Systembeschreibung | System description | Description du système Descrizione del sistema | Descripción de sistema | Systembeskrivning

> R412025062-BAL-001-AA 2023-06; Replaces: -DE/EN/FR/IT/ES/SV

AVENTICS™ EtherCAT OMRON

Buskoppler AES/Ventiltreiber AV Bus Coupler AES/Valve Driver AV Coupleur de bus AES/Pilote de distributeurs AV Accoppiatore bus AES/driver valvole AV Acoplador de bus AES/controladores de válvula AV Fältbussnod AES/Ventildrivenhet AV







1 Zu dieser Dokumentation

1.1 Gültigkeit der Dokumentation

Diese Dokumentation gilt für die Buskoppler der Serie AES für EtherCAT, welche an eine OMRON-SPS angeschlossen werden. Diese Dokumentation richtet sich an Programmierer und Elektroplaner.

1.2 Erforderliche und ergänzende Dokumentation

Dokumentation	Dokumentart / Material- nummer	Bemerkung
Systembeschreibung des	Systembeschreibung /	PDF-Datei auf CD
AES-Buskopplers für Ether-	R412018142	Online im Emerson Store

2 Netzwerk konfigurieren

- 1. AES-EtherCAT-Busmodul konfigurieren, welches an den OMRON-plc angeschlossen ist.
- Folgende Konfigurationsdateien aus dem Verzeichnis "..\OMRON\Sysmac Studio\IODeviceProfiles\EsiFiles\UserEsiFiles" löschen, falls diese vorhanden sind: "AES_EcatKoppler.xml" und "AES_Slot.xml", "AES2_EcatKoppler.xml" und "AES2_Slot.xml".
- 3. Folgende neue Konfigurationsdateien im Verzeichnis speichern und Sysmac Studio starten:
 - "AES_EcatKoppler_om.xml" "AES2_EcatKoppler_om.xml" "AES_Slot_om.xml" "AES2_Slot_om.xml"

2.1 Netzwerkkonfigurationen vergleichen und zusammenführen



2. Verbindung zur SPS aufbauen (Online gehen).



3. Rechter Mausklick auf *Ethercat_Master* (2) und im Auswahlmenü *Compare* and Merge with Actual Network Configuration wählen.

Knotenadresse ändern

Failed to get the production information. Reason : The actual network configuration has a slave whose node address is outside the range. Correct the node address by writing a valid node address to the slave.
Schließen

Abb. 1: Fehler bei der Knotenadresse

Erscheint die Fehlermeldung *Failed to get Production information*, muss die Knotenadresse der angeschlossenen Geräte in den zulässigen Bereich (1 ... 192) geändert werden.

EtherCAT-Adresse vergeben

A VORSICHT

Verletzungsgefahr durch Änderungen der Einstellungen im laufenden Betrieb

Unkontrollierten Bewegungen der Aktoren sind möglich!

▶ Einstellungen niemals im laufenden Betrieb ändern.

Der Buskoppler benötigt im EtherCAT-Netzwerk eine eindeutige Adresse, um von der Steuerung erkannt zu werden.





Abb. 2: Adressschalter S1 und S2 am Buskoppler

Tab. 1: Adressierungsbeispiele

Schalterposition S1	Schalterposition S2	Stationsadresse			
High-Nibble	Low-Nibble				
(hexadezimale Beschrif- tung)	hexadezimale Beschriftung)				
0	1	1			
0	2	2			
0	F	15			
1	0	16			
1	1	17			
9	F	159			
A	0	160			
С	0	192			

Aktuelle Netzwerkübernahme angepasst

				- • •
	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
v:0x0	5 : A	Matched	5 : A	Matched
v:0x0	16 :	Matched	16 :	Matched

Abb. 4: Konfiguration angepasst

Die Netzwerkübernahme war erfolgreich, wenn in beiden Spalten die Bezeichnung "Matched" erscheint.

► Konfiguration an SPS senden.

4 Module konfigurieren

Ventile müssen manuell der Konfiguration hinzugefügt werden, bevor der Scan gestartet wird. Die restliche Konfiguration kann nun automatisch erkannt werden.

