

# 7SR157 Argus

Check Synchronising Relay

## IEC 61850 Model Implementation Conformance Statement (MICS)

### Document Release History

This document is issue 2016/11. The list of revisions up to and including this issue is:

2016/11	First issue
---------	-------------

### Software Revision History

2016/11	2436H80010 R4e-2a (7SR157)	First IEC 61850 Release
---------	----------------------------	-------------------------

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.

# Contents

<b>SOFTWARE REVISION HISTORY.....</b>	<b>1</b>
<b>1 REYROLLE -&gt; IEC 61850 .....</b>	<b>4</b>
1.1 Device .....	4
1.2 Change Group.....	7
1.3 Disturbance Recorder .....	7
1.4 Double Point Controls (Enhanced Security).....	8
1.5 Double Point Controls (Normal Security) .....	8
1.6 Double Point Inputs .....	9
1.7 Double Point Outputs .....	10
1.8 Single Point Controls (Enhanced Security) .....	11
1.9 Single Point Controls (Normal Security).....	11
1.10 Single Point Inputs.....	12
1.11 Single Point Outputs.....	15
1.12 Check Synchronising.....	17
<b>2 IEC 61850 -&gt; REYROLLE .....</b>	<b>19</b>
2.1 PROT .....	19
2.1.1 LLN0.....	19
2.1.2 RSYN1.....	19
2.2 MEAS.....	20
2.2.1 LLN0.....	20
2.3 DR .....	20
2.3.1 LLN0.....	20
2.3.2 RDRE1 .....	21
2.4 CTRL.....	21
2.4.1 BI6GGIO1 .....	21
2.4.2 BO8GGIO1 .....	22
2.4.3 DPDOesGGIO1 .....	22
2.4.4 DPDOesGGIO2.....	23
2.4.5 DPDOesGGIO3.....	23
2.4.6 DPDOesGGIO4.....	23
2.4.7 DPDOsGGIO1 .....	24
2.4.8 DPDOsGGIO2.....	24
2.4.9 DPDOsGGIO3.....	24
2.4.10 DPDOsGGIO4.....	24
2.4.11 DPi8GGIO1 .....	25

2.4.12	DPI8GGIO2 .....	25
2.4.13	DPo8GGIO1 .....	26
2.4.14	DPo8GGIO2 .....	27
2.4.15	E4GGIO1 .....	27
2.4.16	L9GGIO1 .....	28
2.4.17	LLN0.....	28
2.4.18	SPDOesGGIO1 .....	29
2.4.19	SPDOesGGIO2 .....	29
2.4.20	SPDOesGGIO3.....	29
2.4.21	SPDOesGGIO4 .....	30
2.4.22	SPDOnsGGIO1 .....	30
2.4.23	SPDOnsGGIO2.....	30
2.4.24	SPDOnsGGIO3.....	31
2.4.25	SPDOnsGGIO4.....	31
2.4.26	SPi64GGIO1 .....	31
2.4.27	SPo32GGIO1 .....	35
2.4.28	V8GGIO1 .....	37

# 1 Reyrolle -> IEC 61850

## 1.1 Device

Reyrolle	DOI	DA Group
LED Reset		
	CTRL.LLN0.LEDRs	stVal
Local Mode		
	CTRL.LLN0.Loc	stVal
	CTRL.SPDOsGGIO1.Loc	stVal
	CTRL.SPDOsGGIO2.Loc	stVal
	CTRL.SPDOsGGIO3.Loc	stVal
	CTRL.SPDOsGGIO4.Loc	stVal
	CTRL.SPDOesGGIO1.Loc	stVal
	CTRL.SPDOesGGIO2.Loc	stVal
	CTRL.SPDOesGGIO3.Loc	stVal
	CTRL.SPDOesGGIO4.Loc	stVal
	CTRL.DPDOsGGIO1.Loc	stVal
	CTRL.DPDOsGGIO2.Loc	stVal
	CTRL.DPDOsGGIO3.Loc	stVal
	CTRL.DPDOsGGIO4.Loc	stVal
	CTRL.DPDOesGGIO1.Loc	stVal
	CTRL.DPDOesGGIO2.Loc	stVal
	CTRL.DPDOesGGIO3.Loc	stVal
	CTRL.DPDOesGGIO4.Loc	stVal
Out of Service		
	PROT.LLN0.Mod	stVal
	PROT.LLN0.Beh	stVal
	CTRL.LLN0.Mod	stVal
	CTRL.LLN0.Beh	stVal
	CTRL.BI6GGIO1.Beh	stVal
	CTRL.BO8GGIO1.Beh	stVal
	CTRL.L9GGIO1.Beh	stVal
	CTRL.V8GGIO1.Beh	stVal
	CTRL.E4GGIO1.Beh	stVal
	CTRL.SPi64GGIO1.Beh	stVal

