

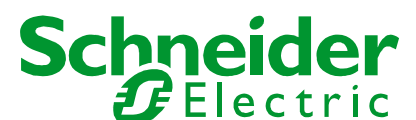
# MiCOM P138

## Directional Overcurrent Protection for Rail Applications

# Address Assignment List

This document does not replace the Technical Manual

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**Index:** A  
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## Logical Device: Control

## 1 Address Assignment List

## 1.1 Logical Device: Control

Logical Node	Data Object	CDC	Data Attr.	Address	Description
LLN0	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
LPHD1	PhyNam	DPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
			serNum	002.124	DVICE : F number
	PhyHealth	INS	stVal	005.029	IEC : Healthy

## 1.2 Logical Device: Measurements

Logical Node	Data Object	CDC	Data Attr.	Address	Description
LLN0	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
LPHD1	PhyNam	INC	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
			serNum	002.124	DVICE : F number
	PhyHealth	INS	stVal	005.029	IEC : Healthy
MmuPriMMXN1	Vol	MV	mag	004.112	MAIN : Voltage prim.
	Hz	MV	mag	004.040	MAIN : Frequency f
	Amp	MV	mag	004.110	MAIN : Current I prim.
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
MmuPriMMXN2	Amp	MV	mag	004.043	MAIN : Current IN prim.
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
		swRev	002.120	DVICE : Software version	
MmuSecMMXN1	LodAng	MV	mag	004.078	MAIN : Load angle p.u.
	Amp	MV	mag	004.111	MAIN : Current I p.u.
	Vol	MV	mag	004.113	MAIN : Voltage p.u.
	Hz	MV	mag	004.070	MAIN : Frequency f p.u.
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
MmuSecMMXN2	Amp	MV	mag	004.044	MAIN : Current IN p.u.
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version

### 1.3 Logical Device: Protection

Logical Node	Data Object	CDC	Data Attr.	Address	Description
LLN0	Mod	INC	stVal	005.027	IEC : Mode
	ModOper	OPER	ctlVal	003.030	MAIN : Protection enabled
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
LPHD1	PhyNam	INC	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
			serNum	002.124	DVICE : F number
	PhyHealth	INS	stVal	005.029	IEC : Healthy
DtpPhsPTOC1	Mod	INC	stVal	005.020	IEC : PhsPTOC1.Mode
	ModOper	OPER	ctlVal	031.135	DTOC : General enable USER
	Beh	INS	stVal	005.048	IEC : PhPTOC1.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	035.108	DTOC : Starting I>
			dirGeneral	000.216	IEC : PHRDIR.DIR
	Op	ACT	general	035.114	DTOC : Trip signal tI>
	Blk	SPS	stVal	035.120	DTOC : Blocking tI> EXT
DtpPhsPTOC2	Mod	INC	stVal	005.052	IEC : PhPTOC2.Mode
	ModOper	OPER	ctlVal	031.135	DTOC : General enable USER
	Beh	INS	stVal	005.053	IEC : PhPTOC2.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	035.109	DTOC : Starting I>>
			dirGeneral	000.216	IEC : PHRDIR.DIR
	Op	ACT	general	035.115	DTOC : Trip signal tI>>
	Blk	SPS	stVal	035.121	DTOC : Blocking tI>> EXT
DtpEftPTOC1	Mod	INC	stVal	006.117	IEC : DtpEftPTOC1.Mode
	ModOper	OPER	ctlVal	031.138	DTOCN : General enable USER
	Beh	INS	stVal	006.120	IEC : DtpEftPTOC1.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version

