



ECS SLAVE

SW MANUAL

사용자 설명서



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Table of Contents

Table of Contents	1
1. Introduction	4
1.1 EtherCAT Communication.....	4
1.2 EtherCAT State Machine	4
2. ECS Slave	6
2.1 ECS Slave 구성.....	6
2.2 ECS Slave 연결 방법	7
3.Object Dictionary	8
3.1 ECS-NC100.....	8
3.1.1 PDO Mapping Objects	8
3.2 ECS-DI16N/P	8
3.2.1 PDO Mapping Objects	8
3.3 ECS-DO16N/P.....	9
3.3.1 PDO Mapping Objects	9
3.4 ECS-DO04R.....	9
3.4.1 PDO Mapping Objects	9
3.5 ECS-AI08V	10
3.5.1 Common Objects.....	10
3.5.2 PDO Mapping Objects	11
3.5.3 SDO Object Description	12
3.6 ECS-AI08I.....	14
3.6.1 Common Objects.....	14
3.6.2 PDO Mapping Objects	15
3.6.3 SDO Object Description	16
3.7 ECS-AI04VH.....	18
3.7.1 Common Objects.....	18
3.7.2 PDO Mapping Objects	19
3.7.3 SDO Object Description	20

3.8 ECS-AI04IH.....	21
3.8.1 Common Objects.....	21
3.8.2 PDO Mapping Objects	22
3.8.3 SDO Object Description	23
3.9 ECS-AO04VH.....	24
3.9.1 Common Objects.....	24
3.9.2 PDO Mapping Objects	25
3.9.3 SDO Object Description	26
3.10 ECS-AO04IH.....	27
3.10.1 Common Objects.....	27
3.10.2 PDO Mapping Objects	28
3.10.3 SDO Object Description	29
3.11 ECS-AO02IH.....	30
3.11.1 Common Objects.....	30
3.11.2 PDO Mapping Objects	31
3.11.3 SDO Object Description.....	32
3.12 ECS-AI04R.....	33
3.12.1 Common Objects.....	33
3.12.2 PDO Mapping Objects	34
3.12.3 SDO Object Description	36
3.13 ECS-AI04T	37
3.13.1 Common Objects.....	37
3.13.2 PDO Mapping Objects	38
3.13.3 SDO Object Description	40
3.14 ECS-CN08P.....	43
3.14.1 Common Objects.....	43
3.14.2 PDO Mapping Objects	45
3.14.3 SDO Object Description	47
3.15 ECS-SC02I-232.....	49
3.15.1 Common Objects.....	49
3.15.2 PDO Mapping Objects	51
3.15.3 SDO Object Description	55
3.16 ECS-SC02I-422/485	60

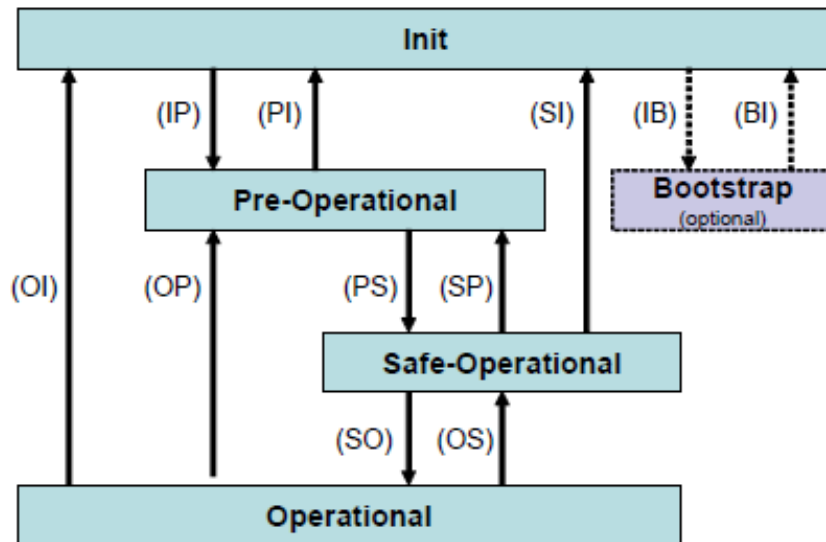
3.16.1 Common Objects.....	60
3.16.2 PDO Mapping Objects	62
3.15.3 SDO Object Description	66
개정 이력	71

I. Introduction

1.1 EtherCAT Communication

EtherCAT은 Ethernet for Control Automation Technology의 약자로서, 독일의 BECKHOFF사에서 개발된 Real-Time Ethernet을 사용한 마스터와 슬레이브간 통신 방식을 말하며, ETG(EtherCAT Technology Group)에서 관리되고 있습니다.

1.2 EtherCAT State Machine



State	Mailbox	PDO Input	PDO Output
Init	X	X	X
Pre-Operational	O	X	X
Safe-Operational	O	O	X
Operational	O	O	O

State Transition	Description
IP	메일 박스 통신을 시작합니다.
PI	메일 박스 통신을 중지합니다.
PS	PDO 입력 데이터 통신을 시작합니다.
SP	PDO 입력 데이터 통신을 중지합니다.
SO	PDO 출력 데이터 통신을 시작합니다.

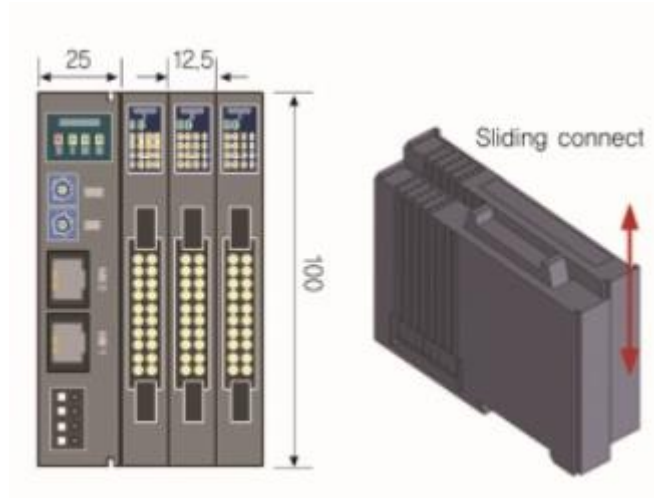
OS	PDO 출력 데이터 통신을 중지합니다.
OP	PDO 입/출력 데이터 업데이트를 중지합니다.
SI	PDO 입력 데이터 업데이트 및 메일박스 통신을 중지합니다.
OI	PDO 입/출력 데이터 업데이트 및 메일박스 통신을 모두 중지합니다.