	CTRL.SP032GGIO1.Beh	stVal
	CTRL.SPDOnsGGIO1.Beh	stVal
	CTRL.SPDOnsGGIO2.Beh	stVal
	CTRL.SPDOnsGGIO3.Beh	stVal
	CTRL.SPDOnsGGIO4.Beh	stVal
	CTRL.SPDOesGGIO1.Beh	stVal
	CTRL.SPDOesGGIO2.Beh	stVal
	CTRL.SPDOesGGIO3.Beh	stVal
	CTRL.SPDOesGGIO4.Beh	stVal
	CTRL.DPDOnsGGIO1.Beh	stVal
	CTRL.DPDOnsGGIO2.Beh	stVal
	CTRL.DPDOnsGGIO3.Beh	stVal
	CTRL.DPDOnsGGIO4.Beh	stVal
	CTRL.DPDOesGGIO1.Beh	stVal
	CTRL.DPDOesGGIO2.Beh	stVal
	CTRL.DPDOesGGIO3.Beh	stVal
	CTRL.DPDOesGGIO4.Beh	stVal
	CTRL.DPi8GGIO1.Beh	stVal
	CTRL.DPi8GGIO2.Beh	stVal
	CTRL.DPo8GGIO1.Beh	stVal
	CTRL.DPo8GGIO2.Beh	stVal
	MEAS.LLN0.Mod	stVal
	MEAS.LLN0.Beh	stVal
	DR.LLN0.Mod	stVal
	DR.LLN0.Beh	stVal
	DR.RDRE1.Beh	stVal
Protection Active		
	PROT.LLN0.Mod	stVal
	PROT.LLN0.Beh	stVal
Protection Healthy		
	PROT.LLN0.Health	stVal
	PROT.RSYN1.Health	stVal
	CTRL.LLN0.Mod	stVal
	CTRL.LLN0.Beh	stVal
	CTRL.LLN0.Health	stVal
	CTRL.BI6GGIO1.Health	stVal
	CTRL.BO8GGIO1.Health	stVal

	CTRL.L9GGIO1.Health	stVal
	CTRL.V8GGIO1.Health	stVal
	CTRL.E4GGIO1.Health	stVal
	CTRL.SPi64GGIO1.Health	stVal
	CTRL.SP032GGIO1.Health	stVal
	CTRL.SPDOnsGGIO1.Health	stVal
	CTRL.SPDOnsGGIO2.Health	stVal
	CTRL.SPDOnsGGIO3.Health	stVal
	CTRL.SPDOnsGGIO4.Health	stVal
	CTRL.SPDOesGGIO1.Health	stVal
	CTRL.SPDOesGGIO2.Health	stVal
	CTRL.SPDOesGGIO3.Health	stVal
	CTRL.SPDOesGGIO4.Health	stVal
	CTRL.DPDOnsGGIO1.Health	stVal
	CTRL.DPDOnsGGIO2.Health	stVal
	CTRL.DPDOnsGGIO3.Health	stVal
	CTRL.DPDOnsGGIO4.Health	stVal
	CTRL.DPDOesGGIO1.Health	stVal
	CTRL.DPDOesGGIO2.Health	stVal
	CTRL.DPDOesGGIO3.Health	stVal
	CTRL.DPDOesGGIO4.Health	stVal
	CTRL.DPi8GGIO1.Health	stVal
	CTRL.DPi8GGIO2.Health	stVal
	CTRL.DPo8GGIO1.Health	stVal
	CTRL.DPo8GGIO2.Health	stVal
	MEAS.LLN0.Mod	stVal
	MEAS.LLN0.Beh	stVal
	MEAS.LLN0.Health	stVal
	DR.LLN0.Mod	stVal
	DR.LLN0.Beh	stVal
	DR.LLN0.Health	stVal
	DR.RDRE1.Mod	stVal
	DR.RDRE1.Beh	stVal
	DR.RDRE1.Health	stVal
Software Revision		
	PROT.LLN0.NamPlt	swRev
	CTRL.LLN0.NamPlt	swRev

	MEAS.LLN0.NamPlt	swRev
	DR.LLN0.NamPlt	swRev
Vendor Name		
	PROT.LLN0.NamPlt	vendor
	CTRL.LLN0.NamPlt	vendor
	MEAS.LLN0.NamPlt	vendor
	DR.LLN0.NamPlt	vendor

## 1.2 Change Group

Reyrolle	DOI	DA Group
Active Setting Group 1		
	PROT.LLN0.SGCB	ActSG
	PROT.LLN0.SGCB	LActTm
Active Setting Group 2		
	PROT.LLN0.SGCB	ActSG
	PROT.LLN0.SGCB	LActTm
Active Setting Group 3		
	PROT.LLN0.SGCB	ActSG
	PROT.LLN0.SGCB	LActTm
Active Setting Group 4		
	PROT.LLN0.SGCB	ActSG
	PROT.LLN0.SGCB	LActTm
Number of 61850 Controllable Setting Groups		
	PROT.LLN0.SGCB	NumOfSG

## 1.3 Disturbance Recorder

Reyrolle	DOI	DA Group
Fault Number		
	DR.RDRE1.FltNum	stVal
Grid Fault Number		
	DR.RDRE1.GriFltNum	stVal
Recording Made		
	DR.RDRE1.RcdMade	stVal

## 1.4 Double Point Controls (Enhanced Security)

Reyrolle	DOI	DA Group
DPDOes 1 Control		
	CTRL.DPDOesGGIO1.DPCSO	Oper.ctlVal
DPDOes 1 Status		
	CTRL.DPDOesGGIO1.DPCSO	stVal
DPDOes 2 Control		
	CTRL.DPDOesGGIO2.DPCSO	Oper.ctlVal
DPDOes 2 Status		
	CTRL.DPDOesGGIO2.DPCSO	stVal
DPDOes 3 Control		
	CTRL.DPDOesGGIO3.DPCSO	Oper.ctlVal
DPDOes 3 Status		
	CTRL.DPDOesGGIO3.DPCSO	stVal
DPDOes 4 Control		
	CTRL.DPDOesGGIO4.DPCSO	Oper.ctlVal
DPDOes 4 Status		
	CTRL.DPDOesGGIO4.DPCSO	stVal

## 1.5 Double Point Controls (Normal Security)

Reyrolle	DOI	DA Group
DPDOns 1 Control		
	CTRL.DPDOnsGGIO1.DPCSO	Oper.ctlVal
DPDOns 1 Status		
	CTRL.DPDOnsGGIO1.DPCSO	stVal
DPDOns 2 Control		
	CTRL.DPDOnsGGIO2.DPCSO	Oper.ctlVal
DPDOns 2 Status		
	CTRL.DPDOnsGGIO2.DPCSO	stVal
DPDOns 3 Control		
	CTRL.DPDOnsGGIO3.DPCSO	Oper.ctlVal
DPDOns 3 Status		
	CTRL.DPDOnsGGIO3.DPCSO	stVal