## Logical Device: Protection

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Str	ACD	general	040.077	DTOCN : Starting IN>
			dirGeneral	000.226	IEC : RESRDIR.DIR
	Op	ACT	general	041.021	DTOCN : Trip signal tIN>
	Blk	SPS	stVal	041.063	DTOCN : Blocking tIN> EXT
DtpEftPTOC2	Mod	INC	stVal	006.118	IEC : DtpEftPTOC2.Mode
	ModOper	OPER	ctlVal	031.138	DTOCN : General enable USER
	Beh	INS	stVal	006.121	IEC : DtpEftPTOC2.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	040.041	DTOCN : Starting IN>>
			dirGeneral	000.226	IEC : RESRDIR.DIR
	Op	ACT	general	040.028	DTOCN : Trip signal tIN>>
	Blk	SPS	stVal	041.064	DTOCN : Blocking tIN>> EXT
DtpEftPTOC3	Blk	SPS	stVal	035.201	DTOCN : Block. tIN>H EXT
	Mod	INC	stVal	006.119	IEC : DtpEftPTOC3.Mode
	ModOper	OPER	ctlVal	031.138	DTOCN : General enable USER
	Beh	INS	stVal	006.122	IEC : DtpEftPTOC3.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	035.195	DTOCN : Starting IN>H
			dirGeneral	000.226	IEC : RESRDIR.DIR
	Op	ACT	general	035.198	DTOCN : Trip signal tIN>H
ItpPhsPTOC1	Mod	INC	stVal	000.125	IEC : PhPTOC5.Mode
	ModOper	OPER	ctlVal	017.096	IDMT : General enable USER
	Beh	INS	stVal	000.128	IEC : PhPTOC5.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	040.080	IDMT : Starting Iref>
			dirGeneral	006.168	IEC : ItpPhsRDIR1.Dir
	Op	ACT	general	040.084	IDMT : Trip signal tIref>
	Blk	SPS	stVal	040.101	IDMT : Block. tIref> EXT
FrqPTOF1	Mod	INC	stVal	000.194	IEC : PTOF1.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	000.196	IEC : PTOF1.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.107	f<> : Starting f1
	Op	ACT	general	042.111	f<> : Trip signal f1
	Blk	SPS	stVal	042.103	f<> : Blocking f1 EXT
FrqPTOF2	Mod	INC	stVal	000.195	IEC : PTOF2.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	000.197	IEC : PTOF2.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.115	f<> : Starting f2

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Op	ACT	general	042.119	f<> : Trip signal f2
	Blk	SPS	stVal	042.104	f<> : Blocking f2 EXT
FrqPTOF3	Mod	INC	stVal	001.241	IEC : PTOF3.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	001.243	IEC : PTOF3.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.123	f<> : Starting f3
	Op	ACT	general	042.127	f<> : Trip signal f3
	Blk	SPS	stVal	042.105	f<> : Blocking f3 EXT
FrqPTOF4	Mod	INC	stVal	001.242	IEC : PTOF4.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	001.244	IEC : PTOF4.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.131	f<> : Starting f4
	Op	ACT	general	042.135	f<> : Trip signal f4
	Blk	SPS	stVal	042.106	f<> : Blocking f4 EXT
VtpPhsPTOV1	Blk	SPS	stVal	041.068	V<> : Blocking tV> EXT
	Mod	INC	stVal	000.151	IEC : PhPTOV1.Mode
	ModOper	OPER	ctlVal	023.030	V<> : General enable USER
	Beh	INS	stVal	000.165	IEC : PhPTOV1.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	041.030	V<> : Starting V>
	Op	ACT	general	041.034	V<> : tV> elapsed
VtpPhsPTOV2	Mod	INC	stVal	000.154	IEC : PhPTOV2.Mode
	ModOper	OPER	ctlVal	023.030	V<> : General enable USER
	Beh	INS	stVal	000.166	IEC : PhPTOV2.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	041.096	V<> : Starting V>>
	Op	ACT	general	041.035	V<> : tV>> elapsed
	Blk	SPS	stVal	041.069	V<> : Blocking tV>> EXT
PTRC1	TrBlk	ACT	general	021.013	MAIN : Trip cmd. blocked
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.000	MAIN : General starting
			dirGeneral	005.030	IEC : KURI.Coded Direction
	Tr	ACT	general	039.011	MAIN : M-trip command 1
PTRC2	TrBlk	ACT	general	021.013	MAIN : Trip cmd. blocked
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior

