

7SG116 Argus

Overcurrent Protection Relays

Document Release History

This document is issue 2010/02. The list of revisions up to and including this issue is:

Pre release

2010/02	Document reformat due to rebrand
2002/12	First issue

Software Revision History

Since introduction in 1995, Argus overcurrent relays have undergone a number of modifications to improve functionality and features provided. The content of this manual is directly applicable to the software versions listed below. When used with other versions minor variations may be noticed. A detailed release history for each type is given in the appropriate Diagrams and Parameters document.

Argus 6	2716H80005 R5	release date March 2005
---------	---------------	-------------------------

Hardware Release History

Since introduction in 1995, Argus overcurrent relays have undergone a number of minor changes to hardware. The content of this manual is directly applicable to Argus hardware in Epsilon cases produced since March 2002. When used with earlier versions, minor variations may be noticed. A detailed release history for each type is given in the appropriate Diagrams and Parameters document.

The copyright and other intellectual property rights in this document, and in any model or article produced from it (and including any registered or unregistered design rights) are the property of Siemens Protection Devices Limited. No part of this document shall be reproduced or modified or stored in another form, in any data retrieval system, without the permission of Siemens Protection Devices Limited, nor shall any model or article be reproduced from this document unless Siemens Protection Devices Limited consent.

While the information and guidance given in this document is believed to be correct, no liability shall be accepted for any loss or damage caused by any error or omission, whether such error or omission is the result of negligence or any other cause. Any and all such liability is disclaimed.

Scope

This manual applies to the Argus relays listed in the following MLFB Structure & table.

The MLFB Structure references the complete number for each relay:

- 7SG11xx-xxxxx-xxA0

The table uses two references for most relays, each of which is valid:

- an 'Order code' of the form $AGn-nnn$, and
- a 'Type' of the form $DCDnnnX$ or $GAFnnnX$

where n is a digit and X is a letter.

Standard Models

All of the types and ordering codes below refer to:

- Epsilon case, and
- ST fibre-optic connectors optimised for 62.5/125 μm glass fibre.

On request it may be possible to supply equivalent models fitted with:

- SMA fibre-optic connectors optimised for 62.5/125 μm glass fibre, or
- SMA fibre-optic connectors optimised for 1 mm plastic fibre.
- RS 485 Electrical communications
- All relays are 1A/5A rated unless otherwise stated in the following table.

Ordering Information – 7SG1164 Argus 6

Product description	Variants	Order No.
---------------------	----------	-----------

Directional O/C relay with auto-reclose

Bi-directional version of ARGUS 4.

	7	S	G	1	1	6	□	-	□	□	□	□	-	□	□	A	0
							↑		↑	↑	↑	↑		↑	↑		
							4										
<u>Number of elements</u>																	
Four pole relay																	
<u>Auxiliary supply /binary input voltage</u>																	
24/30/48 V DC auxiliary, 30 V binary input																	0
110/220 V DC auxiliary, 30 V binary input																	1
24/30/48 V DC auxiliary, 48 V binary input																	2
110/220 V DC auxiliary, 48 V binary input ¹⁾																	3
110/220 V DC auxiliary, 110 V low burden binary input																	4
110/220 V DC auxiliary, 220 V low burden binary input																	5
<u>Type of elements</u>																	
3 pole phase-fault directional and sensitive/restricted earth-fault (SEF/REF)																	N
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault																	1 E
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault																	P
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault																	4 E
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault																	P
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault																	5 E
3 pole phase-fault and earth-fault directional																	Q
3 pole phase-fault and earth-fault directional																	Q
																	2 D
																	3 D
																	A
<u>Nominal current</u>																	
1/ 5 A																	
<u>I/O range</u>																	
9 Binary Inputs / 7 Binary Outputs (incl. 3 changeover)																	2
<u>Communication interface</u>																	
Fibre optic (ST-connector) / IEC 60870-5-103 or Modbus RTU																	1
RS485 interface / IEC 60870-5-103 or Modbus RTU																	2
<u>Directional measurement characteristic angle (CA)</u>																	
+30°, +45° for phase faults																	1
0°, -15°, -45°, -65° for earth faults																	2
0°, -15°, -45°, -90° for earth faults																	3
+30°, +45° for phase faults and 0°, -15°, -45°, -65° for earth faults																	4
+30°, +45° for phase faults and 0°, -15°, -45°, -90° for earth faults																	5
<u>Housing size</u>																	
Case size E6 (4U high)																	D
Case size E8 (4U high)																	E