2. ECS Slave

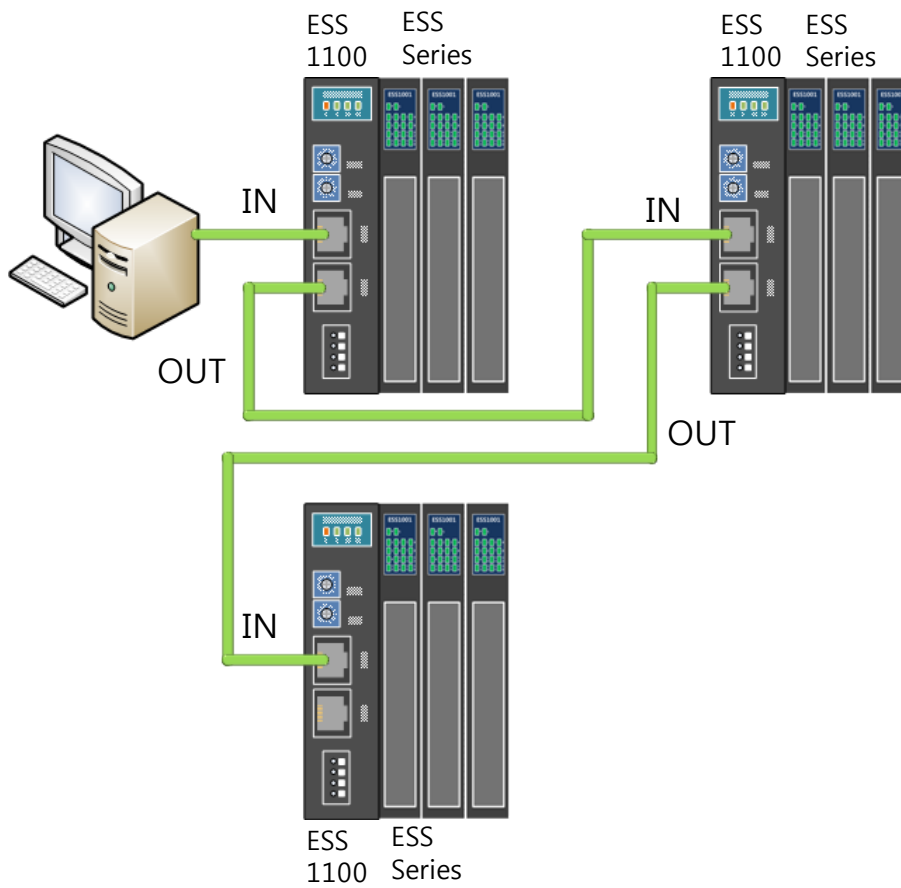
2.1 ECS Slave 구성

Name	Type	In/Out	Channel
ECS-NC100	N-Type	Coupler	-
ECS-DI16N/P		Digital Input	16 채널
ECS-DO16N/P	-	Digital Output	16 채널
ECS-DO04R		Digital Output	4 채널
ECS-AI08V		Analog Input	8 채널
ECS-AI08I		Analog Input	8 채널
ECS-AI04H		Analog Input	4 채널
ECS-AO04VH		Analog Output	4 채널
ECS-AO04IH		Analog Output	2 채널
ECS-AO02IH		Analog Output	2 채널
ECS-AI04R		RTD	4 채널
ECS-AI04T		RTD	4 채널
ECS-CN08P		Counter	8 채널
ECS-SC02I-232		RS 232	2 채널
ECS-SC02I-422/485		RS 422/485	2 채널

2.2 ECS Slave 연결 방법



[그림 1] ECS 규격



[그림 2] ECS 연결 방법

3. Object Dictionary

3.1 ECS-NC100

3.1.1 PDO Mapping Objects

▶ TxPDO-Map

Index	Name	Value	Entry Name	BitLen	Data Type
0x1A00	Device ID	0x2000 : 01	Byte 0	8	USINT

3.2 ECS-DI16N/P

3.2.1 PDO Mapping Objects

▶ TxPDO-Map

Index	Name	Value	Entry Name	BitLen	Data Type
0x1A00	Inputs 0~7	0x6000 : 01	Byte 0	8	BITARR8
	Inputs 7~15	0x6000 : 02	Byte 1	8	BITARR8

3.3 ECS-DO16N/P

3.3.1 PDO Mapping Objects

▶ RxPDO-Map

Index	Name	Value	Entry Name	BitLen	Data Type
0x1600	Outputs 0~7	0x6200: 01	Byte 0	8	BITARR8
	Outputs 7~15	0x6200: 02	Byte 1	8	BITARR8

3.4 ECS-DO04R

3.4.1 PDO Mapping Objects

▶ RxPDO-Map

Index	Name	Value	Entry Name	BitLen	Data Type
0x1600	Outputs 0	0x6200: 01	Channel 0	1	BOOL
	Outputs 1	0x6200: 02	Channel 1	1	BOOL
	Outputs 2	0x6200: 03	Channel 2	1	BOOL
	Outputs 3	0x6200: 04	Channel 3	1	BOOL

3.5 ECS-AI08V

3.5.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AI08V
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x50323552
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Get Cycle Time	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0A	Sync0 time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

0x20	Sync error	BOOL	RO	-
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3.5.2 PDO Mapping Objects

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1A00

▶ 0x1A00 AI TxPDO-Map Inputs Ch (0~8)

Index	Sub	Name	Type	Access	Value
0x1A00	0x00	SubIndex 000	UINT8	RO	0x08
	0x01	SubIndex 001	UINT32	RO	0x6401:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6401:02, 16
	0x03	SubIndex 003	UINT32	RO	0x6401:03, 16
	0x04	SubIndex 004	UINT32	RO	0x6401:04, 16
	0x05	SubIndex 005	UINT32	RO	0x6401:05, 16
	0x06	SubIndex 006	UINT32	RO	0x6401:06, 16
	0x07	SubIndex 007	UINT32	RO	0x6401:07, 16
	0x08	SubIndex 008	UINT32	RO	0x6401:08, 16

3.5.3 SDO Object Description

- ▶ 0x200n – Analog Inputs Channel Setting (n = 0 ~ 7: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	AI Ch.n Settings	UINT8	RW	0x03
	0x01	Enable Average Filter	BOOL	RW	0x00
	0x03	Average Count	UINT	RW	0x0064

이 Object 는 AI Setting 값들을 보여줍니다.

Enable Average Filter : 필터 기능 사용 유무 입니다.

Average Count : 필터 값 입니다.

- ▶ 0x2120 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0x2120	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

▶ 0x6401 – Analog Inputs Ch(0 ~ 7 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AI Inputs	UINT8	RO	0x08	-
	0x01	AI Ch.0 Value	INT	RO	0x0000	○
	0x02	AI Ch.1 Value	INT	RO	0x0000	○
	0x03	AI Ch.2 Value	INT	RO	0x0000	○
	0x04	AI Ch.3 Value	INT	RO	0x0000	○
	0x05	AI Ch.4 Value	INT	RO	0x0000	○
	0x06	AI Ch.5 Value	INT	RO	0x0000	○
	0x07	AI Ch.6 Value	INT	RO	0x0000	○
	0x08	AI Ch.7 Value	INT	RO	0x0000	○

AI Ch.n Value : Ch n 의 현재 Analog Input 값입니다.

3.6 ECS-AI08I

3.6.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AI08I
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x5032C248
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Get Cycle Time	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0A	Sync0 time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
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3.6.2 PDO Mapping Objects

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1A00

▶ 0x1A00 AI TxPDO-Map Inputs Ch (0~8)

Index	Sub	Name	Type	Access	Value
0x1A00	0x00	SubIndex 000	UINT8	RO	0x08
	0x01	SubIndex 001	UINT32	RO	0x6401:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6401:02, 16
	0x03	SubIndex 003	UINT32	RO	0x6401:03, 16
	0x04	SubIndex 004	UINT32	RO	0x6401:04, 16
	0x05	SubIndex 005	UINT32	RO	0x6401:05, 16
	0x06	SubIndex 006	UINT32	RO	0x6401:06, 16
	0x07	SubIndex 007	UINT32	RO	0x6401:07, 16
	0x08	SubIndex 008	UINT32	RO	0x6401:08, 16

3.6.3 SDO Object Description

- ▶ 0x200n – Analog Inputs Channel Setting (n = 0 ~ 7: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	AI Ch.n Settings	UINT8	RW	0x03
	0x01	Enable Average Filter	BOOL	RW	0x00
	0x03	Average Count	UINT16	RW	0x0064

이 Object 는 AI Setting 값들을 보여줍니다.

Enable Average Filter : 필터 기능 사용 유무 입니다.

Average Count : 필터 값 입니다.

- ▶ 0x2120 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0x2120	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

▶ 0x6401 – Analog Inputs Ch(0 ~ 7 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AI Inputs	UINT8	RO	0x08	-
	0x01	AI Ch.0 Value	INT	RO	0x0000	○
	0x02	AI Ch.1 Value	INT	RO	0x0000	○
	0x03	AI Ch.2 Value	INT	RO	0x0000	○
	0x04	AI Ch.3 Value	INT	RO	0x0000	○
	0x05	AI Ch.4 Value	INT	RO	0x0000	○
	0x06	AI Ch.5 Value	INT	RO	0x0000	○
	0x07	AI Ch.6 Value	INT	RO	0x0000	○
	0x08	AI Ch.7 Value	INT	RO	0x0000	○

AI Ch.n Value : Ch n 의 현재 Analog Input 값입니다.