## Logical Device: Protection

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.000	MAIN : General starting
			dirGeneral	005.030	IEC : KURI.Coded Direction
	Tr	ACT	general	039.012	MAIN : R-trip command 1
PTRC3	TrBlk	ACT	general	021.013	MAIN : Trip cmd. blocked
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.000	MAIN : General starting
			dirGeneral	005.030	IEC : KURI.Coded Direction
	Tr	ACT	general	039.013	MAIN : B-trip command 1
PTRC4	TrBlk	ACT	general	021.013	MAIN : Trip cmd. blocked
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.000	MAIN : General starting
			dirGeneral	005.030	IEC : KURI.Coded Direction
	Tr	ACT	general	039.058	MAIN : M-trip command 2
PTRC5	TrBlk	ACT	general	021.013	MAIN : Trip cmd. blocked
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.000	MAIN : General starting
			dirGeneral	005.030	IEC : KURI.Coded Direction
	Tr	ACT	general	039.059	MAIN : R-trip command 2
PTRC6	TrBlk	ACT	general	021.013	MAIN : Trip cmd. blocked
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.000	MAIN : General starting
			dirGeneral	005.030	IEC : KURI.Coded Direction
	Tr	ACT	general	039.060	MAIN : B-trip command 2
ThmPTTR1	Mod	INC	stVal	000.189	IEC : ThPTTR.Mode
	ModOper	OPER	ctlVal	022.050	THERM : General enable USER
	Beh	INS	stVal	000.191	IEC : ThPTTR.Beh
	Health	INS	stVal	006.156	IEC : ThmPTTR.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	041.108	THERM : Starting k*Iref>
	Op	ACT	general	039.020	THERM : Trip signal

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	AlmThm	ACT	general	039.025	THERM : Warning
	Blk	SPS	stVal	041.074	THERM : Replica block EXT
	BlkThm	SPS	stVal	039.024	THERM : Reclosure blocked
FrqPTUF1	Mod	INC	stVal	000.199	IEC : PTUF1.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	000.201	IEC : PTUF1.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.107	f<> : Starting f1
	Op	ACT	general	042.111	f<> : Trip signal f1
	Blk	SPS	stVal	042.103	f<> : Blocking f1 EXT
FrqPTUF2	Mod	INC	stVal	000.200	IEC : PTUF2.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	000.202	IEC : PTUF2.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.115	f<> : Starting f2
	Op	ACT	general	042.119	f<> : Trip signal f2
	Blk	SPS	stVal	042.104	f<> : Blocking f2 EXT
FrqPTUF3	Mod	INC	stVal	001.245	IEC : PTUF3.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	001.247	IEC : PTUF3.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.123	f<> : Starting f3
	Op	ACT	general	042.127	f<> : Trip signal f3
	Blk	SPS	stVal	042.105	f<> : Blocking f3 EXT
FrqPTUF4	Mod	INC	stVal	001.246	IEC : PTUF4.Mod
	ModOper	OPER	ctlVal	023.031	f<> : General enable USER
	Beh	INS	stVal	001.248	IEC : PTUF4.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	042.131	f<> : Starting f4
	Op	ACT	general	042.135	f<> : Trip signal f4
	Blk	SPS	stVal	042.106	f<> : Blocking f4 EXT
VtpPhsPTUV1	Mod	INC	stVal	000.174	IEC : PhPTUV1.Mode
	ModOper	OPER	ctlVal	023.030	V<> : General enable USER
	Beh	INS	stVal	000.181	IEC : PhPTUV1.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	041.037	V<> : Starting V<
	Op	ACT	general	041.041	V<> : tV< elapsed
	Blk	SPS	stVal	041.070	V<> : Blocking tV< EXT
VtpPhsPTUV2	Mod	INC	stVal	000.175	IEC : PhPTUV2.Mode
	ModOper	OPER	ctlVal	023.030	V<> : General enable USER