DPDOs 4 Control		
	CTRL.DPDOsGGIO4.DPCSO	Oper.ctlVal
DPDOs 4 Status		
	CTRL.DPDOsGGIO4.DPCSO	stVal

## 1.6 Double Point Inputs

Reyrolle	DOI	DA Group
DPi8GGIO1 DPCSO 1		
	CTRL.DPi8GGIO1.DPCSO1	ctlVal
DPi8GGIO1 DPCSO 2		
	CTRL.DPi8GGIO1.DPCSO2	ctlVal
DPi8GGIO1 DPCSO 3		
	CTRL.DPi8GGIO1.DPCSO3	ctlVal
DPi8GGIO1 DPCSO 4		
	CTRL.DPi8GGIO1.DPCSO4	ctlVal
DPi8GGIO1 DPCSO 5		
	CTRL.DPi8GGIO1.DPCSO5	ctlVal
DPi8GGIO1 DPCSO 6		
	CTRL.DPi8GGIO1.DPCSO6	ctlVal
DPi8GGIO1 DPCSO 7		
	CTRL.DPi8GGIO1.DPCSO7	ctlVal
DPi8GGIO1 DPCSO 8		
	CTRL.DPi8GGIO1.DPCSO8	ctlVal
DPi8GGIO2 DPCSO 1		
	CTRL.DPi8GGIO2.DPCSO1	ctlVal
DPi8GGIO2 DPCSO 2		
	CTRL.DPi8GGIO2.DPCSO2	ctlVal
DPi8GGIO2 DPCSO 3		
	CTRL.DPi8GGIO2.DPCSO3	ctlVal
DPi8GGIO2 DPCSO 4		
	CTRL.DPi8GGIO2.DPCSO4	ctlVal
DPi8GGIO2 DPCSO 5		
	CTRL.DPi8GGIO2.DPCSO5	ctlVal
DPi8GGIO2 DPCSO 6		
	CTRL.DPi8GGIO2.DPCSO6	ctlVal

DPi8GGIO2 DPCSO 7		
	CTRL.DPi8GGIO2.DPCSO7	ctVal
DPi8GGIO2 DPCSO 8		
	CTRL.DPi8GGIO2.DPCSO8	ctVal

## 1.7 Double Point Outputs

Reyrolle	DOI	DA Group
DPo8GGIO1 Ind 1		
	CTRL.DPo8GGIO1.DPCSO1	stVal
DPo8GGIO1 Ind 2		
	CTRL.DPo8GGIO1.DPCSO2	stVal
DPo8GGIO1 Ind 3		
	CTRL.DPo8GGIO1.DPCSO3	stVal
DPo8GGIO1 Ind 4		
	CTRL.DPo8GGIO1.DPCSO4	stVal
DPo8GGIO1 Ind 5		
	CTRL.DPo8GGIO1.DPCSO5	stVal
DPo8GGIO1 Ind 6		
	CTRL.DPo8GGIO1.DPCSO6	stVal
DPo8GGIO1 Ind 7		
	CTRL.DPo8GGIO1.DPCSO7	stVal
DPo8GGIO1 Ind 8		
	CTRL.DPo8GGIO1.DPCSO8	stVal
DPo8GGIO2 Ind 1		
	CTRL.DPo8GGIO2.DPCSO1	stVal
DPo8GGIO2 Ind 2		
	CTRL.DPo8GGIO2.DPCSO2	stVal
DPo8GGIO2 Ind 3		
	CTRL.DPo8GGIO2.DPCSO3	stVal
DPo8GGIO2 Ind 4		
	CTRL.DPo8GGIO2.DPCSO4	stVal
DPo8GGIO2 Ind 5		
	CTRL.DPo8GGIO2.DPCSO5	stVal
DPo8GGIO2 Ind 6		
	CTRL.DPo8GGIO2.DPCSO6	stVal

DPo8GGIO2 Ind 7		
	CTRL.DPo8GGIO2.DPCSO7	stVal
DPo8GGIO2 Ind 8		
	CTRL.DPo8GGIO2.DPCSO8	stVal

## 1.8 Single Point Controls (Enhanced Security)

Reyrolle	DOI	DA Group
SPDOes 1 Control		
	CTRL.SPDOesGGIO1.SPCSO	Oper.ctlVal
SPDOes 1 Status		
	CTRL.SPDOesGGIO1.SPCSO	stVal
SPDOes 2 Control		
	CTRL.SPDOesGGIO2.SPCSO	Oper.ctlVal
SPDOes 2 Status		
	CTRL.SPDOesGGIO2.SPCSO	stVal
SPDOes 3 Control		
	CTRL.SPDOesGGIO3.SPCSO	Oper.ctlVal
SPDOes 3 Status		
	CTRL.SPDOesGGIO3.SPCSO	stVal
SPDOes 4 Control		
	CTRL.SPDOesGGIO4.SPCSO	Oper.ctlVal
SPDOes 4 Status		
	CTRL.SPDOesGGIO4.SPCSO	stVal

## 1.9 Single Point Controls (Normal Security)

Reyrolle	DOI	DA Group
SPDOns 1 Control		
	CTRL.SPDOnsGGIO1.SPCSO	Oper.ctlVal
SPDOns 1 Status		
	CTRL.SPDOnsGGIO1.SPCSO	stVal
SPDOns 2 Control		
	CTRL.SPDOnsGGIO2.SPCSO	Oper.ctlVal
SPDOns 2 Status		
	CTRL.SPDOnsGGIO2.SPCSO	stVal