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	PDO Communications Cy
Node Address	5
Enable/Disable Settings	Enabled
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Setting
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not evist
Sotting Darameters	Setting
Setting Parameters	Edit Setting Paramete
Backup Parameter Settings	
	Setting

Abb. 5: Modulkonfiguration bearbeiten

3 Aktuelle Netzwerkkonfiguration übernehmen



1. Klick auf Apply actual network configuration (1).

2. Klick auf *Apply* und danach auf *confirm*.

			1	ltem name
	(2)		(3)	
	Netw	Comparison result	(S) Actua	Lower Configuration
	Mast	Matched	Mast	
Rev:0x0	5 : A	Matched	5 : A	Acquisition failed
Rev:0x0	16	Matched	16	A Acquisition failed

Abb. 3: Netzwerkkonfiguration

3. Überprüfen, ob in beiden Spalten *Comparison result* (2) und *Lower configuration* (3) die Bezeichnung *Matched* erscheint.

Aktuelle Netzwerkübernahme fehlgeschlagen

- Fehler Aquisition failed wird angezeigt:
- 1. Löschen der Geräte in Sysmac Studio.
- 2. Klick auf Apply actual network configuration (1).

ECAT EtherC	AT -🗆 N	lode5 : AES	-D-BC-ECAT (- Node16 : A	AES-D-BC-ECAT	×				
Posit	Slot	1	Module	1				I		
Node16	5 : AES-D-BC	-ECAT (EOO	2)							
0	Terminals								Item nar	ne
1	Terminals								Device name	_
2	Terminals								Droduct name	
3	Terminals								Connected positio	n
4	Terminals									
5	Terminals								PDO Map Setting	
6	Terminals									
7	Terminals									
8	Terminals									
9	Terminals									
10	Terminals									
		Comp	are and Merge wi	ith Actual Module	Configuration					
		- comp	ore one merge in		comgaration					
		Module o	onfiguration on S	ysmac Studio		Actual mo	odule configurati	on		
		Posit	I Slot		odule	Posit	I Slot		Module	
		Node	10 : AE2-D-BC-EC	.AT (EUU2)	1.1.0.10	Node	10 : AE2-D-BC-E	LAT (EUU2)	(-8
		0	Terminals	4 Byte valve	Unit (UXID)	1	ierminais	4 Byte	valve Unit (UXID)	
		1	Terminals)1)	1	ierminais		18 (UXUI)	- 1
		2	Terminals			2	Terminals			
			Terminals			3	Terminals			- 1
		4 6	Terminals			- 4	Terminals			- 1
		6	Terminals			-	Terminals			- 1
		7	Terminals			7	Terminals			
		· ·	Terminals			2	Terminals			- 1
		0	Terminals			0	Terminals			
0.11		10	Terminals			10	Terminals			- 1
Build		10	HER CONTINUES			10	EFF (Citilitais			
🔀 0 Erroi	rs 1 0 V									
	De									
		2				<				5
Fil Output	K Build			_						
				A	oply Actual Module	e Configu	iration			

Abb. 6: Modulkonfiguration übernehmen

- 1. Klick auf Edit Module Configuration für jedes AES-Modul.
- 2. Rechter Mausklick auf 0 Terminal.
- 3. Im Auswahlmenü Compare and Merge with Actual Module Configuration wählen und mit confirm bestätigen.
- 4. Verbindung zur SPS aufbauen (Online gehen).

Modulsendemethode ändern

Standardmäßig ist "Do not send" eingestellt.



Abb. 7: Einstellung der Sendemethode

- 1. Klick auf *Edit Module Configuration* für jedes AES-Modul.
- 2. In Zeile Module config send method (1) Send auswählen.
- 3. Verbindung zur SPS aufbauen (Online gehen).
- 4. Konfiguration an SPS senden.

5 Parameter setzen

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x00000001
PDO Communications Cycle	PDO Communications Cycle 1 (
Node Address	5
Enable/Disable Settings	Enabled 🔹
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Settin g (1) Edit Setting Parameters
Backup Parameter Settings	
Module Configuration	Setting Edit Module Configuration