Logical Device: Protection

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Beh	INS	stVal	000.182	IEC : PhPTUV2.Beh
	Health	INS	stVal	000.131	IEC : PTOV.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	041.099	V<> : Starting V<<
	Op	ACT	general	041.042	V<> : tV<< elapsed
	Blk	SPS	stVal	041.071	V<> : Blocking tV<< EXT
RBRF1	Mod	INC	stVal	000.217	IEC : RBRF.Mod
	ModOper	OPER	ctlVal	022.100	CBF_1 : General enable USER
	Beh	INS	stVal	000.218	IEC : RBRF.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	006.204	IEC : RBRF1.Str
	OpEx	ACT	general	039.023	CBF_1 : B-trip signal
	OpIn	ACT	general	039.022	CBF_1 : R-trip signal
RBRF2	Mod	INC	stVal	000.217	IEC : RBRF.Mod
	ModOper	OPER	ctlVal	022.100	CBF_1 : General enable USER
	Beh	INS	stVal	000.218	IEC : RBRF.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.107	CBF_1 : CB closed sig. EXT
			dirGeneral	005.030	IEC : KURI.Coded Direction
	OpEx	ACT	general	039.000	CBF_1 : CB superv. signal
RBRF3	Mod	INC	stVal	000.217	IEC : RBRF.Mod
	ModOper	OPER	ctlVal	022.101	CBF_2 : General enable USER
	Beh	INS	stVal	000.218	IEC : RBRF.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	006.205	IEC : RBRF3.Str
	OpEx	ACT	general	040.104	CBF_2 : B-trip signal
	OpIn	ACT	general	040.089	CBF_2 : R-trip signal
RBRF4	Mod	INC	stVal	000.217	IEC : RBRF.Mod
	ModOper	OPER	ctlVal	022.101	CBF_2 : General enable USER
	Beh	INS	stVal	000.218	IEC : RBRF.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Str	ACD	general	036.108	CBF_2 : CB closed sig. EXT
			dirGeneral	005.030	IEC : KURI.Coded Direction
	OpEx	ACT	general	039.039	CBF_2 : CB superv. signal
DtpPhsRDIR1	Mod	INC	stVal	000.213	IEC : RDIR.Mod
	ModOper	OPER	ctlVal	031.131	DTOC : Direction measurem.
	Beh	INS	stVal	000.214	IEC : RDIR.Beh
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Dir	ACD	general	000.215	IEC : PHRDIR.START

Logical Node	Data Object	CDC	Data Attr.	Address	Description
			dirGeneral	000.216	IEC : PHRDIR.DIR
DtpPhsRDIR2	Mod	INC	stVal	006.157	IEC : DtpPhsRDIR2.Mod
	ModOper	OPER	ctlVal	031.131	DTOC : Direction measurem.
	Beh	INS	stVal	006.158	IEC : DtpPhsRDIR2.Beh
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Dir	ACD	general	006.159	IEC : DtpPhsRDIR2.Start
			dirGeneral	006.164	IEC : DtpPhsRDIR2.Dir
ItpPhsRDIR1	Mod	INC	stVal	006.165	IEC : ItpPhsRDIR1.Mod
	ModOper	OPER	ctlVal	017.109	IDMT : Direction measurem.
	Beh	INS	stVal	006.166	IEC : ItpPhsRDIR1.Beh
	Health	INS	stVal	000.124	IEC : MMXU.HEALTH
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Dir	ACD	general	006.167	IEC : ItpPhsRDIR1.Start
			dirGeneral	006.168	IEC : ItpPhsRDIR1.Dir

## 1.4 Logical Device: Records

Logical Node	Data Object	CDC	Data Attr.	Address	Description
LLN0	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
LPHD1	PhyNam	INC	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
			serNum	002.124	DVICE : F number
	PhyHealth	INS	stVal	005.029	IEC : Healthy
RDRE1	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	RcdMade	SPS	stVal	000.227	IEC : RDRE.RcdMade
	FltNum	INS	stVal	004.020	FT_RC : No. of faults
	GriFltNum	INS	stVal	004.010	FT_RC : No. system disturb.
	RcdStr	SPS	stVal	035.000	FT_RC : Record. in progress

## Logical Device: System

## 1.5 Logical Device: System

## 1.5.1 SETTING-GROUP-CONTROL-BLOCK class model

The SETTING-GROUP-CONTROL-BLOCK (SGCB) allows the user to switch between the four pre-set parameter subsets (PS) during operation without interrupting the protection function. This Data Object (DO) can be found in System/LLN0.SGCB.

The SGCB class contains five mandatory DO. At this time, three of them are supported by the software.