3.7 ECS-AI04VH

3.7.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AI04VH
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x5032C214
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Get Cycle Time	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0A	Sync0 time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

0x20	Sync error	BOOL	RO	-
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3.7.2 PDO Mapping Objects

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1A00

▶ 0x1A00 AI TxPDO-Map Inputs Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1A00	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6401:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6401:02, 16
	0x03	SubIndex 003	UINT32	RO	0x6401:03, 16
	0x04	SubIndex 004	UINT32	RO	0x6401:04, 16

3.7.3 SDO Object Description

- ▶ 0x200n – Analog Inputs Channel Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	AI Ch.n Settings	UINT8	RW	0x03
	0x01	Range	UINT32	RW	0x00000000

이 Object 는 AI Setting 값들을 보여줍니다.

Range : Analog Inputs 의 범위를 설정합니다.

- ▶ 0x2120 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0x2120	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

- ▶ 0x6401 – Analog Inputs Ch(0 ~ 3 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AI Inputs	UINT8	RO	0x08	-
	0x01	AI Ch.0 Value	INT	RO	0x0000	○
	0x02	AI Ch.1 Value	INT	RO	0x0000	○
	0x03	AI Ch.2 Value	INT	RO	0x0000	○

AI Ch.n Value : Ch n 의 현재 Analog Input 값입니다.

3.8 ECS-AI04IH

3.8.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AI04IH
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x5032C214
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Get Cycle Time	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0A	Sync0 time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

0x20	Sync error	BOOL	RO	-
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3.8.2 PDO Mapping Objects

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1A00

▶ 0x1A00 AI TxPDO-Map Inputs Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1A00	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6401:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6401:02, 16
	0x03	SubIndex 003	UINT32	RO	0x6401:03, 16
	0x04	SubIndex 004	UINT32	RO	0x6401:04, 16

3.8.3 SDO Object Description

- ▶ 0x200n – Analog Inputs Channel Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	AI Ch.n Settings	UINT8	RW	0x03
	0x01	Range	UINT32	RW	0x00000000

이 Object 는 AI Setting 값들을 보여줍니다.

Range : Analog Inputs 의 범위를 설정합니다.

- ▶ 0x2120 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0x2120	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

- ▶ 0x6401 – Analog Inputs Ch(0 ~ 3 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AI outputs	UINT8	RO	0x04	-
	0x01	AI Ch.0 Value	INT	RO	0x0000	○
	0x02	AI Ch.1 Value	INT	RO	0x0000	○
	0x03	AI Ch.2 Value	INT	RO	0x0000	○
	0x04	AI Ch.3 Value	INT	RO	0x0000	○

AI Ch.n Value : Ch n 의 현재 Analog Input 값입니다.

3.9 ECS-AO04VH

3.9.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AO04VH
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x45435304
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C32	0x00	Input Sync Manager Parameter	UINT8	RO	0x07
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Command	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0A	Cycle exceeded counter	UINT16	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

0x20	Sync error	BOOL	RO	-
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3.9.2 PDO Mapping Objects

▶ 0x1C12 RxPDO

Index	Sub	Name	Type	Access	Value
0x1C12	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1600

▶ 0x1600 AO RxPDO-Map Inputs Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1600	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6411:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6411:02, 16
	0x03	SubIndex 003	UINT32	RO	0x6411:03, 16
	0x04	SubIndex 004	UINT32	RO	0x6411:04, 16

3.9.3 SDO Object Description

- ▶ 0x200n – Analog Inputs Channel Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	AI Ch.n Settings	UINT8	RW	0x03
	0x01	Range	USINT	RW	0x00000000

이 Object 는 AI Setting 값들을 보여줍니다.

Range : Analog Inputs 의 범위를 설정합니다.

- ▶ 0x2120 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0x2120	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

- ▶ 0x6411 – Analog Outputs Ch(0 ~ 3 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AO Inputs	UINT8	RO	0x04	-
	0x01	AO Ch.0 Value	INT	RO	0x0000	○
	0x02	AO Ch.1 Value	INT	RO	0x0000	○
	0x03	AO Ch.2 Value	INT	RO	0x0000	○
	0x04	AO Ch.3 Value	INT	RO	0x0000	○

AO Ch.n Value : Ch n 의 현재 Analog Output 값입니다.

3.10 ECS-AO04IH

3.10.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AO04IH
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x45435308
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C32	0x00	Input Sync Manager Parameter	UINT8	RO	0x07
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Command	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0A	Cycle exceeded counter	UINT16	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

0x20	Sync error	BOOL	RO	-
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3.10.2 PDO Mapping Objects

▶ 0x1C12 RxPDO

Index	Sub	Name	Type	Access	Value
0x1C12	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1600

▶ 0x1600 AO RxPDO-Map Inputs Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1600	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6411:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6411:02, 16
	0x03	SubIndex 003	UINT32	RO	0x6411:03, 16
	0x04	SubIndex 004	UINT32	RO	0x6411:04, 16

3.10.3 SDO Object Description

▶ 0x6411 – Analog Outputs Ch(0 ~ 3 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AO outputs	UINT8	RO	0x04	-
	0x01	AO Ch.0 Value	INT	RO	0x0000	○
	0x02	AO Ch.1 Value	INT	RO	0x0000	○
	0x03	AO Ch.2 Value	INT	RO	0x0000	○
	0x04	AO Ch.3 Value	INT	RO	0x0000	○

AO Ch.n Value : Ch n 의 현재 Analog Output 값입니다.

3.11 ECS-AO02IH

3.11.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AO02IH
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x45435307
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C32	0x00	Input Sync Manager Parameter	UINT8	RO	0x07
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Command	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0A	Cycle exceeded counter	UINT16	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
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3.11.2 PDO Mapping Objects

▶ 0x1C12 RxPDO

Index	Sub	Name	Type	Access	Value
0x1C12	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1600

▶ 0x1600 AO RxPDO-Map Inputs Ch (0~1)

Index	Sub	Name	Type	Access	Value
0x1600	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6411:01, 16
	0x02	SubIndex 002	UINT32	RO	0x6411:02, 16

3.11.3 SDO Object Description

▶ 0x6411 – Analog Outputs Ch(0 ~ 1 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6401	0x00	AO outputs	UINT8	RO	0x04	-
	0x01	AO Ch.0 Value	INT	RO	0x0000	O
	0x02	AO Ch.1 Value	INT	RO	0x0000	O

AO Ch.n Value : Ch n 의 현재 Analog Output 값입니다.

3.12 ECS-AI04R

3.12.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AI04R
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x45435305
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Get Cycle Time	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0A	Sync0 time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
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3.12.2 PDO Mapping Objects

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1A00
	0x02	SubIndex 002	UINT16	RO	0x1A01
	0x03	SubIndex 003	UINT16	RO	0x1A02

▶ 0x1A00 AI TxPDO-Map Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1A00	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6403:01, 32
	0x02	SubIndex 002	UINT32	RO	0x6403:02, 32
	0x03	SubIndex 003	UINT32	RO	0x6403:03, 32
	0x04	SubIndex 004	UINT32	RO	0x6403:04, 32

▶ 0x1A01 SSR TxPDO-Map Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1A01	0x00	SubIndex 000	UINT8	RO	0x05
	0x01	SubIndex 001	UINT32	RO	0x6000:01, 1
	0x02	SubIndex 002	UINT32	RO	0x6000:02, 1
	0x03	SubIndex 003	UINT32	RO	0x6000:03, 1
	0x04	SubIndex 004	UINT32	RO	0x6000:04, 1
	0x05	SubIndex 005	UINT32	RO	0x6000:05, 4

▶ 0x1A02 Alarm TxPDO-Map(0~3)

Index	Sub	Name	Type	Access	Value
0x1A02	0x00	SubIndex 000	UINT8	RO	0x05
	0x01	SubIndex 001	UINT32	RO	0x6000:06, 1
	0x02	SubIndex 002	UINT32	RO	0x6000:07, 1
	0x03	SubIndex 003	UINT32	RO	0x6000:08, 1
	0x04	SubIndex 004	UINT32	RO	0x6000:09, 1
	0x05	SubIndex 005	UINT32	RO	0x6000:0A, 4

3.12.3 SDO Object Description

- ▶ 0x200n – RTD Channel n Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	RTD Ch.n Settings	UINT8	RW	0x03
	0x01	Wire Type	UINT32	RW	0x00000000
	0x02	PT Type	UINT32	RW	0x00000001

이 Object 는 RTD Setting 값들을 보여줍니다.