Edit Setting Parameters	
Item name	Value
0x8000:7C Valve_Para/SubIndex 124	0
0x8000:7D Valve_Para/SubIndex 125	0
0x8000:7E Valve_Para/SubIndex 126	0
0x8010:01 Module_1_Para/SubIndex	0
0x8010:02 Module_1_Para/SubIndex	0
0x8010:03 Module_1_Para/SubIndex	0
0x8010:04 Module_1_Para/SubIndex	0
0x8010:05 Module_1_Para/SubIndex	0
0x8010:06 Module_1_Para/SubIndex	0
0x8010:07 Module_1_Para/SubIndex	0
0x8010:08 Module_1_Para/SubIndex	0
0x8010:09 Module_1_Para/SubIndex	0
0x8010:0A Module_1_Para/SubIndex	0
0x8010:0B Module_1_Para/SubIndex	0
0x8010:0C Module_1_Para/SubIndex	0
0x8010:0D Module_1_Para/SubInde	0
0x8010:0E Module_1_Para/SubIndex	0
0x8010:0F Module_1_Para/SubIndex	0
0x8010:10 Module_1_Para/SubIndex	0
0x8020:01 Module_2_Para/SubIndex	0
0x8020:02 Module_2_Para/SubIndex	0
0x8020:03 Module_2_Para/SubIndex	0
	Return to Default
Help	
Data type : USINT	
Valid range : 0 - 255	
Comment :	
Sunshrapize on the Teelbar to the CPU Unit	as a part of EtherCAT setting. Select
Synchronize on the Toolbar to transfer.	
	OK Cancel Apply

- 1. Verbindung zur SPS beenden (*Offline* gehen).
- Klick auf Edit Setting Parameters (1) f
 ür jedes AES-Modul, um die Standardparameter zu
 ändern.

Die maximale Anzahl an Parametern wird angezeigt. 126 Bytes Ventilparameter und 10x16 IO-Modulparameter.

INFO: Es werden nur die Parameter übertragen, die von den AES-Modulen verwendet werden.

3. Verbindung zur SPS aufbauen (*Online* gehen).

About this documentation 1

1.1 Documentation validity

This documentation is valid for the AES series bus couplers for EtherCAT, which are connected to an OMRON PLC. This documentation is geared toward programmers and electrical engineers.

1.2 Required and supplementary documentation

Documentation	Document type / material number	Remark
System description of the AES bus coupler for EtherCAT	System description / R412018142	PDF file on CD Online in the Emerson store

2 Configuring the network

- 1. Configure the AES EtherCAT bus module connected to the OMRON PLC.
- 2. Delete the following configuration files from the directory "...\OMRON\Sysmac Studio\IODeviceProfiles\EsiFiles\UserEsiFiles" if they exist: "AES_EcatKoppler.xml" and "AES_Slot.xml", "AES2_EcatKoppler.xml" and "AES2_Slot.xml".
- 3. Save the following new configuration files in the directory and start Sysmac Studio:
 - "AES_EcatKoppler_om.xml" "AES2_EcatKoppler_om.xml" "AES_Slot_om.xml" "AES2_Slot_om.xml"

2.1 Comparing and merging network configurations





2. Establish a connection to the PLC (go online).



3. Right click on Ethercat_Master (2) and select Compare and Merge with Actual Network Configuration in the selection menu.

Changing the node address



Fig. 1: Node address error

If the error message Failed to get Production information appears, the node address of the connected devices must be changed to the permissible range (1 ... 192).

Assigning an EtherCAT address

ACAUTION

Danger of injury if changes are made to the settings during operation. Uncontrolled movement of the actuators is possible!

▶ Never change the settings during operation.

The bus coupler requires a unique address in the EtherCAT network in order to be detected by the controller.





Fig. 2: Address switches S1 and S2 on the bus coupler

Table 1: Addressing examples

S1 switch position	S2 switch position	Station address
High nibble	Low nibble	
(hexadecimal label)	(hexadecimal label)	
0	1	1
0	2	2

S1 switch position	S2 switch position	Station address	
High nibble	Low nibble		
(hexadecimal label)	(hexadecimal label)		
0	F	15	
1	0	16	
1	1	17	
9	F	159	
A	0	160	
С	0	192	

3 Applying the current network configuration

k configuratio	on on Sysmac Studio	Node address A	ctual network conf	iguration	Net
Ma M	ster aster		Mast	ter	Ma
	E001 AES-D-BC-ECAT Rev	5	-11	AES-D-BC-ECAT Rev:0x0	5:
	E002 AES-D-BC-ECAT Rev	16	L 🖬	AES-D-BC-ECAT Rev:0x0	16
(1	A Apply actual pa	work configuratio			

- 1. Click on *Apply actual network configuration* (1).
- 2. Click on *Apply* and then on *confirm*.

			1	ítem name
	(3)			- • •
	Netw	Comparison result	(3) Actua	Lower Configuration
	Mast	Matched	Mast	
Rev:0x0	5 : A	Matched	5 : A	Acquisition failed
Rev:0x0	16	Matched	16	A Acquisition failed

Fig. 3: Network configuration

3. Check whether the designation *Matched* appears in both columns *Comparison result* (2) and *Lower configuration* (3).