SPDOs 3 Control		
	CTRL.SPDOsGGIO3.SPCSO	Oper.ctlVal
SPDOs 3 Status		
	CTRL.SPDOsGGIO3.SPCSO	stVal
SPDOs 4 Control		
	CTRL.SPDOsGGIO4.SPCSO	Oper.ctlVal
SPDOs 4 Status		
	CTRL.SPDOsGGIO4.SPCSO	stVal

## 1.10 Single Point Inputs

Reyrolle	DOI	DA Group
SPi64GGIO1 SPCSO 1		
	CTRL.SPi64GGIO1.SPCSO1	ctlVal
SPi64GGIO1 SPCSO 10		
	CTRL.SPi64GGIO1.SPCSO10	ctlVal
SPi64GGIO1 SPCSO 11		
	CTRL.SPi64GGIO1.SPCSO11	ctlVal
SPi64GGIO1 SPCSO 12		
	CTRL.SPi64GGIO1.SPCSO12	ctlVal
SPi64GGIO1 SPCSO 13		
	CTRL.SPi64GGIO1.SPCSO13	ctlVal
SPi64GGIO1 SPCSO 14		
	CTRL.SPi64GGIO1.SPCSO14	ctlVal
SPi64GGIO1 SPCSO 15		
	CTRL.SPi64GGIO1.SPCSO15	ctlVal
SPi64GGIO1 SPCSO 16		
	CTRL.SPi64GGIO1.SPCSO16	ctlVal
SPi64GGIO1 SPCSO 17		
	CTRL.SPi64GGIO1.SPCSO17	ctlVal
SPi64GGIO1 SPCSO 18		
	CTRL.SPi64GGIO1.SPCSO18	ctlVal
SPi64GGIO1 SPCSO 19		
	CTRL.SPi64GGIO1.SPCSO19	ctlVal
SPi64GGIO1 SPCSO 2		
	CTRL.SPi64GGIO1.SPCSO2	ctlVal

SPi64GGIO1 SPCSO 20		
	CTRL.SPi64GGIO1.SPCSO20	ctIVal
SPi64GGIO1 SPCSO 21		
	CTRL.SPi64GGIO1.SPCSO21	ctIVal
SPi64GGIO1 SPCSO 22		
	CTRL.SPi64GGIO1.SPCSO22	ctIVal
SPi64GGIO1 SPCSO 23		
	CTRL.SPi64GGIO1.SPCSO23	ctIVal
SPi64GGIO1 SPCSO 24		
	CTRL.SPi64GGIO1.SPCSO24	ctIVal
SPi64GGIO1 SPCSO 25		
	CTRL.SPi64GGIO1.SPCSO25	ctIVal
SPi64GGIO1 SPCSO 26		
	CTRL.SPi64GGIO1.SPCSO26	ctIVal
SPi64GGIO1 SPCSO 27		
	CTRL.SPi64GGIO1.SPCSO27	ctIVal
SPi64GGIO1 SPCSO 28		
	CTRL.SPi64GGIO1.SPCSO28	ctIVal
SPi64GGIO1 SPCSO 29		
	CTRL.SPi64GGIO1.SPCSO29	ctIVal
SPi64GGIO1 SPCSO 3		
	CTRL.SPi64GGIO1.SPCSO3	ctIVal
SPi64GGIO1 SPCSO 30		
	CTRL.SPi64GGIO1.SPCSO30	ctIVal
SPi64GGIO1 SPCSO 31		
	CTRL.SPi64GGIO1.SPCSO31	ctIVal
SPi64GGIO1 SPCSO 32		
	CTRL.SPi64GGIO1.SPCSO32	ctIVal
SPi64GGIO1 SPCSO 33		
	CTRL.SPi64GGIO1.SPCSO33	ctIVal
SPi64GGIO1 SPCSO 34		
	CTRL.SPi64GGIO1.SPCSO34	ctIVal
SPi64GGIO1 SPCSO 35		
	CTRL.SPi64GGIO1.SPCSO35	ctIVal
SPi64GGIO1 SPCSO 36		
	CTRL.SPi64GGIO1.SPCSO36	ctIVal
SPi64GGIO1 SPCSO 37		

	CTRL.SPi64GGIO1.SPCSO37	ctlVal
SPI64GGIO1 SPCSO 38		
	CTRL.SPi64GGIO1.SPCSO38	ctlVal
SPI64GGIO1 SPCSO 39		
	CTRL.SPi64GGIO1.SPCSO39	ctlVal
SPI64GGIO1 SPCSO 4		
	CTRL.SPi64GGIO1.SPCSO4	ctlVal
SPI64GGIO1 SPCSO 40		
	CTRL.SPi64GGIO1.SPCSO40	ctlVal
SPI64GGIO1 SPCSO 41		
	CTRL.SPi64GGIO1.SPCSO41	ctlVal
SPI64GGIO1 SPCSO 42		
	CTRL.SPi64GGIO1.SPCSO42	ctlVal
SPI64GGIO1 SPCSO 43		
	CTRL.SPi64GGIO1.SPCSO43	ctlVal
SPI64GGIO1 SPCSO 44		
	CTRL.SPi64GGIO1.SPCSO44	ctlVal
SPI64GGIO1 SPCSO 45		
	CTRL.SPi64GGIO1.SPCSO45	ctlVal
SPI64GGIO1 SPCSO 46		
	CTRL.SPi64GGIO1.SPCSO46	ctlVal
SPI64GGIO1 SPCSO 47		
	CTRL.SPi64GGIO1.SPCSO47	ctlVal
SPI64GGIO1 SPCSO 48		
	CTRL.SPi64GGIO1.SPCSO48	ctlVal
SPI64GGIO1 SPCSO 49		
	CTRL.SPi64GGIO1.SPCSO49	ctlVal
SPI64GGIO1 SPCSO 5		
	CTRL.SPi64GGIO1.SPCSO5	ctlVal
SPI64GGIO1 SPCSO 50		
	CTRL.SPi64GGIO1.SPCSO50	ctlVal
SPI64GGIO1 SPCSO 51		
	CTRL.SPi64GGIO1.SPCSO51	ctlVal
SPI64GGIO1 SPCSO 52		
	CTRL.SPi64GGIO1.SPCSO52	ctlVal
SPI64GGIO1 SPCSO 53		
	CTRL.SPi64GGIO1.SPCSO53	ctlVal