Attribute name	Attribute type	Description	Status
NumOfSG	INT8U	Number of available SGs	SUPPORTED
ActSG	INT8U	SG currently in use	SUPPORTED
EditSG	INT8U	SG currently in edit mode	NOT SUPPORTED
CnfEdit	BOOLEAN	Confirm the edit process	NOT SUPPORTED
LActTm	TimeStamp	Time of the last ActSG processing (use of service SelectActiveSG)	SUPPORTED

In conformance with the IEC 61850 standard, a client shall use the service SelectActiveSG to activate any of the four PSs. This service is virtually a write operation on the Data Attribute (DA) ActSG with the corresponding PS value. A service request is acknowledged with a positive response (write operation succeeded) if the service was used with valid SGCBReference (System/LLN0.SGCB) and a valid SettingGroupNumber (1 to 4). Otherwise the response is negative (write operation failed). The SGCB doesn't offer any reporting mechanism. The value of the active PS can be obtained by reading the value of the Attribute ActSG. To enable spontaneous reporting of this value, for example in case of PS switch on the local control panel, a private DO CurSG (Current Setting Group) has been added to the logical node System\LLN0. The reporting behaviour of this status information can be set using the DO System\LLN0.urcbST.

## 1.5.2 System: List of Logical Nodes

Logical Node	Data Object	CDC	Data Attr.	Address	Description
LLN0	SGCB	SGC	ActSG	003.062	PSS : Actual param. subset
	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
			configRev	-	
	Loc	SPS	stVal	-	
	LEDRs	SPC	stVal	021.010	MAIN : Reset indicat. USER
	LEDRsOper	OPER	ctlVal	021.010	MAIN : Reset indicat. USER
GosGGIO1	Mod	INC	stVal	001.228	IEC : Logik.Mod
	Beh	INS	stVal	001.229	IEC : Logik.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Ind1	SPS	stVal	106.200	GOOSE : Input 1 state
	Ind2	SPS	stVal	106.201	GOOSE : Input 2 state
	Ind3	SPS	stVal	106.202	GOOSE : Input 3 state

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Ind4	SPS	stVal	106.203	GOOSE : Input 4 state
	Ind5	SPS	stVal	106.204	GOOSE : Input 5 state
	Ind6	SPS	stVal	106.205	GOOSE : Input 6 state
	Ind7	SPS	stVal	106.206	GOOSE : Input 7 state
	Ind8	SPS	stVal	106.207	GOOSE : Input 8 state
	Ind9	SPS	stVal	106.208	GOOSE : Input 9 state
	Ind10	SPS	stVal	106.209	GOOSE : Input 10 state
	Ind11	SPS	stVal	106.210	GOOSE : Input 11 state
	Ind12	SPS	stVal	106.211	GOOSE : Input 12 state
	Ind13	SPS	stVal	106.212	GOOSE : Input 13 state
	Ind14	SPS	stVal	106.213	GOOSE : Input 14 state
	Ind15	SPS	stVal	106.214	GOOSE : Input 15 state
	Ind16	SPS	stVal	106.215	GOOSE : Input 16 state
GosGGIO2	Mod	INC	stVal	001.228	IEC : Logik.Mod
	Beh	INS	stVal	001.229	IEC : Logik.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Ind1	SPS	stVal	106.010	GOOSE : Output 1 state
	Ind2	SPS	stVal	106.012	GOOSE : Output 2 state
	Ind3	SPS	stVal	106.014	GOOSE : Output 3 state
	Ind4	SPS	stVal	106.016	GOOSE : Output 4 state
	Ind5	SPS	stVal	106.018	GOOSE : Output 5 state
	Ind6	SPS	stVal	106.020	GOOSE : Output 6 state
	Ind7	SPS	stVal	106.022	GOOSE : Output 7 state
	Ind8	SPS	stVal	106.024	GOOSE : Output 8 state
	Ind9	SPS	stVal	106.026	GOOSE : Output 9 state
	Ind10	SPS	stVal	106.028	GOOSE : Output 10 state
	Ind11	SPS	stVal	106.030	GOOSE : Output 11 state
	Ind12	SPS	stVal	106.032	GOOSE : Output 12 state
	Ind13	SPS	stVal	106.034	GOOSE : Output 13 state
	Ind14	SPS	stVal	106.036	GOOSE : Output 14 state
	Ind15	SPS	stVal	106.038	GOOSE : Output 15 state
	Ind16	SPS	stVal	106.040	GOOSE : Output 16 state
	Ind17	SPS	stVal	106.042	GOOSE : Output 17 state
	Ind18	SPS	stVal	106.044	GOOSE : Output 18 state
	Ind19	SPS	stVal	106.046	GOOSE : Output 19 state
	Ind20	SPS	stVal	106.048	GOOSE : Output 20 state
	Ind21	SPS	stVal	106.050	GOOSE : Output 21 state
	Ind22	SPS	stVal	106.052	GOOSE : Output 22 state
	Ind23	SPS	stVal	106.054	GOOSE : Output 23 state
	Ind24	SPS	stVal	106.056	GOOSE : Output 24 state
	Ind25	SPS	stVal	106.058	GOOSE : Output 25 state
	Ind26	SPS	stVal	106.060	GOOSE : Output 26 state
	Ind27	SPS	stVal	106.062	GOOSE : Output 27 state
	Ind28	SPS	stVal	106.064	GOOSE : Output 28 state
	Ind29	SPS	stVal	106.066	GOOSE : Output 29 state
	Ind30	SPS	stVal	106.068	GOOSE : Output 30 state
	Ind31	SPS	stVal	106.070	GOOSE : Output 31 state
	Ind32	SPS	stVal	106.072	GOOSE : Output 32 state