Current network acquisition failed

The error Aquisition failed is displayed:

- 1. Delete the devices in Sysmac Studio.
- 2. Click on Apply actual network configuration (1).

Current network acquisition adapted

	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
/:0x0	5 : A	Matched	5 : A	Matched
/:0x0	16 :	Matched	16 :	Matched

Fig. 4: Configuration adapted

The network acquisition was successful if the designation "Matched" appears in both columns.

• Send the configuration to the PLC.

4 Configuring modules

Valves must be added manually to the configuration before the scan is started. The rest of the configuration can now be detected automatically.

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	PDO Communications Cy.
Node Address	5
Enable/Disable Settings	Enabled
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Setting
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Setting Edit Setting Parameter
Backup Parameter Settings	
Module Configuration	Setting 1) Edit Module Configuratio

Fig. 5: Editing the module configuration

ECAT EtherCAT	-🗆 No	ode5 : AES	-D-BC-ECAT (- Node16 :	AES-D-BC-ECAT	×				
Posit	Slot	1	Module	1				(í
Node16 : A	ES-D-BC-	ECAT (E002	2)							
0 🎹 Te	erminals								Item nar	me
1 🎹 Te	erminals								Device name	
2 🏢 T	erminals								Model	
3 🎹 Te	erminals								Product name	
4 ⊞ ⊺	erminals								Connected positio	JN
5 🎹 Te	erminals								PDO Map Setting	
6 ⊞ ⊺	erminals									
7 🏢 Te	erminals									
8 🎹 Te	erminals									
9 ⊞ ⊺	erminals									
10 🎹 Te	erminals									
		S Comp	are and Merge w	th Actual Modu	le Configuration					
		Comp	are and merge w	th Actual Wood	e configuration			_		
		Module co	onfiguration on S	ysmac Studio		Actual mo	odule configurati	on		
		Posit	l Slot		vlodule	Posit	l Slot	I	Module	Ne
		Node	16 : AES-D-BC-EC	AT (E002)	11 1 10 10	Node	16 : AES-D-BC-E	CAT (E002)		4
		0	Terminals	4 Byte Valve	Unit (0x1D)	0	I erminals	4 Byte	Valve Unit (0x1D)	81
		1	Terminals	BDO8M8 (0:	(01)	1	I erminals	- 8DO8V	48 (0x01)	
		2	Terminals			2	I erminals			
		3	Ierminals			3	I erminals			
		4	I erminals			4	I erminals			
		5	Terminals			5	#Terminals			
		6	Terminals			6	#Terminals			
		7	Terminals			7	#Terminals			
		8	##Terminals			8	#Terminals			
		9	Terminals			9	#Terminals			
Build	_	10	#Terminals			10	Terminals			
🔀 0 Errors	1 0 V									
	Dr									
		<			>	<				>
🗗 Output	Build				Innhi Actual Madul	a Canfia	uration			
		Apply Actual Module Configuration								

Fig. 6: Applying the module configuration

- 1. Click on *Edit Module Configuration* for each AES module.
- 2. Right click on 0 Terminal.
- 3. In the selection menu select *Compare and Merge with Actual Module Configuration* and confirm with *confirm*.
- 4. Establish a connection to the PLC (go online).

Changing the module send method

By default, "Do not send" is set.



Fig. 7: Setting the send method

- 1. Click on *Edit Module Configuration* for each AES module.
- 2. In the line *Module config send method* (1) select *Send*.
- **3.** Establish a connection to the PLC (go *online*).
- 4. Send the configuration to the PLC.

5 Setting parameters

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x00000001
PDO Communications Cycle	PDO Communications Cycle 1 (
Node Address	5
Enable/Disable Settings	Enabled 🗸
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Setting (1) Edit Setting Parameters
Backup Parameter Settings	
Module Configuration	Setting Edit Module Configuration