SPi64GGIO1 SPCSO 54		
	CTRL.SPi64GGIO1.SPCSO54	ctIVal
SPi64GGIO1 SPCSO 55		
	CTRL.SPi64GGIO1.SPCSO55	ctIVal
SPi64GGIO1 SPCSO 56		
	CTRL.SPi64GGIO1.SPCSO56	ctIVal
SPi64GGIO1 SPCSO 57		
	CTRL.SPi64GGIO1.SPCSO57	ctIVal
SPi64GGIO1 SPCSO 58		
	CTRL.SPi64GGIO1.SPCSO58	ctIVal
SPi64GGIO1 SPCSO 59		
	CTRL.SPi64GGIO1.SPCSO59	ctIVal
SPi64GGIO1 SPCSO 6		
	CTRL.SPi64GGIO1.SPCSO6	ctIVal
SPi64GGIO1 SPCSO 60		
	CTRL.SPi64GGIO1.SPCSO60	ctIVal
SPi64GGIO1 SPCSO 61		
	CTRL.SPi64GGIO1.SPCSO61	ctIVal
SPi64GGIO1 SPCSO 62		
	CTRL.SPi64GGIO1.SPCSO62	ctIVal
SPi64GGIO1 SPCSO 63		
	CTRL.SPi64GGIO1.SPCSO63	ctIVal
SPi64GGIO1 SPCSO 64		
	CTRL.SPi64GGIO1.SPCSO64	ctIVal
SPi64GGIO1 SPCSO 7		
	CTRL.SPi64GGIO1.SPCSO7	ctIVal
SPi64GGIO1 SPCSO 8		
	CTRL.SPi64GGIO1.SPCSO8	ctIVal
SPi64GGIO1 SPCSO 9		
	CTRL.SPi64GGIO1.SPCSO9	ctIVal

## 1.11 Single Point Outputs

Reyrolle	DOI	DA Group
SPo32GGIO1 Ind 1		
	CTRL.SPo32GGIO1.Ind1	stVal

SPo32GGIO1 Ind 10		
	CTRL.SPo32GGIO1.Ind10	stVal
SPo32GGIO1 Ind 11		
	CTRL.SPo32GGIO1.Ind11	stVal
SPo32GGIO1 Ind 12		
	CTRL.SPo32GGIO1.Ind12	stVal
SPo32GGIO1 Ind 13		
	CTRL.SPo32GGIO1.Ind13	stVal
SPo32GGIO1 Ind 14		
	CTRL.SPo32GGIO1.Ind14	stVal
SPo32GGIO1 Ind 15		
	CTRL.SPo32GGIO1.Ind15	stVal
SPo32GGIO1 Ind 16		
	CTRL.SPo32GGIO1.Ind16	stVal
SPo32GGIO1 Ind 17		
	CTRL.SPo32GGIO1.Ind17	stVal
SPo32GGIO1 Ind 18		
	CTRL.SPo32GGIO1.Ind18	stVal
SPo32GGIO1 Ind 19		
	CTRL.SPo32GGIO1.Ind19	stVal
SPo32GGIO1 Ind 2		
	CTRL.SPo32GGIO1.Ind2	stVal
SPo32GGIO1 Ind 20		
	CTRL.SPo32GGIO1.Ind20	stVal
SPo32GGIO1 Ind 21		
	CTRL.SPo32GGIO1.Ind21	stVal
SPo32GGIO1 Ind 22		
	CTRL.SPo32GGIO1.Ind22	stVal
SPo32GGIO1 Ind 23		
	CTRL.SPo32GGIO1.Ind23	stVal
SPo32GGIO1 Ind 24		
	CTRL.SPo32GGIO1.Ind24	stVal
SPo32GGIO1 Ind 25		
	CTRL.SPo32GGIO1.Ind25	stVal
SPo32GGIO1 Ind 26		
	CTRL.SPo32GGIO1.Ind26	stVal
SPo32GGIO1 Ind 27		



	CTRL.SP032GGIO1.Ind27	stVal
SPo32GGIO1 Ind 28		
	CTRL.SP032GGIO1.Ind28	stVal
SPo32GGIO1 Ind 29		
	CTRL.SP032GGIO1.Ind29	stVal
SPo32GGIO1 Ind 3		
	CTRL.SP032GGIO1.Ind3	stVal
SPo32GGIO1 Ind 30		
	CTRL.SP032GGIO1.Ind30	stVal
SPo32GGIO1 Ind 31		
	CTRL.SP032GGIO1.Ind31	stVal
SPo32GGIO1 Ind 32		
	CTRL.SP032GGIO1.Ind32	stVal
SPo32GGIO1 Ind 4		
	CTRL.SP032GGIO1.Ind4	stVal
SPo32GGIO1 Ind 5		
	CTRL.SP032GGIO1.Ind5	stVal
SPo32GGIO1 Ind 6		
	CTRL.SP032GGIO1.Ind6	stVal
SPo32GGIO1 Ind 7		
	CTRL.SP032GGIO1.Ind7	stVal
SPo32GGIO1 Ind 8		
	CTRL.SP032GGIO1.Ind8	stVal
SPo32GGIO1 Ind 9		
	CTRL.SP032GGIO1.Ind9	stVal