Logical Device: System

Logical Node	Data Object	CDC	Data Attr.	Address	Description	
PloGGIO1	Mod	INC	stVal	001.228	IEC : Logik.Mod	
	Beh	INS	stVal	001.229	IEC : Logik.Beh	
	Health	INS	stVal	005.029	IEC : Healthy	
	NamPlt		LPL	vendor	003.183	PC : Name of manufacturer
				swRev	002.120	DVICE : Software version
	Ind1	SPS	stVal	034.000	LOGIC : Input 1 EXT	
	Ind2	SPS	stVal	034.001	LOGIC : Input 2 EXT	
	Ind3	SPS	stVal	034.002	LOGIC : Input 3 EXT	
	Ind4	SPS	stVal	034.003	LOGIC : Input 4 EXT	
	Ind5	SPS	stVal	034.004	LOGIC : Input 5 EXT	
	Ind6	SPS	stVal	034.005	LOGIC : Input 6 EXT	
	Ind7	SPS	stVal	034.006	LOGIC : Input 7 EXT	
	Ind8	SPS	stVal	034.007	LOGIC : Input 8 EXT	
	Ind9	SPS	stVal	034.008	LOGIC : Input 9 EXT	
	Ind10	SPS	stVal	034.009	LOGIC : Input 10 EXT	
	Ind11	SPS	stVal	034.010	LOGIC : Input 11 EXT	
Ind12	SPS	stVal	034.011	LOGIC : Input 12 EXT		
PloGGIO2	Mod	INC	stVal	001.228	IEC : Logik.Mod	
	Beh	INS	stVal	001.229	IEC : Logik.Beh	
	Health	INS	stVal	005.029	IEC : Healthy	
	NamPlt		LPL	vendor	003.183	PC : Name of manufacturer
				swRev	002.120	DVICE : Software version
	Ind1	SPS	stVal	042.032	LOGIC : Output 1	
	Ind2	SPS	stVal	042.034	LOGIC : Output 2	
	Ind3	SPS	stVal	042.036	LOGIC : Output 3	
	Ind4	SPS	stVal	042.038	LOGIC : Output 4	
	Ind5	SPS	stVal	042.040	LOGIC : Output 5	
	Ind6	SPS	stVal	042.042	LOGIC : Output 6	
	Ind7	SPS	stVal	042.044	LOGIC : Output 7	
	Ind8	SPS	stVal	042.046	LOGIC : Output 8	
	Ind9	SPS	stVal	042.048	LOGIC : Output 9	
	Ind10	SPS	stVal	042.050	LOGIC : Output 10	
	Ind11	SPS	stVal	042.052	LOGIC : Output 11	
Ind12	SPS	stVal	042.054	LOGIC : Output 12		
Ind13	SPS	stVal	042.056	LOGIC : Output 13		
Ind14	SPS	stVal	042.058	LOGIC : Output 14		
Ind15	SPS	stVal	042.060	LOGIC : Output 15		
Ind16	SPS	stVal	042.062	LOGIC : Output 16		
Ind17	SPS	stVal	042.064	LOGIC : Output 17		
Ind18	SPS	stVal	042.066	LOGIC : Output 18		
Ind19	SPS	stVal	042.068	LOGIC : Output 19		
Ind20	SPS	stVal	042.070	LOGIC : Output 20		
Ind21	SPS	stVal	042.072	LOGIC : Output 21		
Ind22	SPS	stVal	042.074	LOGIC : Output 22		
Ind23	SPS	stVal	042.076	LOGIC : Output 23		
Ind24	SPS	stVal	042.078	LOGIC : Output 24		

