

7SG111 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 1	2434H80023 R10	release date November 2005
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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.

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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 – 7SG1111 Argus 1

Product description	Variants	Order No.
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Nondirectional O/C relay

Over current and earth fault protection for radial feeders, capacitor banks and industrial and commercial plant.

Number of elements

Single pole relay

Auxiliary supply /binary input voltage

24/30/48 V DC auxiliary, 30 V binary input
 110/220 V DC auxiliary, 30 V binary input
 24/30/48 V DC auxiliary, 48 V binary input
 110/220 V DC auxiliary, 48 V binary input ¹⁾
 110/220 V DC auxiliary, 110 V low burden binary input
 110/220 V DC auxiliary, 220 V low burden binary input

Type of elements

Single pole phase-fault or single pole earth-fault
 Single pole sensitive/restricted earth-fault (SEF/REF)

Nominal current

1/ 5 A

I/O range

1 Binary Inputs / 7 Binary Outputs (incl. 3 changeover)

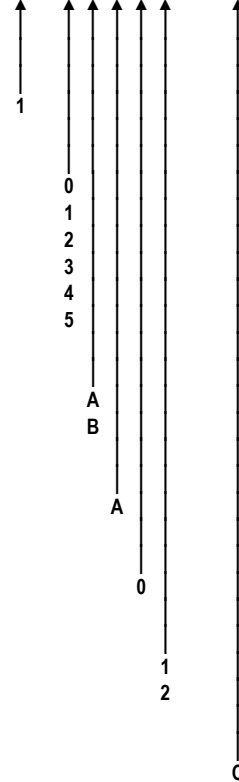
Communication interface

Fibre optic (ST-connector) / IEC 60870-5-103 or Modbus RTU
 RS485 interface / IEC 60870-5-103 or Modbus RTU

Housing size

Case size E4 (4U high)

7 S G 1 1 1 □ - □ □ □ □ - 0 □ A 0



¹⁾ High burden 110V & 220V binary inputs compliant with ESI48-4 ESI 1 available via external dropper resistors with 48V binary input version for 1 binary input and 110 V application, order resistor box VCE:2512H10066 in addition for 1 binary input and 220 V application, order resistor box VCE:2512H10068 in addition Refer to website for application note about ESI48-4 compliance.

Ordering Information – 7SG1113 Argus 1

Product description	Variants	Order No.
<p>Nondirectional O/C relay</p> <p>Over current and earth fault protection for radial feeders, capacitor banks and industrial and commercial plant.</p>	<p>Number of elements Three pole relay</p> <p>Auxiliary supply /binary input voltage 24/30/48 V DC auxiliary, 30 V binary input 110/220 V DC auxiliary, 30 V binary input 24/30/48 V DC auxiliary, 48 V binary input 110/220 V DC auxiliary, 48 V binary input ¹⁾ 110/220 V DC auxiliary, 110 V low burden binary input 110/220 V DC auxiliary, 220 V low burden binary input</p> <p>Type of elements 3 pole phase-fault or 2 pole phase-fault and earth-fault 2 pole phase-fault and sensitive/restricted earth-fault (SEF/REF)</p> <p>Nominal current 1/ 5 A</p> <p>I/O range 1 Binary Input / 7 Binary Outputs (incl. 3 changeover) 5 Binary Inputs / 11 Binary Outputs (incl. 3 changeover) 9 Binary Inputs / 7 Binary Outputs (incl. 3 changeover)</p> <p>Communication interface Fibre optic (ST-connector) / IEC 60870-5-103 or Modbus RTU RS485 interface / IEC 60870-5-103 or Modbus RTU</p> <p>Housing size Case size E6 (4U high)</p>	<p>7 S G 1 1 1 □ - □ □ □ □ □ - 0 □ A 0</p> <p>↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑</p> <p>3</p> <p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>C</p> <p>D</p> <p>A</p> <p>0</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>D</p>