## 1.12 Check Synchronising

Reyrolle	DOI	DA Group
Angle Difference		
	PROT.RSYN1.DifAngClc	mag.f
Angle Out Of Limits		
	PROT.RSYN1.AngInd	stVal
Frequency Difference		
	PROT.RSYN1.DifHzClc	mag.f
Frequency Out Of Limits		

	PROT.RSYN1.HzInd	stVal
In Sync		
	PROT.RSYN1.Rel	stVal
Sync In Progress		
	PROT.RSYN1.SynPrg	stVal
Voltage Out Of Limits		
	PROT.RSYN1.VInd	stVal

## 2 IEC 61850 -> Reyrolle

### 2.1 PROT

#### 2.1.1 LLN0

Beh		
	stVal	Protection Active
		Out of Service
Health		
	stVal	Protection Healthy
Mod		
	stVal	Protection Active
		Out of Service
NamPlt		
	swRev	Software Revision
	vendor	Vendor Name
SGCB		
	ActSG	Active Setting Group 1
		Active Setting Group 2
		Active Setting Group 3
		Active Setting Group 4
	LActTm	Active Setting Group 1
		Active Setting Group 2
		Active Setting Group 3
		Active Setting Group 4
	NumOfSG	Number of 61850 Controllable Setting Groups

#### 2.1.2 RSYN1

AngInd		
	stVal	Angle Out Of Limits
DifAngClc		
	mag.f	Angle Difference
DifHzClc		
	mag.f	Frequency Difference
Health		

	stVal	Protection Healthy
HzInd		
	stVal	Frequency Out Of Limits
Rel		
	stVal	In Sync
SynPrg		
	stVal	Sync In Progress
VInd		
	stVal	Voltage Out Of Limits

## 2.2 MEAS

### 2.2.1 LLN0

Beh		
	stVal	Protection Healthy
		Out of Service
Health		
	stVal	Protection Healthy
Mod		
	stVal	Protection Healthy
		Out of Service
NamPlt		
	swRev	Software Revision
	vendor	Vendor Name

## 2.3 DR

### 2.3.1 LLN0

Beh		
	stVal	Protection Healthy
		Out of Service
Health		
	stVal	Protection Healthy
Mod		
	stVal	Protection Healthy

		Out of Service
NamPit		
	swRev	Software Revision
	vendor	Vendor Name

### 2.3.2 RDRE1

Beh		
	stVal	Protection Healthy
		Out of Service
FltNum		
	stVal	Fault Number
GriFltNum		
	stVal	Grid Fault Number
Health		
	stVal	Protection Healthy
Mod		
	stVal	Protection Healthy
RcdMade		
	stVal	Recording Made

## 2.4 CTRL

### 2.4.1 BI6GGIO1

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Ind1		
	stVal	1
Ind2		
	stVal	2
Ind3		
	stVal	3
Ind4		
	stVal	4
Ind5		

	stVal	5
Ind6		
	stVal	6

### 2.4.2 BO8GGIO1

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Ind1		
	stVal	1
Ind2		
	stVal	2
Ind3		
	stVal	3
Ind4		
	stVal	4
Ind5		
	stVal	5
Ind6		
	stVal	6
Ind7		
	stVal	7
Ind8		
	stVal	8

### 2.4.3 DPDOesGGIO1

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOes 1 Control
	stVal	DPDOes 1 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

--	--	--

#### 2.4.4 DPDOesGGIO2

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOes 2 Control
	stVal	DPDOes 2 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

#### 2.4.5 DPDOesGGIO3

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOes 3 Control
	stVal	DPDOes 3 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

#### 2.4.6 DPDOesGGIO4

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOes 4 Control
	stVal	DPDOes 4 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

**2.4.7 DPDOsGGIO1**

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOs 1 Control
	stVal	DPDOs 1 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

**2.4.8 DPDOsGGIO2**

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOs 2 Control
	stVal	DPDOs 2 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

**2.4.9 DPDOsGGIO3**

Beh		
	stVal	Out of Service
DPCSO		
	Oper.ctlVal	DPDOs 3 Control
	stVal	DPDOs 3 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

**2.4.10 DPDOsGGIO4**

Beh		
	stVal	Out of Service



DPCSO		
	Oper.ctlVal	DPDOs 4 Control
	stVal	DPDOs 4 Status
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

#### 2.4.11 DPi8GGIO1

Beh		
	stVal	Out of Service
DPCSO1		
	ctlVal	DPi8GGIO1 DPCSO 1
DPCSO2		
	ctlVal	DPi8GGIO1 DPCSO 2
DPCSO3		
	ctlVal	DPi8GGIO1 DPCSO 3
DPCSO4		
	ctlVal	DPi8GGIO1 DPCSO 4
DPCSO5		
	ctlVal	DPi8GGIO1 DPCSO 5
DPCSO6		
	ctlVal	DPi8GGIO1 DPCSO 6
DPCSO7		
	ctlVal	DPi8GGIO1 DPCSO 7
DPCSO8		
	ctlVal	DPi8GGIO1 DPCSO 8
Health		
	stVal	Protection Healthy

#### 2.4.12 DPi8GGIO2

Beh		
	stVal	Out of Service
DPCSO1		
	ctlVal	DPi8GGIO2 DPCSO 1
DPCSO2		

	ctlVal	DPi8GGIO2 DPCSO 2
DPCSO3		
	ctlVal	DPi8GGIO2 DPCSO 3
DPCSO4		
	ctlVal	DPi8GGIO2 DPCSO 4
DPCSO5		
	ctlVal	DPi8GGIO2 DPCSO 5
DPCSO6		
	ctlVal	DPi8GGIO2 DPCSO 6
DPCSO7		
	ctlVal	DPi8GGIO2 DPCSO 7
DPCSO8		
	ctlVal	DPi8GGIO2 DPCSO 8
Health		
	stVal	Protection Healthy