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Ind25	SPS	stVal	042.080	LOGIC : Output 25
	Ind26	SPS	stVal	042.082	LOGIC : Output 26
	Ind27	SPS	stVal	042.084	LOGIC : Output 27
	Ind28	SPS	stVal	042.086	LOGIC : Output 28
	Ind29	SPS	stVal	042.088	LOGIC : Output 29
	Ind30	SPS	stVal	042.090	LOGIC : Output 30
	Ind31	SPS	stVal	042.092	LOGIC : Output 31
	Ind32	SPS	stVal	042.094	LOGIC : Output 32
PloGGIO3	Mod	INC	stVal	001.228	IEC : Logik.Mod
	Beh	INS	stVal	001.229	IEC : Logik.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Ind1	SPS	stVal	042.033	LOGIC : Output 1 (t)
	Ind2	SPS	stVal	042.035	LOGIC : Output 2 (t)
	Ind3	SPS	stVal	042.037	LOGIC : Output 3 (t)
	Ind4	SPS	stVal	042.039	LOGIC : Output 4 (t)
	Ind5	SPS	stVal	042.041	LOGIC : Output 5 (t)
	Ind6	SPS	stVal	042.043	LOGIC : Output 6 (t)
	Ind7	SPS	stVal	042.045	LOGIC : Output 7 (t)
	Ind8	SPS	stVal	042.047	LOGIC : Output 8 (t)
	Ind9	SPS	stVal	042.049	LOGIC : Output 9 (t)
	Ind10	SPS	stVal	042.051	LOGIC : Output 10 (t)
	Ind11	SPS	stVal	042.053	LOGIC : Output 11 (t)
	Ind12	SPS	stVal	042.055	LOGIC : Output 12 (t)
	Ind13	SPS	stVal	042.057	LOGIC : Output 13 (t)
	Ind14	SPS	stVal	042.059	LOGIC : Output 14 (t)
	Ind15	SPS	stVal	042.061	LOGIC : Output 15 (t)
	Ind16	SPS	stVal	042.063	LOGIC : Output 16 (t)
	Ind17	SPS	stVal	042.065	LOGIC : Output 17 (t)
	Ind18	SPS	stVal	042.067	LOGIC : Output 18 (t)
	Ind19	SPS	stVal	042.069	LOGIC : Output 19 (t)
	Ind20	SPS	stVal	042.071	LOGIC : Output 20 (t)
	Ind21	SPS	stVal	042.073	LOGIC : Output 21 (t)
	Ind22	SPS	stVal	042.075	LOGIC : Output 22 (t)
	Ind23	SPS	stVal	042.077	LOGIC : Output 23 (t)
	Ind24	SPS	stVal	042.079	LOGIC : Output 24 (t)
	Ind25	SPS	stVal	042.081	LOGIC : Output 25 (t)
	Ind26	SPS	stVal	042.083	LOGIC : Output 26 (t)
	Ind27	SPS	stVal	042.085	LOGIC : Output 27 (t)
	Ind28	SPS	stVal	042.087	LOGIC : Output 28 (t)
	Ind29	SPS	stVal	042.089	LOGIC : Output 29 (t)
	Ind30	SPS	stVal	042.091	LOGIC : Output 30 (t)
	Ind31	SPS	stVal	042.093	LOGIC : Output 31 (t)
	Ind32	SPS	stVal	042.095	LOGIC : Output 32 (t)
PloGGIO4	Mod	INC	stVal	001.228	IEC : Logik.Mod
	Beh	INS	stVal	001.229	IEC : Logik.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version