Wire Type : 내부 도선의 설정을 선택합니다.

PT Type : PT Type 설정을 선택합니다.

- ▶ 0x201n – SSR Channel n Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x201n	0x00	RTD Ch.n Settings	UINT8	RW	0x0A
	0x01	N-Kp	UINT32	RW	0x00000002
	0x02	N-Ki	UINT32	RW	0x00000000
	0x03	P-Kp	UINT32	RW	0x00000002
	0x04	P-Ki	UINT32	RW	0x00000000
	0x05	Kd	UINT32	RW	0x00000000
	0x06	SV	UINT32	RW	0x00000055
	0x07	PV	UINT32	RW	0x00000000
	0x08	Clear	BOOL	RW	0x00
	0x09	Enable	BOOL	RW	0x00

이 Object 는 SSR Setting 값들을 보여줍니다.

SSR : PWM 기능을 사용하기 위해 관련 공식에 대한 값을 설정합니다.

3.13 ECS-AI04T

3.13.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-AI04T
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x45435306
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Get Cycle Time	UINT16	RW	-
	0x09	Delay time	UINT32	RO	-
	0x0A	Sync0 time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
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3.13.2 PDO Mapping Objects

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x01
	0x01	SubIndex 001	UINT16	RO	0x1A00
	0x02	SubIndex 002	UINT16	RO	0x1A01
	0x03	SubIndex 003	UINT16	RO	0x1A02

▶ 0x1A00 AI TxPDO-Map Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1A00	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x6403:01, 32
	0x02	SubIndex 002	UINT32	RO	0x6403:02, 32
	0x03	SubIndex 003	UINT32	RO	0x6403:03, 32
	0x04	SubIndex 004	UINT32	RO	0x6403:04, 32

▶ 0x1A01 SSR TxPDO-Map Ch (0~3)

Index	Sub	Name	Type	Access	Value
0x1A01	0x00	SubIndex 000	UINT8	RO	0x05
	0x01	SubIndex 001	UINT32	RO	0x6000:01, 1
	0x02	SubIndex 002	UINT32	RO	0x6000:02, 1
	0x03	SubIndex 003	UINT32	RO	0x6000:03, 1
	0x04	SubIndex 004	UINT32	RO	0x6000:04, 1
	0x05	SubIndex 005	UINT32	RO	0x6000:05, 4

▶ 0x1A02 Alarm TxPDO-Map(0~3)

Index	Sub	Name	Type	Access	Value
0x1A02	0x00	SubIndex 000	UINT8	RO	0x05
	0x01	SubIndex 001	UINT32	RO	0x6000:06, 1
	0x02	SubIndex 002	UINT32	RO	0x6000:07, 1
	0x03	SubIndex 003	UINT32	RO	0x6000:08, 1
	0x04	SubIndex 004	UINT32	RO	0x6000:09, 1
	0x05	SubIndex 005	UINT32	RO	0x6000:0A, 4

3.13.3 SDO Object Description

- ▶ 0x200n – TC Channel n Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x200n	0x00	TC Ch.n Settings	UINT8	RW	0x02
	0x01	TC Type	UINT32	RW	0x00000003

이 Object 는 TC Setting 값들을 보여줍니다.

TC Type : TC Type 의 설정을 설정합니다.

- ▶ 0x201n – SSR Channel n Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x201n	0x00	RTD Ch.n Settings	UINT8	RW	0x0A
	0x01	N-Kp	UINT32	RW	0x00000002
	0x02	N-Ki	UINT32	RW	0x00000000
	0x03	P-Kp	UINT32	RW	0x00000002
	0x04	P-Ki	UINT32	RW	0x00000000
	0x05	Kd	UINT32	RW	0x00000000
	0x06	SV	UINT32	RW	0x00000055
	0x07	PV	UINT32	RW	0x00000000
	0x08	Clear	BOOL	RW	0x00
	0x09	Enable	BOOL	RW	0x00

이 Object 는 SSR Setting 값들을 보여줍니다.

SSR : PWM 기능을 사용하기 위해 관련 공식에 대한 값을 설정합니다.

▶ 0x202n – Alarm Channel n Setting (n = 0 ~ 3: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x202n	0x00	RTD Ch.n Settings	UINT8	RW	0x02
	0x01	Min	UINT32	RW	0x00000000
	0x02	Max	UINT32	RW	0x00000032

이 Object 는 Alarm Setting 값들을 보여줍니다.

Min : 온도의 최소값을 설정합니다.

Max : 온도의 최대값을 설정합니다.

▶ 0x2120 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0x2120	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

▶ 0x6000 – Alarm and SSR Ch(0 ~ 3 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6000	0x00	Alarm and SSR	UINT8	RO	0x0A	-
	0x01	SSR Ch. 0	BOOL	RO	0x00	0
	0x02	SSR Ch. 1	BOOL	RO	0x00	0
	0x03	SSR Ch. 2	BOOL	RO	0x00	0
	0x04	SSR Ch. 3	BOOL	RO	0x00	0
	0x06	Alarm Ch. 0	BOOL	RO	0x00	0
	0x07	Alarm Ch. 1	BOOL	RO	0x00	0

	0x08	Alarm Ch. 2	BOOL	RO	0x00	○
	0x09	Alarm Ch. 3	BOOL	RO	0x00	○

Alarm and SSR : 현재 Alarm 과 SSR 의 사용 유무입니다.

▶ 0x6403 – Analog Outputs Ch(0 ~ 1 : 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x6403	0x00	AI Temperature	UINT8	RO	0x04	-
	0x01	AO Ch.0 Value	UINT32	RO	0x0000	○
	0x02	AO Ch.1 Value	UINT32	RO	0x0000	○
	0x03	AO Ch.2 Value	UINT32	RO	0x0000	○
	0x04	AO Ch.3 Value	UINT32	RO	0x0000	○

AI Ch.n Temperature : Ch n 의 현재 온도 값입니다.

3.14 ECS-CN08P

3.14.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-CN08P
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x5032C558
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C32	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x07	Minimum cycle time	UINT16	RW	-
	0x08	Command	UINT16	RO	-
	0x09	Maximum Delay time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Command	UINT16	RW	-
	0x09	Maximum Delay time	UINT32	RO	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-
	0x20	Sync error	BOOL	RO	-

3.14.2 PDO Mapping Objects

▶ 0x1C12 RxPDO

Index	Sub	Name	Type	Access	Value
0x1C12	0x00	SubIndex 000	UINT8	RO	0x09
	0x01	SubIndex 001	UINT16	RO	0x1600
	0x02	SubIndex 002	UINT16	RO	0x1601
	0x03	SubIndex 003	UINT16	RO	0x1602
	0x04	SubIndex 004	UINT16	RO	0x1603
	0x05	SubIndex 005	UINT16	RO	0x1604
	0x06	SubIndex 006	UINT16	RO	0x1605
	0x07	SubIndex 007	UINT16	RO	0x1606
	0x08	SubIndex 008	UINT16	RO	0x1607

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x09
	0x01	SubIndex 001	UINT16	RO	0x1A00
	0x02	SubIndex 002	UINT16	RO	0x1A01
	0x03	SubIndex 003	UINT16	RO	0x1A02
	0x04	SubIndex 004	UINT16	RO	0x1A03
	0x05	SubIndex 005	UINT16	RO	0x1A04
	0x06	SubIndex 006	UINT16	RO	0x1A05
	0x07	SubIndex 007	UINT16	RO	0x1A06
	0x08	SubIndex 008	UINT16	RO	0x1A07

▶ 0x1A0n CNT TxPDO-Map Input Ch (n = 0~7)

Index	Sub	Name	Type	Access	Value
0x1A0n	0x00	SubIndex 000	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x60n0:01, 1
	0x02	SubIndex 002	UINT32	RO	0x60n0:02, 1
	0x03	SubIndex 003	UINT32	RO	0x0000:00, 6
	0x04	SubIndex 004	UINT32	RO	0x60n0:04, 32

▶ 0x160n CNT RxPDO-Map Ch (n = 0~7)

Index	Sub	Name	Type	Access	Value
0x160n	0x00	SubIndex 000	UINT8	RO	0x05W3
	0x01	SubIndex 001	UINT32	RO	0x70n0:01, 1
	0x02	SubIndex 002	UINT32	RO	0x70n0:02, 1

3.14.3 SDO Object Description

▶ 0x60n0 – CNT Input Ch (n = 0 ~ 7: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x60n0	0x00	CNT Input Ch.n	UINT8	RO	0x04	
	0x01	Enable	BOOL	RO	0x00	○
	0x02	Clear	BOOL	RO	0x00	○
	0x04	Value	UINT32	RO	0x00000000	○

CNT Input Ch.n : Ch n의 카운터 입력 값 입니다.

