delayed switching		0
Ampacity of the output relay ● at AC-15 — at 250 V at 50/60 Hz A — at 400 V at 50/60 Hz A ● at DC-13 — at 24 V A — at 125 V A — at 250 V A Thermal current of the switching element with A 5	•		0
 at AC-15 at 250 V at 50/60 Hz at 400 V at 50/60 Hz at DC-13 at 24 V at 125 V at 250 V Thermal current of the switching element with A 5 	Number of CO contacts delayed switching		2
 — at 250 V at 50/60 Hz — at 400 V at 50/60 Hz A 3 ■ at DC-13 — at 24 V — at 125 V — at 250 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5 	Ampacity of the output relay		
 — at 400 V at 50/60 Hz A 3 • at DC-13 — at 24 V — at 125 V — at 250 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5 	● at AC-15		
● at DC-13 — at 24 V — at 125 V — at 250 V Thermal current of the switching element with A 1 A 0.2 A 0.1	— at 250 V at 50/60 Hz	Α	3
— at 24 V A 1 — at 125 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	— at 400 V at 50/60 Hz	Α	3
— at 125 V A 0.2 — at 250 V A 0.1 Thermal current of the switching element with A 5	● at DC-13		
— at 250 V A 0.1 Thermal current of the switching element with A 5	— at 24 V	Α	1
Thermal current of the switching element with A 5	— at 125 V	Α	0.2
	— at 250 V	Α	0.1
	_	Α	5
Operating current at 17 V minimum mA 5	Operating current at 17 V minimum	mA	5

Continuous current of the DIAZED fuse link of the output relay	Α	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 Te

Test Certificates

Special Test
Certificate

Type Test
Certificates/Test
Report









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other

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other





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