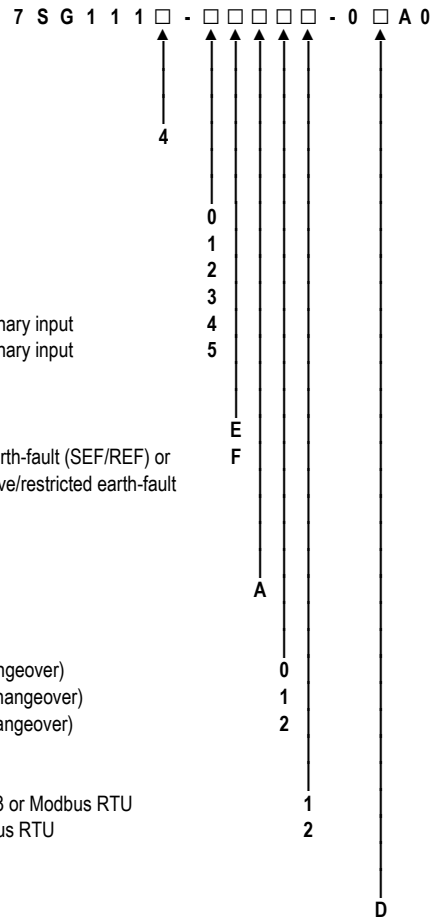
¹⁾ High burden 110V & 220V binary inputs compliant with ESI48-4 ESI 1 available via external dropper resistors with 48V binary input version for 1 binary input and 110 V application, order resistor box VCE:2512H10066 in addition for 5 binary inputs and 110 V application, order resistor box VCE:2512H10065 in addition for 9 binary inputs and 110 V application, order resistor box VCE:2512H10064 in addition for 1 binary input and 220 V application, order resistor box VCE:2512H10068 in addition for 5 binary inputs and 220 V application, order resistor box VCE:2512H10067 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 – 7SG114 Argus 1

Product description	Variants	Order No.
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Nondirectional O/C relay

Over current and earth fault protection for radial feeders, capacitor banks and industrial and commercial plant.



Number of elements

Four pole relay

Auxiliary supply /binary input voltage

- 24/30/48 V DC auxiliary, 30 V binary input
- 110/220 V DC auxiliary, 30 V binary input
- 24/30/48 V DC auxiliary, 48 V binary input
- 110/220 V DC auxiliary, 48 V binary input¹⁾
- 110/220 V DC auxiliary, 110 V low burden binary input
- 110/220 V DC auxiliary, 220 V low burden binary input

Type of elements

- 3 pole phase-fault and earth-fault
- 3 pole phase-fault and sensitive/restricted earth-fault (SEF/REF) or
- 2 pole phase-fault and earth fault and sensitive/restricted earth-fault (SEF/REF)

Nominal current

1/ 5 A

I/O range

- 1 Binary Input / 7 Binary Outputs (incl. 3 changeover)
- 5 Binary Inputs / 11 Binary Outputs (incl. 3 changeover)
- 9 Binary Inputs / 7 Binary Outputs (incl. 3 changeover)

Communication interface

- Fibre optic (ST-connector) / IEC 60870-5-103 or Modbus RTU
- RS485 interface / IEC 60870-5-103 or Modbus RTU

Housing size

Case size E6 (4U high)

¹⁾ High burden 110V & 220V binary inputs compliant with ESI48-4 ESI 1 available via external dropper resistors with 48V binary input version for 1 binary input and 110 V application, order resistor box VCE:2512H10066 in addition for 5 binary inputs and 110 V application, order resistor box VCE:2512H10065 in addition for 9 binary inputs and 110 V application, order resistor box VCE:2512H10064 in addition for 1 binary input and 220 V application, order resistor box VCE:2512H10068 in addition for 5 binary inputs and 220 V application, order resistor box VCE:2512H10067 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 – 7SG1115 Argus 1