▶ 0x60n1 – CNT Status Ch (n = 0 ~ 7: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x60n1	0x00	Status Ch. n	UINT8	RO	0x01	
	0x01	Status	UINT16	RO	0x0000	○

CNT Status Ch.n : Ch n의 카운터의 Status 값 입니다.

▶ 0x70n0 – CNT Output Ch (n = 0 ~ 7: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x70n0	0x00	CNT Input Ch.n	UINT8	RO	0x04	
	0x01	Enable	BOOL	RO	0x00	○
	0x02	Clear	BOOL	RO	0x00	○

CNT Output Ch.n : Ch n의 카운터 출력 상태를 나타냅니다.

▶ 0x70n1 – CNT Ctrl Ch (n = 0 ~ 7: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x70n1	0x00	Ctrl Ch. n	UINT8	RO	0x01	
	0x01	Ctrl	UINT16	RO	0x0000	O

CNT Ctrl Ch.n : Ch n 의 카운터의 Ctrl 값 입니다.

▶ 0x8000 – CNT Settings

Index	Sub	Name	Type	Access	Value	PDO
0x8000	0x00	CNT Settings	UINT8	RW	0x01	
	0x01	Edge	UINT32	RW	0x00000000	O

Edge : 카운터의 Edge 방향을 설정합니다.

3.15 ECS-SC02I-232

3.15.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-SC02I-232
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x5032C612
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C32	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x07	Minimum cycle time	UINT16	RW	-
	0x08	Command	UINT16	RO	-
	0x09	Maximum Delay time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Command	UINT16	RW	-
	0x09	Maximum Delay time	UINT32	RO	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-
	0x20	Sync error	BOOL	RO	-

3.15.2 PDO Mapping Objects

▶ 0x1C12 RxPDO

Index	Sub	Name	Type	Access	Value
0x1C12	0x00	SubIndex 000	UINT8	RO	0x09
	0x01	SubIndex 001	UINT16	RO	0x1600
	0x02	SubIndex 002	UINT16	RO	0x1601

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x09
	0x01	SubIndex 001	UINT16	RO	0x1A00
	0x02	SubIndex 002	UINT16	RO	0x1A01

▶ 0x1A0n COM TxPDO-Map Input Ch (n = 0~1)

Index	Sub	Name	Type	Access	Value
0x1A0n	0x00	SubIndex 000	UINT8	RO	0x29
	0x01	SubIndex 001	UINT32	RO	0x60n0:01, 1
	0x02	SubIndex 002	UINT32	RO	0x60n0:02, 1
	0x03	SubIndex 003	UINT32	RO	0x60n0:03, 1
	0x04	SubIndex 004	UINT32	RO	0x60n0:04, 1
	0x05	SubIndex 005	UINT32	RO	0x60n0:05, 1
	0x06	SubIndex 006	UINT32	RO	0x60n0:06, 1
	0x07	SubIndex 007	UINT32	RO	0x60n0:07, 1
	0x08	SubIndex 008	UINT32	RO	0x0000:00, 1
	0x09	SubIndex 009	UINT32	RO	0x60n0:09, 8
	0x0A	SubIndex 010	UINT32	RO	0x60n0:0B, 8
	0x0B	SubIndex 011	UINT32	RO	0x60n0:0C, 8
	0x0C	SubIndex 012	UINT32	RO	0x60n0:0D, 8
	0x0D	SubIndex 013	UINT32	RO	0x60n0:0E, 8
	0x0E	SubIndex 014	UINT32	RO	0x60n0:0F, 8

0x0F	SubIndex 015	UINT32	RO	0x60n0:10, 8
0x10	SubIndex 016	UINT32	RO	0x60n0:11, 8
0x11	SubIndex 017	UINT32	RO	0x60n0:12, 8
0x12	SubIndex 018	UINT32	RO	0x60n0:13, 8
0x13	SubIndex 019	UINT32	RO	0x60n0:14, 8
0x14	SubIndex 020	UINT32	RO	0x60n0:15, 8
0x15	SubIndex 021	UINT32	RO	0x60n0:16, 8
0x16	SubIndex 022	UINT32	RO	0x60n0:17, 8
0x17	SubIndex 023	UINT32	RO	0x60n0:18, 8
0x18	SubIndex 024	UINT32	RO	0x60n0:19, 8
0x19	SubIndex 025	UINT32	RO	0x60n0:1A, 8
0x1A	SubIndex 026	UINT32	RO	0x60n0:1B, 8
0x1B	SubIndex 027	UINT32	RO	0x60n0:1C, 8
0x1C	SubIndex 028	UINT32	RO	0x60n0:1D, 8
0x1D	SubIndex 029	UINT32	RO	0x60n0:1E, 8
0x1E	SubIndex 030	UINT32	RO	0x60n0:1F, 8
0x1F	SubIndex 031	UINT32	RO	0x60n0:20, 8
0x20	SubIndex 032	UINT32	RO	0x60n0:21, 8
0x21	SubIndex 033	UINT32	RO	0x60n0:22, 8
0x22	SubIndex 034	UINT32	RO	0x60n0:23, 8
0x23	SubIndex 035	UINT32	RO	0x60n0:24, 8
0x24	SubIndex 036	UINT32	RO	0x60n0:25, 8
0x25	SubIndex 037	UINT32	RO	0x60n0:26, 8
0x26	SubIndex 038	UINT32	RO	0x60n0:27, 8
0x27	SubIndex 039	UINT32	RO	0x60n0:28, 8
0x28	SubIndex 040	UINT32	RO	0x60n0:29, 8
0x29	SubIndex 041	UINT32	RO	0x60n0:2A, 8

▶ 0x160n COM RxPDO-Map Output Ch (n = 0~1)

Index	Sub	Name	Type	Access	Value
0x160n	0x00	SubIndex 000	UINT8	RO	0x26
	0x01	SubIndex 001	UINT32	RO	0x70n0:01, 1
	0x02	SubIndex 002	UINT32	RO	0x70n0:02, 1
	0x03	SubIndex 003	UINT32	RO	0x70n0:03, 1
	0x04	SubIndex 004	UINT32	RO	0x70n0:04, 1
	0x05	SubIndex 005	UINT32	RO	0x0000:00, 4
	0x06	SubIndex 006	UINT32	RO	0x70n0:09, 8
	0x07	SubIndex 007	UINT32	RO	0x70n0:0B, 8
	0x08	SubIndex 008	UINT32	RO	0x70n0:0C, 8
	0x09	SubIndex 009	UINT32	RO	0x70n0:0D, 8
	0x0A	SubIndex 010	UINT32	RO	0x70n0:0E, 8
	0x0B	SubIndex 011	UINT32	RO	0x70n0:0F, 8
	0x0C	SubIndex 012	UINT32	RO	0x70n0:10, 8
	0x0D	SubIndex 013	UINT32	RO	0x70n0:11, 8
	0x0E	SubIndex 014	UINT32	RO	0x70n0:12, 8
	0x0F	SubIndex 015	UINT32	RO	0x70n0:13, 8
	0x10	SubIndex 016	UINT32	RO	0x70n0:14, 8
	0x11	SubIndex 017	UINT32	RO	0x70n0:15, 8
	0x12	SubIndex 018	UINT32	RO	0x70n0:16, 8
	0x13	SubIndex 019	UINT32	RO	0x70n0:17, 8
	0x14	SubIndex 020	UINT32	RO	0x70n0:18, 8
	0x15	SubIndex 021	UINT32	RO	0x70n0:19, 8
	0x16	SubIndex 022	UINT32	RO	0x70n0:1A, 8
	0x17	SubIndex 023	UINT32	RO	0x70n0:1B, 8
	0x18	SubIndex 024	UINT32	RO	0x70n0:1C, 8
	0x19	SubIndex 025	UINT32	RO	0x70n0:1D, 8
	0x1A	SubIndex 026	UINT32	RO	0x70n0:1E, 8
	0x1B	SubIndex 027	UINT32	RO	0x70n0:1F, 8
	0x1C	SubIndex 028	UINT32	RO	0x70n0:20, 8
	0x1D	SubIndex 029	UINT32	RO	0x70n0:21, 8
	0x1E	SubIndex 030	UINT32	RO	0x70n0:22, 8