Edit Setting Parameters	
Item name	Value
0x8000:7C Valve_Para/SubIndex 124	0
0x8000:7D Valve_Para/SubIndex 125	0
0x8000:7E Valve_Para/SubIndex 126	0
0x8010:01 Module_1_Para/SubIndex	0
0x8010:02 Module_1_Para/SubIndex	0
0x8010:03 Module_1_Para/SubIndex	0
0x8010:04 Module_1_Para/SubIndex	0
0x8010:05 Module_1_Para/SubIndex	0
0x8010:06 Module_1_Para/SubIndex	0
0x8010:07 Module_1_Para/SubIndex	0
0x8010:08 Module_1_Para/SubIndex	0
0x8010:09 Module_1_Para/SubIndex	0
0x8010:0A Module_1_Para/SubIndex	0
0x8010:0B Module_1_Para/SubIndex	0
0x8010:0C Module_1_Para/SubIndex	0
0x8010:0D Module_1_Para/SubInde	0
0x8010:0E Module_1_Para/SubIndex	0
0x8010:0F Module_1_Para/SubIndex	0
0x8010:10 Module_1_Para/SubIndex	0
0x8020:01 Module_2_Para/SubIndex	0
0x8020:02 Module_2_Para/SubIndex	0
0x8020:03 Module_2_Para/SubIndex	0
	Return to Default
_ Help	
Data type : USINT	
Valid range : 0 - 255	
Comment :	
This perspector is several in the CDU Uni	t as a part of EtherCAT setting Select
Synchronize on the Toolbar to transfer	t as a part of EtherCAT setting. Select
<u></u>	
	OK Cancel Apply
	100

- 1. Terminate the connection to the PLC (go offline).
- 2. Click on *Edit Setting Parameters* (1) for each AES module to change the default parameters.

The maximum number of parameters is displayed. 126 bytes valve parameters and 10x16 IO module parameters.

INFO: Only the parameters used by the AES modules are transmitted.

3. Establish a connection to the PLC (go online).

1 À propos de cette documentation

1.1 Validité de la documentation

Cette documentation s'applique au coupleur de bus de la série AES pour Ether-CAT, qui est raccordé à une API OMRON. Cette documentation s'adresse aux programmateurs et aux planificateurs-électriciens.

1.2 Documentation nécessaire et complémentaire

Documentation	Type de document/Réfé- rence	Remarque
Description du système du coupleur de bus AES pour EtherCAT	Description du système/ R412018142	Fichier PDF sur CD En ligne dans l'Emerson Store

2 Configuration du réseau

- 1. Configurer le module bus AES EtherCAT qui est raccordé à l'API OMRON.
- Le cas échéant, supprimer le fichiers de configuration suivants du répertoire
 «..\OMRON\Sysmac Studio\IODeviceProfiles\EsiFiles\UserEsiFiles »:
 « AES_EcatKoppler.xml » et « AES_Slot.xml »,
 - « AES2_EcatKoppler.xml » et « AES2_Slot.xml ».
- **3.** Enregistrer les nouveaux fichiers de configuration suivants dans le répertoire et démarrer Sysmac Studio :
 - « AES_EcatKoppler_om.xml »
 - « AES2_EcatKoppler_om.xml »
 - « AES_Slot_om.xml »
 - « AES2_Slot_om.xml »

2.1 Comparaison et fusion des configurations réseau



1. Double-cliquer sur EtherCAT (1).

2. Établir la connexion avec l'API (sélectionner En ligne).



3. Faire un clic droit sur *Ethercat_Master* (2) et sélectionner *Compare and Merge with Actual Network Configuration* dans le menu de sélection.

Modification de l'adresse de nœud

Failed to get the production information. Reason : The actual network configuration has a slave whose node address is outside the range. Correct the node address by writing a valid node address to the slave.
Schließen

Fig. 1: Erreur relative à l'adresse de nœud

Si le message d'erreur *Failed to get Production information* apparaît, l'adresse de nœud des appareils raccordés doit être modifiée dans la plage autorisée (1 ... 192).

Attribution d'une adresse EtherCAT

ATTENTION

Risque de blessure dû à une modification des réglages en cours de fonctionnement

- Des mouvements incontrôlés des actionneurs sont possibles !
- Ne jamais modifier les réglages en cours de fonctionnement.

Dans le réseau EtherCAT, le coupleur de bus nécessite une adresse univoque afin d'être détecté par la commande.





Fig. 2: Commutateurs d'adresse S1 et S2 du coupleur de bus

Tab. 1: Exemples d'adressage

Position du commuta- teur S1	Position du commuta- teur S2	Adresse de la station
Nibble supérieur	Nibble inférieur	
(numérotation hexadéci- male)	(numérotation hexadéci- male)	
0	1	1
0	2	2
0	F	15
1	0	16
1	1	17
9	F	159
A	0	160
С	0	192

3 Application de la configuration réseau actuelle



- 1. Cliquer sur Apply actual network configuration (1).
- 2. Cliquer sur *Apply* puis sur *confirm*.