## Logical Device: System

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Ind1	SPS	stVal	034.067	LOGIC : 1 has been set
	Ind2	SPS	stVal	034.068	LOGIC : 2 has been set
	Ind3	SPS	stVal	034.069	LOGIC : 3 has been set
	Ind4	SPS	stVal	034.070	LOGIC : 4 has been set
	Ind5	SPS	stVal	034.071	LOGIC : 5 has been set
	Ind6	SPS	stVal	034.072	LOGIC : 6 has been set
	Ind7	SPS	stVal	034.073	LOGIC : 7 has been set
	Ind8	SPS	stVal	034.074	LOGIC : 8 has been set
	Ind9	SPS	stVal	034.075	LOGIC : 1 set externally
	Ind10	SPS	stVal	034.076	LOGIC : 2 set externally
	Ind11	SPS	stVal	034.077	LOGIC : 3 set externally
	Ind12	SPS	stVal	034.078	LOGIC : 4 set externally
	Ind13	SPS	stVal	034.079	LOGIC : 5 set externally
	Ind14	SPS	stVal	034.080	LOGIC : 6 set externally
	Ind15	SPS	stVal	034.081	LOGIC : 7 set externally
	Ind16	SPS	stVal	034.082	LOGIC : 8 set externally
AlmGGIO1	Mod	INC	stVal	005.027	IEC : Mode
	Beh	INS	stVal	005.028	IEC : Behavior
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	Alm1	SPS	stVal	036.100	SFMON : Warning (relay)
	Alm2	SPS	stVal	041.200	SFMON : Relay Kxx faulty
	Alm3	SPS	stVal	004.065	MAIN : Blocked/faulty
	Alm5	SPS	stVal	004.061	MAIN : M.c.b. trip V EXT
	Alm11	SPS	stVal	039.111	THERM : CTA error
	Alm12	SPS	stVal	040.190	MEASI : PT100 faulty
	Alm13	SPS	stVal	040.191	MEASI : Overload 20mA input
	Alm14	SPS	stVal	040.192	MEASI : Open circ. 20mA inp.
IdcGGIO1	Mod	INC	stVal	006.107	IEC : IdcGGIO.Mode
	Beh	INS	stVal	006.108	IEC : IdcGGIO.Beh
	Health	INS	stVal	006.109	IEC : IdcGGIO.Health
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	AnIn1	MV	mag	004.134	MEASI : Current IDC
	AnIn2	MV	mag	004.180	MEASI : Scaled value IDC,lin
RtdGGIO1	Mod	INC	stVal	006.110	IEC : RtdGGIO1.Mode
	Beh	INS	stVal	006.111	IEC : RtdGGIO1.Beh
	Health	INS	stVal	006.112	IEC : RtdGGIO1.Health
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
	AnIn1	MV	mag	004.133	MEASI : Temperature
	AnIn2	MV	mag	004.221	MEASI : Temperature p.u.
LPHD1	PhyNam	INC	vendor	003.183	PC : Name of manufacturer
			hwRev	-	
			swRev	002.120	DVICE : Software version
			serNum	002.124	DVICE : F number
	PhyHealth	INS	stVal	005.029	IEC : Healthy
	Proxy	SPS	stVal	-	
ZAXN1	Mod	INC	stVal	006.173	IEC : ZAXN1.Mod

Logical Node	Data Object	CDC	Data Attr.	Address	Description
	Beh	INS	stVal	006.174	IEC : ZAXN1.Beh
	Health	INS	stVal	005.029	IEC : Healthy
	NamPlt	LPL	vendor	003.183	PC : Name of manufacturer
			swRev	002.120	DVICE : Software version
			configRev	-	
	EEHealth	INS	stVal	006.172	IEC : ZAXN1.EEHealth



Logical Device: System

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