0x1F	SubIndex 031	UINT32	RO	0x70n0:23, 8
0x20	SubIndex 032	UINT32	RO	0x70n0:24, 8
0x21	SubIndex 033	UINT32	RO	0x70n0:25, 8
0x22	SubIndex 034	UINT32	RO	0x70n0:26, 8
0x23	SubIndex 035	UINT32	RO	0x70n0:27, 8
0x24	SubIndex 036	UINT32	RO	0x70n0:28, 8
0x25	SubIndex 037	UINT32	RO	0x70n0:29, 8
0x26	SubIndex 038	UINT32	RO	0x70n0:2A, 8

3.15.3 SDO Object Description

▶ 0x80n0 – COM Setting Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x60n0	0x00	COM Setting Ch.n	UINT8	RW	0x05
	0x01	Data Bit	UINT32	RW	0x00000000
	0x02	Stop Bit	UINT32	RW	0x00000000
	0x03	Parity Bit	UINT32	RW	0x00000000
	0x04	Baudrate	UINT32	RW	0x00000005

이 Object 는 COM Setting 값들을 보여줍니다.

Data Bit : COM 의 Data Bit 값을 설정합니다.

Stop Bit : COM 의 Stop Bit 값을 설정합니다.

Parity Bit : COM 의 Parity Bit 값을 설정합니다.

Baudrate : COM 의 Baudrate 값을 설정합니다.

▶ 0xF001 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0xF001	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

▶ 0x60n0 – COM Inputs Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x60n0	0x00	COM Inputs Ch. n	UINT8	RO	0x2A	-
	0x01	Transmit accepted	BOOL	RO	0x00	○
	0x02	Receive request	BOOL	RO	0x00	○
	0x03	Init accepted	BOOL	RO	0x00	○
	0x04	Buffer full	BOOL	RO	0x00	○
	0x05	Parity error	BOOL	RO	0x00	○
	0x06	Framing error	BOOL	RO	0x00	○
	0x07	Overrun error	BOOL	RO	0x00	○
	0x09	Input length	UINT8	RO	0x00	○
	0x0B	Data In 0	UINT8	RO	0x00	○
	0x0C	Data In 1	UINT8	RO	0x00	○
	0x0D	Data In 2	UINT8	RO	0x00	○
	0x0E	Data In 3	UINT8	RO	0x00	○
	0x0F	Data In 4	UINT8	RO	0x00	○
	0x10	Data In 5	UINT8	RO	0x00	○
	0x11	Data In 6	UINT8	RO	0x00	○
	0x12	Data In 7	UINT8	RO	0x00	○
	0x13	Data In 8	UINT8	RO	0x00	○
	0x14	Data In 9	UINT8	RO	0x00	○
	0x15	Data In 10	UINT8	RO	0x00	○
	0x16	Data In 11	UINT8	RO	0x00	○
0x17	Data In 12	UINT8	RO	0x00	○	
0x18	Data In 13	UINT8	RO	0x00	○	
0x19	Data In 14	UINT8	RO	0x00	○	
0x1A	Data In 15	UINT8	RO	0x00	○	
0x1B	Data In 16	UINT8	RO	0x00	○	
0x1C	Data In 17	UINT8	RO	0x00	○	
0x1D	Data In 18	UINT8	RO	0x00	○	
0x1E	Data In 19	UINT8	RO	0x00	○	
0x1F	Data In 20	UINT8	RO	0x00	○	

0x20	Data In 21	UINT8	RO	0x00	○
0x21	Data In 22	UINT8	RO	0x00	○
0x22	Data In 23	UINT8	RO	0x00	○
0x23	Data In 24	UINT8	RO	0x00	○
0x24	Data In 25	UINT8	RO	0x00	○
0x25	Data In 26	UINT8	RO	0x00	○
0x26	Data In 27	UINT8	RO	0x00	○
0x27	Data In 28	UINT8	RO	0x00	○
0x28	Data In 29	UINT8	RO	0x00	○
0x29	Data In 30	UINT8	RO	0x00	○
0x2A	Data In 31	UINT8	RO	0x00	○

COM Input Ch.n : Ch n 의 시리얼 입력 값 입니다.

▶ 0x60n1 – COM Status Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x60n1	0x00	Status Ch. n	UINT8	RO	0x01	
	0x01	Status	UINT16	RO	0x0000	○

COM Status Ch.n : Ch n 의 COM 의 Status 값 입니다.

▶ 0x70n0 – COM Outputs Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x70n0	0x00	COM Inputs Ch. n	UINT8	RO	0x2A	-
	0x01	Transmit request	BOOL	RO	0x00	○
	0x02	Receive accepted	BOOL	RO	0x00	○
	0x03	Init request	BOOL	RO	0x00	○
	0x04	Send continuous	BOOL	RO	0x00	○
	0x05	Output length	BOOL	RO	0x00	○

0x06	Framing error	BOOL	RO	0x00	○
0x07	Overrun error	BOOL	RO	0x00	○
0x09	Input length	UINT8	RO	0x00	○
0x0B	Data In 0	UINT8	RO	0x00	○
0x0C	Data In 1	UINT8	RO	0x00	○
0x0D	Data In 2	UINT8	RO	0x00	○
0x0E	Data In 3	UINT8	RO	0x00	○
0x0F	Data In 4	UINT8	RO	0x00	○
0x10	Data In 5	UINT8	RO	0x00	○
0x11	Data In 6	UINT8	RO	0x00	○
0x12	Data In 7	UINT8	RO	0x00	○
0x13	Data In 8	UINT8	RO	0x00	○
0x14	Data In 9	UINT8	RO	0x00	○
0x15	Data In 10	UINT8	RO	0x00	○
0x16	Data In 11	UINT8	RO	0x00	○
0x17	Data In 12	UINT8	RO	0x00	○
0x18	Data In 13	UINT8	RO	0x00	○
0x19	Data In 14	UINT8	RO	0x00	○
0x1A	Data In 15	UINT8	RO	0x00	○
0x1B	Data In 16	UINT8	RO	0x00	○
0x1C	Data In 17	UINT8	RO	0x00	○
0x1D	Data In 18	UINT8	RO	0x00	○
0x1E	Data In 19	UINT8	RO	0x00	○
0x1F	Data In 20	UINT8	RO	0x00	○
0x20	Data In 21	UINT8	RO	0x00	○
0x21	Data In 22	UINT8	RO	0x00	○
0x22	Data In 23	UINT8	RO	0x00	○
0x23	Data In 24	UINT8	RO	0x00	○
0x24	Data In 25	UINT8	RO	0x00	○
0x25	Data In 26	UINT8	RO	0x00	○
0x26	Data In 27	UINT8	RO	0x00	○
0x27	Data In 28	UINT8	RO	0x00	○
0x28	Data In 29	UINT8	RO	0x00	○

	0x29	Data In 30	UINT8	RO	0x00	○
	0x2A	Data In 31	UINT8	RO	0x00	○

▶ 0x70n1 – COM Ctrl Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x70n1	0x00	Ctrl Ch. n	UINT8	RO	0x01	
	0x01	Ctrl	UINT16	RO	0x0000	○

COM Ctrl Ch.n : Ch n의 COM의 Ctrl 값입니다.

3.16 ECS-SC02I-422/485

3.16.1 Common Objects

모든 EtherCAT Slave 의 표준 Object 입니다.