### 2.4.13 DPo8GGIO1

Beh		
	stVal	Out of Service
DPCSO1		
	stVal	DPo8GGIO1 Ind 1
DPCSO2		
	stVal	DPo8GGIO1 Ind 2
DPCSO3		
	stVal	DPo8GGIO1 Ind 3
DPCSO4		
	stVal	DPo8GGIO1 Ind 4
DPCSO5		
	stVal	DPo8GGIO1 Ind 5
DPCSO6		
	stVal	DPo8GGIO1 Ind 6
DPCSO7		
	stVal	DPo8GGIO1 Ind 7
DPCSO8		
	stVal	DPo8GGIO1 Ind 8
Health		

	stVal	Protection Healthy

**2.4.14 DPo8GGIO2**

Beh		
	stVal	Out of Service
DPCSO1		
	stVal	DPo8GGIO2 Ind 1
DPCSO2		
	stVal	DPo8GGIO2 Ind 2
DPCSO3		
	stVal	DPo8GGIO2 Ind 3
DPCSO4		
	stVal	DPo8GGIO2 Ind 4
DPCSO5		
	stVal	DPo8GGIO2 Ind 5
DPCSO6		
	stVal	DPo8GGIO2 Ind 6
DPCSO7		
	stVal	DPo8GGIO2 Ind 7
DPCSO8		
	stVal	DPo8GGIO2 Ind 8
Health		
	stVal	Protection Healthy

**2.4.15 E4GGIO1**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Ind1		
	stVal	1
Ind2		
	stVal	2
Ind3		
	stVal	3
Ind4		

	stVal	4

**2.4.16 L9GGIO1**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Ind1		
	stVal	1
Ind2		
	stVal	2
Ind3		
	stVal	3
Ind4		
	stVal	4
Ind5		
	stVal	5
Ind6		
	stVal	6
Ind7		
	stVal	7
Ind8		
	stVal	8
Ind9		
	stVal	9

**2.4.17 LLN0**

Beh		
	stVal	Out of Service
		Protection Healthy
Health		
	stVal	Protection Healthy
LEDRs		
	stVal	LED Reset
Loc		
	stVal	Local Mode

Mod		
	stVal	Out of Service
		Protection Healthy
NamPit		
	swRev	Software Revision
	vendor	Vendor Name

**2.4.18 SPDOesGGIO1**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOes 1 Control
	stVal	SPDOes 1 Status

**2.4.19 SPDOesGGIO2**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOes 2 Control
	stVal	SPDOes 2 Status

**2.4.20 SPDOesGGIO3**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode

SPCSO		
	Oper.ctlVal	SPDOes 3 Control
	stVal	SPDOes 3 Status

**2.4.21 SPDOesGGIO4**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOes 4 Control
	stVal	SPDOes 4 Status

**2.4.22 SPDOnsGGIO1**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOns 1 Control
	stVal	SPDOns 1 Status

**2.4.23 SPDOnsGGIO2**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOns 2 Control
	stVal	SPDOns 2 Status

--	--	--

**2.4.24 SPDOnsGGIO3**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOns 3 Control
	stVal	SPDOns 3 Status

**2.4.25 SPDOnsGGIO4**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Loc		
	stVal	Local Mode
SPCSO		
	Oper.ctlVal	SPDOns 4 Control
	stVal	SPDOns 4 Status

**2.4.26 SPi64GGIO1**

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
SPCSO1		
	ctlVal	SPi64GGIO1 SPCSO 1
SPCSO10		
	ctlVal	SPi64GGIO1 SPCSO 10
SPCSO11		
	ctlVal	SPi64GGIO1 SPCSO 11
SPCSO12		
	ctlVal	SPi64GGIO1 SPCSO 12

SPCSO13		
	ctlVal	SPi64GGIO1 SPCSO 13
SPCSO14		
	ctlVal	SPi64GGIO1 SPCSO 14
SPCSO15		
	ctlVal	SPi64GGIO1 SPCSO 15
SPCSO16		
	ctlVal	SPi64GGIO1 SPCSO 16
SPCSO17		
	ctlVal	SPi64GGIO1 SPCSO 17
SPCSO18		
	ctlVal	SPi64GGIO1 SPCSO 18
SPCSO19		
	ctlVal	SPi64GGIO1 SPCSO 19
SPCSO2		
	ctlVal	SPi64GGIO1 SPCSO 2
SPCSO20		
	ctlVal	SPi64GGIO1 SPCSO 20
SPCSO21		
	ctlVal	SPi64GGIO1 SPCSO 21
SPCSO22		
	ctlVal	SPi64GGIO1 SPCSO 22
SPCSO23		
	ctlVal	SPi64GGIO1 SPCSO 23
SPCSO24		
	ctlVal	SPi64GGIO1 SPCSO 24
SPCSO25		
	ctlVal	SPi64GGIO1 SPCSO 25
SPCSO26		
	ctlVal	SPi64GGIO1 SPCSO 26
SPCSO27		
	ctlVal	SPi64GGIO1 SPCSO 27
SPCSO28		
	ctlVal	SPi64GGIO1 SPCSO 28
SPCSO29		
	ctlVal	SPi64GGIO1 SPCSO 29
SPCSO3		