Product description	Variants	Order No.
Nondirectional O/C relay Over current and earth fault protection for radial feeders, capacitor banks and industrial and commercial plant.	<p><u>Number of elements</u> Four pole relay (fixed I/O)</p> <p><u>Auxiliary supply /binary input voltage</u> 24/30/48 V DC auxiliary, 30 V binary input 110/220 V DC auxiliary, 30 V binary input 24/30/48 V DC auxiliary, 48 V binary input 110/220 V DC auxiliary, 48 V binary input ¹⁾ 110/220 V DC auxiliary, 110 V low burden binary input 110/220 V DC auxiliary, 220 V low burden binary input</p> <p><u>Type of elements</u> 3 pole phase-fault and earth-fault</p> <p><u>Nominal current</u> 1A 5A</p> <p><u>I/O range</u> 3 Binary Input / 5 Binary Outputs (incl. 2 changeover)</p> <p><u>Communication interface</u> Fibre optic (ST-connector) / IEC 60870-5-103 or Modbus RTU RS485 interface / IEC 60870-5-103 or Modbus RTU</p> <p><u>Housing size</u> Case size E4 (4U high)</p>	<p>7 S G 1 1 1 □ - □ □ □ □ - 0 □ A 0</p> <p>↑ ↑ ↑ ↑ ↑ ↑</p> <p>5 0 1 2 3 4 5</p> <p>E B C</p> <p>3 1 2</p> <p>C</p>

¹⁾ High burden 110V & 220V binary inputs compliant with ESI48-4 ESI 1 available via external dropper resistors with 48V binary input version for 5 binary inputs and 110 V application, order resistor box VCE:2512H10065 in addition for 5 binary inputs and 220 V application, order resistor box 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 1 Overcurrent protection	Single phase-fault or earth-fault	1 SI 7 OR	DCD111A	AG1-101 DCD113A	AG1-102 DCD114A	DCD115A	DCD116A
	Sensitive earth-fault	1 SI 7 OR	DCD121A	AG1-103 DCD123A	AG1-104 DCD124A	DCD125A	DCD126A
	3 phase-fault, or 2 phase-fault and earth-fault	1 SI 7 OR	DCD311A	AG1-301 DCD313A	AG1-302 DCD314A	DCD315A	DCD316A
		5 SI 11 OR	DCD311B	AG1-311 DCD313B	AG1-312 DCD314B	DCD315B	DCD316B
		9 S I 7 OR	DCD311C	AG1-321 DCD313C	AG1-322 DCD314C		DCD315C
	2 phase-fault and SEF	1 SI 7 OR	DCD321A	AG1-303 DCD323A	AG1-304 DCD324A		DCD325A
		5 SI 11 OR	DCD321B	AG1-313 DCD323B	AG1-314 DCD324B		
		9 S I 7 OR	DCD321C	AG1-323 DCD323C	AG1-324 DCD324C		
	3 phase-fault and earth-fault	1 SI 7 OR	DCD411A	AG1-401 DCD413A	AG1-402 DCD414A	DCD415A	DCD416A
		5 SI 11 OR	DCD411B	AG1-411 DCD413B	AG1-412 DCD414B	DCD415B	DCD416B
		9 S I 7 OR	DCD411C	AG1-421 DCD413C	AG1-422 DCD414C	DCD415C	DCD416C
	3 phase-fault and earth-fault 1A	3 SI 5 OR		AG1-431	AG1-433		
	3 phase-fault and earth-fault 5A	3 SI 5 OR		AG1-432	AG1-434		
	3 phase-fault and SEF, or 2 phase-fault, earth-fault and SEF	1 SI 7 OR	DCD421A	AG1-403 DCD423A	AG1-404 DCD424A	DCD425A	DCD426A
		5 SI 11 OR	DCD421B	AG1-413 DCD423B	AG1-414 DCD424B	DCD425B	DCD426B
		9 S I 7 OR	DCD421C	AG1-423 DCD423C	AG1-424 DCD424C	DCD425C	DCD426C

Structure of Document Set