Index	Sub	Name	Type	Access	Value
0x1000	0x00	Device Type	UINT32	RO	0x00040191
0x1008	0x00	Device Name	STRING	RO	ECS-SC02I-485
0x1009	0x00	Hardware version	STRING	RO	-
0x100A	0x00	Software version	STRING	RO	-
0x1018	0x00	Identity Object	UINT8	RO	0x04
	0x01	Vendor ID	UINT32	RO	0xAAAAAAAA
	0x02	Product code	UINT32	RO	0x5032C612
	0x03	Revision	UINT32	RO	-
	0x04	Serial number	UINT32	RO	-
0x1C00	0x00	Sync Manager Communication Type	UINT8	RO	0x04
	0x01	SubIndex 001	UINT32	RO	0x01(1)
	0x02	SubIndex 002	UINT32	RO	0x02(2)
	0x03	SubIndex 003	UINT32	RO	0x03(3)
	0x04	SubIndex 004	UINT32	RO	0x04(4)
0x1C32	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x07	Minimum cycle time	UINT16	RW	-
	0x08	Command	UINT16	RO	-
	0x09	Maximum Delay time	UINT32	RW	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-

	0x20	Sync error	BOOL	RO	-
0x1C33	0x00	Input Sync Manager Parameter	UINT8	RO	0x20
	0x01	Sync mode	UINT16	RW	-
	0x02	Cycle time	UINT32	RO	-
	0x03	Shift time	UINT32	RO	-
	0x04	Sync modes supported	UINT16	RO	-
	0x05	Minimum cycle time	UINT32	RO	-
	0x06	Calc and copy time	UINT32	RO	-
	0x08	Command	UINT16	RW	-
	0x09	Maximum Delay time	UINT32	RO	-
	0x0B	SM event missed counter	UINT32	RO	-
	0x0C	Cycle exceeded counter	UINT32	RO	-
	0x0D	Shift too short counter	UINT32	RO	-
	0x20	Sync error	BOOL	RO	-

3.16.2 PDO Mapping Objects

▶ 0x1C12 RxPDO

Index	Sub	Name	Type	Access	Value
0x1C12	0x00	SubIndex 000	UINT8	RO	0x09
	0x01	SubIndex 001	UINT16	RO	0x1600
	0x02	SubIndex 002	UINT16	RO	0x1601

▶ 0x1C13 TxPDO

Index	Sub	Name	Type	Access	Value
0x1C13	0x00	SubIndex 000	UINT8	RO	0x09
	0x01	SubIndex 001	UINT16	RO	0x1A00
	0x02	SubIndex 002	UINT16	RO	0x1A01

▶ 0x1A0n COM TxPDO-Map Input Ch (n = 0~1)

Index	Sub	Name	Type	Access	Value
0x1A0n	0x00	SubIndex 000	UINT8	RO	0x29
	0x01	SubIndex 001	UINT32	RO	0x60n0:01, 1
	0x02	SubIndex 002	UINT32	RO	0x60n0:02, 1
	0x03	SubIndex 003	UINT32	RO	0x60n0:03, 1
	0x04	SubIndex 004	UINT32	RO	0x60n0:04, 1
	0x05	SubIndex 005	UINT32	RO	0x60n0:05, 1
	0x06	SubIndex 006	UINT32	RO	0x60n0:06, 1
	0x07	SubIndex 007	UINT32	RO	0x60n0:07, 1
	0x08	SubIndex 008	UINT32	RO	0x60n0:08, 1
	0x09	SubIndex 009	UINT32	RO	0x60n0:09, 8
	0x0A	SubIndex 010	UINT32	RO	0x60n0:0B, 8
	0x0B	SubIndex 011	UINT32	RO	0x60n0:0C, 8
	0x0C	SubIndex 012	UINT32	RO	0x60n0:0D, 8
	0x0D	SubIndex 013	UINT32	RO	0x60n0:0E, 8
	0x0E	SubIndex 014	UINT32	RO	0x60n0:0F, 8

0x0F	SubIndex 015	UINT32	RO	0x60n0:10, 8
0x10	SubIndex 016	UINT32	RO	0x60n0:11, 8
0x11	SubIndex 017	UINT32	RO	0x60n0:12, 8
0x12	SubIndex 018	UINT32	RO	0x60n0:13, 8
0x13	SubIndex 019	UINT32	RO	0x60n0:14, 8
0x14	SubIndex 020	UINT32	RO	0x60n0:15, 8
0x15	SubIndex 021	UINT32	RO	0x60n0:16, 8
0x16	SubIndex 022	UINT32	RO	0x60n0:17, 8
0x17	SubIndex 023	UINT32	RO	0x60n0:18, 8
0x18	SubIndex 024	UINT32	RO	0x60n0:19, 8
0x19	SubIndex 025	UINT32	RO	0x60n0:1A, 8
0x1A	SubIndex 026	UINT32	RO	0x60n0:1B, 8
0x1B	SubIndex 027	UINT32	RO	0x60n0:1C, 8
0x1C	SubIndex 028	UINT32	RO	0x60n0:1D, 8
0x1D	SubIndex 029	UINT32	RO	0x60n0:1E, 8
0x1E	SubIndex 030	UINT32	RO	0x60n0:1F, 8
0x1F	SubIndex 031	UINT32	RO	0x60n0:20, 8
0x20	SubIndex 032	UINT32	RO	0x60n0:21, 8
0x21	SubIndex 033	UINT32	RO	0x60n0:22, 8
0x22	SubIndex 034	UINT32	RO	0x60n0:23, 8
0x23	SubIndex 035	UINT32	RO	0x60n0:24, 8
0x24	SubIndex 036	UINT32	RO	0x60n0:25, 8
0x25	SubIndex 037	UINT32	RO	0x60n0:26, 8
0x26	SubIndex 038	UINT32	RO	0x60n0:27, 8
0x27	SubIndex 039	UINT32	RO	0x60n0:28, 8
0x28	SubIndex 040	UINT32	RO	0x60n0:29, 8
0x29	SubIndex 041	UINT32	RO	0x60n0:2A, 8

▶ 0x160n COM RxPDO-Map Output Ch (n = 0~1)

Index	Sub	Name	Type	Access	Value
0x160n	0x00	SubIndex 000	UINT8	RO	0x26
	0x01	SubIndex 001	UINT32	RO	0x70n0:01, 1
	0x02	SubIndex 002	UINT32	RO	0x70n0:02, 1
	0x03	SubIndex 003	UINT32	RO	0x70n0:03, 1
	0x04	SubIndex 004	UINT32	RO	0x70n0:04, 1
	0x05	SubIndex 005	UINT32	RO	0x70n0:05, 1
	0x06	SubIndex 006	UINT32	RO	0x0000:00, 3
	0x07	SubIndex 007	UINT32	RO	0x70n0:09, 8
	0x08	SubIndex 008	UINT32	RO	0x70n0:0B, 8
	0x09	SubIndex 009	UINT32	RO	0x70n0:0C, 8
	0x0A	SubIndex 010	UINT32	RO	0x70n0:0D, 8
	0x0B	SubIndex 011	UINT32	RO	0x70n0:0E, 8
	0x0C	SubIndex 012	UINT32	RO	0x70n0:0F, 8
	0x0D	SubIndex 013	UINT32	RO	0x70n0:10, 8
	0x0E	SubIndex 014	UINT32	RO	0x70n0:11, 8
	0x0F	SubIndex 015	UINT32	RO	0x70n0:12, 8
	0x10	SubIndex 016	UINT32	RO	0x70n0:13, 8
	0x11	SubIndex 017	UINT32	RO	0x70n0:14, 8
	0x12	SubIndex 018	UINT32	RO	0x70n0:15, 8
	0x13	SubIndex 019	UINT32	RO	0x70n0:16, 8
	0x14	SubIndex 020	UINT32	RO	0x70n0:17, 8
	0x15	SubIndex 021	UINT32	RO	0x70n0:18, 8
	0x16	SubIndex 022	UINT32	RO	0x70n0:19, 8
	0x17	SubIndex 023	UINT32	RO	0x70n0:1A, 8
	0x18	SubIndex 024	UINT32	RO	0x70n0:1B, 8
	0x19	SubIndex 025	UINT32	RO	0x70n0:1C, 8
	0x1A	SubIndex 026	UINT32	RO	0x70n0:1D, 8
	0x1B	SubIndex 027	UINT32	RO	0x70n0:1E, 8
	0x1C	SubIndex 028	UINT32	RO	0x70n0:1F, 8
	0x1D	SubIndex 029	UINT32	RO	0x70n0:20, 8
	0x1E	SubIndex 030	UINT32	RO	0x70n0:21, 8