	ctlVal	SPi64GGIO1 SPCSO 3
SPCSO30		
	ctlVal	SPi64GGIO1 SPCSO 30
SPCSO31		
	ctlVal	SPi64GGIO1 SPCSO 31
SPCSO32		
	ctlVal	SPi64GGIO1 SPCSO 32
SPCSO33		
	ctlVal	SPi64GGIO1 SPCSO 33
SPCSO34		
	ctlVal	SPi64GGIO1 SPCSO 34
SPCSO35		
	ctlVal	SPi64GGIO1 SPCSO 35
SPCSO36		
	ctlVal	SPi64GGIO1 SPCSO 36
SPCSO37		
	ctlVal	SPi64GGIO1 SPCSO 37
SPCSO38		
	ctlVal	SPi64GGIO1 SPCSO 38
SPCSO39		
	ctlVal	SPi64GGIO1 SPCSO 39
SPCSO4		
	ctlVal	SPi64GGIO1 SPCSO 4
SPCSO40		
	ctlVal	SPi64GGIO1 SPCSO 40
SPCSO41		
	ctlVal	SPi64GGIO1 SPCSO 41
SPCSO42		
	ctlVal	SPi64GGIO1 SPCSO 42
SPCSO43		
	ctlVal	SPi64GGIO1 SPCSO 43
SPCSO44		
	ctlVal	SPi64GGIO1 SPCSO 44
SPCSO45		
	ctlVal	SPi64GGIO1 SPCSO 45
SPCSO46		
	ctlVal	SPi64GGIO1 SPCSO 46

SPCSO47		
	ctlVal	SPi64GGIO1 SPCSO 47
SPCSO48		
	ctlVal	SPi64GGIO1 SPCSO 48
SPCSO49		
	ctlVal	SPi64GGIO1 SPCSO 49
SPCSO5		
	ctlVal	SPi64GGIO1 SPCSO 5
SPCSO50		
	ctlVal	SPi64GGIO1 SPCSO 50
SPCSO51		
	ctlVal	SPi64GGIO1 SPCSO 51
SPCSO52		
	ctlVal	SPi64GGIO1 SPCSO 52
SPCSO53		
	ctlVal	SPi64GGIO1 SPCSO 53
SPCSO54		
	ctlVal	SPi64GGIO1 SPCSO 54
SPCSO55		
	ctlVal	SPi64GGIO1 SPCSO 55
SPCSO56		
	ctlVal	SPi64GGIO1 SPCSO 56
SPCSO57		
	ctlVal	SPi64GGIO1 SPCSO 57
SPCSO58		
	ctlVal	SPi64GGIO1 SPCSO 58
SPCSO59		
	ctlVal	SPi64GGIO1 SPCSO 59
SPCSO6		
	ctlVal	SPi64GGIO1 SPCSO 6
SPCSO60		
	ctlVal	SPi64GGIO1 SPCSO 60
SPCSO61		
	ctlVal	SPi64GGIO1 SPCSO 61
SPCSO62		
	ctlVal	SPi64GGIO1 SPCSO 62
SPCSO63		

	ctVal	SPi64GGIO1 SPCSO 63
SPCSO64		
	ctVal	SPi64GGIO1 SPCSO 64
SPCSO7		
	ctVal	SPi64GGIO1 SPCSO 7
SPCSO8		
	ctVal	SPi64GGIO1 SPCSO 8
SPCSO9		
	ctVal	SPi64GGIO1 SPCSO 9

#### 2.4.27 SPo32GGIO1

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Ind1		
	stVal	SPo32GGIO1 Ind 1
Ind10		
	stVal	SPo32GGIO1 Ind 10
Ind11		
	stVal	SPo32GGIO1 Ind 11
Ind12		
	stVal	SPo32GGIO1 Ind 12
Ind13		
	stVal	SPo32GGIO1 Ind 13
Ind14		
	stVal	SPo32GGIO1 Ind 14
Ind15		
	stVal	SPo32GGIO1 Ind 15
Ind16		
	stVal	SPo32GGIO1 Ind 16
Ind17		
	stVal	SPo32GGIO1 Ind 17
Ind18		
	stVal	SPo32GGIO1 Ind 18
Ind19		

	stVal	SPo32GGIO1 Ind 19
Ind2		
	stVal	SPo32GGIO1 Ind 2
Ind20		
	stVal	SPo32GGIO1 Ind 20
Ind21		
	stVal	SPo32GGIO1 Ind 21
Ind22		
	stVal	SPo32GGIO1 Ind 22
Ind23		
	stVal	SPo32GGIO1 Ind 23
Ind24		
	stVal	SPo32GGIO1 Ind 24
Ind25		
	stVal	SPo32GGIO1 Ind 25
Ind26		
	stVal	SPo32GGIO1 Ind 26
Ind27		
	stVal	SPo32GGIO1 Ind 27
Ind28		
	stVal	SPo32GGIO1 Ind 28
Ind29		
	stVal	SPo32GGIO1 Ind 29
Ind3		
	stVal	SPo32GGIO1 Ind 3
Ind30		
	stVal	SPo32GGIO1 Ind 30
Ind31		
	stVal	SPo32GGIO1 Ind 31
Ind32		
	stVal	SPo32GGIO1 Ind 32
Ind4		
	stVal	SPo32GGIO1 Ind 4
Ind5		
	stVal	SPo32GGIO1 Ind 5
Ind6		
	stVal	SPo32GGIO1 Ind 6

Ind7		
	stVal	SPo32GGIO1 Ind 7
Ind8		
	stVal	SPo32GGIO1 Ind 8
Ind9		
	stVal	SPo32GGIO1 Ind 9

#### 2.4.28 V8GGIO1

Beh		
	stVal	Out of Service
Health		
	stVal	Protection Healthy
Ind1		
	stVal	1
Ind2		
	stVal	2
Ind3		
	stVal	3
Ind4		
	stVal	4
Ind5		
	stVal	5
Ind6		
	stVal	6
Ind7		
	stVal	7
Ind8		
	stVal	8