¹⁾ High burden 110V & 220V binary inputs compliant with ESI48-4 ESI 1 available via external dropper resistors with 48V binary input version for 9 binary inputs and 110 V application, order resistor box VCE:2512H10064 in addition for 9 binary inputs and 220 V application, order two resistor boxes VCE:2512H10067 in addition Refer to website for application note about ESI48-4 compliance

Ordering Information – 7SG1164 Argus 6

Product description	Variants	Order No.
---------------------	----------	-----------

Directional O/C relay with auto-reclose

Bi-directional version of ARGUS 4.

	7	S	G	1	1	6	-	-	-	-	-	A	0
<u>Number of elements</u>													
Four pole relay							4						
<u>Auxiliary supply /binary input voltage</u>													
24/30/48 V DC auxiliary, 30 V binary input												0	
110/220 V DC auxiliary, 30 V binary input												1	
24/30/48 V DC auxiliary, 48 V binary input												2	
110/220 V DC auxiliary, 48 V binary input ¹⁾												3	
110/220 V DC auxiliary, 110 V low burden binary input												4	
110/220 V DC auxiliary, 220 V low burden binary input												5	
<u>Type of elements</u>													
3 pole phase-fault directional and sensitive/restricted earth-fault (SEF/REF)										N			1 E
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault										P			4 E
3 pole phase-fault directional and earth-fault directional or 3 pole phase-fault directional and earth-fault										P			5 E
3 pole phase-fault and earth-fault directional										Q			2 D
3 pole phase-fault and earth-fault directional										Q			3 D
<u>Nominal current</u>													
1/5 A										A			
<u>I/O range</u>													
9 Binary Inputs / 7 Binary Outputs (incl. 3 changeover)												2	
<u>Communication interface</u>													
Fibre optic (ST-connector) / IEC 60870-5-103 or Modbus RTU												1	
RS485 interface / IEC 60870-5-103 or Modbus RTU												2	
<u>Directional measurement characteristic angle (CA)</u>													
+30°, +45° for phase faults													1
0°, -15°, -45°, -65° for earth faults													2
0°, -15°, -45°, -90° for earth faults													3
+30°, +45° for phase faults and 0°, -15°, -45°, -65° for earth faults													4
+30°, +45° for phase faults and 0°, -15°, -45°, -90° for earth faults													5
<u>Housing size</u>													
Case size E6 (4U high)													D
Case size E8 (4U high)													E

¹⁾ High burden 110V & 220V binary inputs compliant with ESI48-4 ESI 1 available via external dropper resistors with 48V binary input version for 9 binary inputs and 110 V application, order resistor box VCE:2512H10064 in addition for 9 binary inputs and 220 V application, order two resistor boxes VCE:2512H10067 in addition Refer to website for application note about ESI48-4 compliance

Series Description	Protection	I / O	Order code / Type				
			30/48 aux.		110/220 aux.		
			30V status	48V status	48V status	110V status	220V status
Argus 6 Directional overcurrent protection & autoreclose	3 directional phase-fault and directional earth-fault	9 S I 7 OR	GAF911C	AG6-401 GAF913C	AG6-402 GAF914C		GAF915C
	3 directional phase-fault and SEF	9 S I 7 OR	GAF921C	AG6-403 GAF923C	AG6-404 GAF924C		
	3 phase-fault and dir'n. earth-fault	9 S I 7 OR	GAF931C	AG6-405 GAF933C	AG6-406 GAF934C		

Structure of Document Set