0x1F	SubIndex 031	UINT32	RO	0x70n0:22, 8
0x20	SubIndex 032	UINT32	RO	0x70n0:23, 8
0x21	SubIndex 033	UINT32	RO	0x70n0:24, 8
0x22	SubIndex 034	UINT32	RO	0x70n0:25, 8
0x23	SubIndex 035	UINT32	RO	0x70n0:26, 8
0x24	SubIndex 036	UINT32	RO	0x70n0:27, 8
0x25	SubIndex 037	UINT32	RO	0x70n0:28, 8
0x26	SubIndex 038	UINT32	RO	0x70n0:29, 8
0x27	SubIndex 039	UINT32	RO	0x70n0:2A, 8

3.15.3 SDO Object Description

▶ 0x80n0 – COM Setting Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value
0x60n0	0x00	COM Setting Ch.n	UINT8	RW	0x05
	0x01	Data Bit	UINT32	RW	0x00000000
	0x02	Stop Bit	UINT32	RW	0x00000000
	0x03	Parity Bit	UINT32	RW	0x00000000
	0x04	Baudrate	UINT32	RW	0x00000005

이 Object 는 COM Setting 값들을 보여줍니다.

Data Bit : COM 의 Data Bit 값을 설정합니다.

Stop Bit : COM 의 Stop Bit 값을 설정합니다.

Parity Bit : COM 의 Parity Bit 값을 설정합니다.

Baudrate : COM 의 Baudrate 값을 설정합니다.

▶ 0xF001 – Setting Save Flag

Index	Sub	Name	Type	Access	Value
0xF001	0x00	Setting Save Flag	UINT16	RW	0x0000

Setting Save Flag : Setting 값의 저장 유무 입니다.

Value	Meaning
0	Setting 값을 저장하지 않습니다.
1	Setting 값을 저장합니다.

▶ 0x60n0 – COM Inputs Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x60n0	0x00	COM Inputs Ch. n	UINT8	RO	0x2A	-
	0x01	Transmit accepted	BOOL	RO	0x00	○
	0x02	Receive request	BOOL	RO	0x00	○
	0x03	Init accepted	BOOL	RO	0x00	○
	0x04	Buffer full	BOOL	RO	0x00	○
	0x05	Parity error	BOOL	RO	0x00	○
	0x06	Framing error	BOOL	RO	0x00	○
	0x07	Overrun error	BOOL	RO	0x00	○
	0x08	Serial Type	UINT32	RO	0x00000000	○
	0x09	Input length	UINT8	RO	0x00	○
	0x0B	Data In 0	UINT8	RO	0x00	○
	0x0C	Data In 1	UINT8	RO	0x00	○
	0x0D	Data In 2	UINT8	RO	0x00	○
	0x0E	Data In 3	UINT8	RO	0x00	○
	0x0F	Data In 4	UINT8	RO	0x00	○
	0x10	Data In 5	UINT8	RO	0x00	○
	0x11	Data In 6	UINT8	RO	0x00	○
	0x12	Data In 7	UINT8	RO	0x00	○
	0x13	Data In 8	UINT8	RO	0x00	○
	0x14	Data In 9	UINT8	RO	0x00	○
	0x15	Data In 10	UINT8	RO	0x00	○
	0x16	Data In 11	UINT8	RO	0x00	○
	0x17	Data In 12	UINT8	RO	0x00	○
	0x18	Data In 13	UINT8	RO	0x00	○
0x19	Data In 14	UINT8	RO	0x00	○	
0x1A	Data In 15	UINT8	RO	0x00	○	
0x1B	Data In 16	UINT8	RO	0x00	○	
0x1C	Data In 17	UINT8	RO	0x00	○	
0x1D	Data In 18	UINT8	RO	0x00	○	
0x1E	Data In 19	UINT8	RO	0x00	○	

	0x1F	Data In 20	UINT8	RO	0x00	○
	0x20	Data In 21	UINT8	RO	0x00	○
	0x21	Data In 22	UINT8	RO	0x00	○
	0x22	Data In 23	UINT8	RO	0x00	○
	0x23	Data In 24	UINT8	RO	0x00	○
	0x24	Data In 25	UINT8	RO	0x00	○
	0x25	Data In 26	UINT8	RO	0x00	○
	0x26	Data In 27	UINT8	RO	0x00	○
	0x27	Data In 28	UINT8	RO	0x00	○
	0x28	Data In 29	UINT8	RO	0x00	○
	0x29	Data In 30	UINT8	RO	0x00	○
	0x2A	Data In 31	UINT8	RO	0x00	○

COM Input Ch.n : Ch n 의 시리얼 입력 값 입니다.

▶ 0x60n1 – COM Status Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x60n1	0x00	Status Ch. n	UINT8	RO	0x01	
	0x01	Status	UINT16	RO	0x0000	○

COM Status Ch.n : Ch n 의 COM 의 Status 값 입니다.

▶ 0x70n0 – COM Outputs Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x70n0	0x00	COM Inputs Ch. n	UINT8	RO	0x2A	-
	0x01	Transmit request	BOOL	RO	0x00	○
	0x02	Receive accepted	BOOL	RO	0x00	○
	0x03	Init request	BOOL	RO	0x00	○
	0x04	Send continuous	BOOL	RO	0x00	○

0x05	Serial Type	UINT32	RO	0x00000000	○
0x09	Output length	BOOL	RO	0x00	○
0x0E	Data In 0	UINT8	RO	0x00	○
0x0F	Data In 1	UINT8	RO	0x00	○
0x10	Data In 2	UINT8	RO	0x00	○
0x11	Data In 3	UINT8	RO	0x00	○
0x12	Data In 4	UINT8	RO	0x00	○
0x13	Data In 5	UINT8	RO	0x00	○
0x14	Data In 6	UINT8	RO	0x00	○
0x15	Data In 7	UINT8	RO	0x00	○
0x16	Data In 8	UINT8	RO	0x00	○
0x17	Data In 9	UINT8	RO	0x00	○
0x18	Data In 10	UINT8	RO	0x00	○
0x19	Data In 11	UINT8	RO	0x00	○
0x1A	Data In 12	UINT8	RO	0x00	○
0x1B	Data In 13	UINT8	RO	0x00	○
0x1C	Data In 14	UINT8	RO	0x00	○
0x1D	Data In 15	UINT8	RO	0x00	○
0x1E	Data In 16	UINT8	RO	0x00	○
0x1F	Data In 17	UINT8	RO	0x00	○
0x20	Data In 18	UINT8	RO	0x00	○
0x21	Data In 19	UINT8	RO	0x00	○
0x22	Data In 20	UINT8	RO	0x00	○
0x23	Data In 21	UINT8	RO	0x00	○
0x24	Data In 22	UINT8	RO	0x00	○
0x25	Data In 23	UINT8	RO	0x00	○
0x26	Data In 24	UINT8	RO	0x00	○
0x27	Data In 25	UINT8	RO	0x00	○
0x28	Data In 26	UINT8	RO	0x00	○
0x29	Data In 27	UINT8	RO	0x00	○
0x2A	Data In 28	UINT8	RO	0x00	○
0x28	Data In 29	UINT8	RO	0x00	○
0x29	Data In 30	UINT8	RO	0x00	○

	0x2A	Data In 31	UINT8	RO	0x00	○
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▶ 0x70n1 – COM Ctrl Ch (n = 0 ~ 1: 채널 번호)

Index	Sub	Name	Type	Access	Value	PDO
0x70n1	0x00	Ctrl Ch. n	UINT8	RO	0x01	
	0x01	Ctrl	UINT16	RO	0x0000	○

COM Ctrl Ch.n : Ch n 의 COM 의 Ctrl 값 입니다.

개정 이력

구분	개정일	개정 내용	작성자
초판	2015. 11. 10.	초판	유영선

2015년 11월 11일 초판 인쇄

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