]	ltem name
	(2)			- • •
	Netw	Comparison result	(3) Actua	Lower Configuration
	Mast	Matched	Mast	
Rev:0x0	5 : A	Matched	5 : A	Acquisition failed
Rev:0x0	16	Matched	16 :	A Acquisition failed

Fig. 3: Configuration réseau

3. Dans les deux colonnes *Comparison result* (2) et *Lower configuration* (3), vérifier que la désignation *Matched* apparaît.

Échec de l'application du réseau actuel

L'erreur Aquisition failed s'affiche :

- 1. Suppression des appareils dans Sysmac Studio.
- 2. Cliquer sur Apply actual network configuration (1).

Adaptation de l'application du réseau actuel

				- • •
	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
v:0x0	5 : A	Matched	5 : A	Matched
v:0x0	16 :	Matched	16 :	Matched

Fig. 4: Configuration adaptée

L'application du réseau est réussie si la désignation « Matched » apparaît dans les deux colonnes.

Envoyer la configuration à l'API.

4 Configuration des modules

Les distributeurs doivent être ajoutés manuellement à la configuration avant de démarrer le scan. Le reste de la configuration peut alors être détecté automatiquement.

3	
Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	 PDO Communications Cy
Node Address	5
Enable/Disable Settings	Enabled
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Setting Edit Setting Parameter
Backup Parameter Settings	
Module Configuration	(1) Setting (1) Edit Module Configuratio

Fig. 5: Modification de la configuration des modules

ECA EtherCA	т – п	ode5 : AES	-D-BC-ECAT (- Node	16 : AES-D-BC-ECA	T ×					
(Posit)	Slot	I	Module		I				I		
Node16 :	AES-D-BC	-ECAT (E00	2)								
0 🖩	Terminals									Item hai	ne
1	Terminals									Device name	_
2 🖩	Terminals									Droduct name	
3 🖩	Terminals									Connected positiv	m
4 🗰	Terminals										
5 🏢	Terminals									PDO Map Setting	
6 🏢	Terminals										
7	Terminals										
8 🖩	Terminals										
9 🖩	Terminals										
10	Terminals										
		S Comp	are and Merge w	ith Actual M	dule Configuration	,					
		Comp	are and werge w	ICH Actual IVI	Judie Coningulation				_		
		Module o	onfiguration on S	sysmac Studi		Actu	al mo	dule configuration	on I	Marchala	
		Posit		1 CAT (5002)	Module		Posit		I AT (E002)	Module	
		Node	Torminals	E (Bute V	alva Linit (0x1D)		node 0	To: AC3-D-BC-EC	AT (2002)	Value Unit (0x1D)	4
		1	Terminals					Terminals		48 (0~01)	
		2	Terminals	# ODCOIVI	5 (0.01)			Terminals	# 0000m	10 (0.01)	
		2	Terminals				2	Terminals			
			Terminals					Terminals			
			Terminals					Terminals			
		6	Terminals				6	Terminals			
		7	Terminals				7	Terminals			
		8	Terminals					Terminals			
		q	Terminals				q	Terminals			
P. dat		10	Terminals				10	Terminals			
build			Terrindis				10				
0 Errors	100										
1 1	De										
		<				2 <					5
E Output	🔨 Build										
					Apply Actual Mo	odule Co	nfigu	iration			

Fig. 6: Application de la configuration des modules

- 1. Cliquer sur *Edit Module Configuration* pour chaque module AES.
- 2. Faire un clic droit sur 0 Terminal.
- 3. Dans le menu de sélection, sélectionner *Compare and Merge with Actual Module Configuration* et confirmer avec *confirm*.
- 4. Établir la connexion avec l'API (sélectionner En ligne).

Modification de la méthode d'envoi des modules

« Do not send » est le réglage par défaut.



Fig. 7: Réglage de la méthode d'envoi

- 1. Cliquer sur *Edit Module Configuration* pour chaque module AES.
- 2. Dans la ligne Module config send method (1), sélectionner Send.
- 3. Établir la connexion avec l'API (sélectionner En ligne).
- 4. Envoyer la configuration à l'API.

5 Définition des paramètres

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	PDO Communications Cycle 1 (
Node Address	5
Enable/Disable Settings	Enabled 🔻
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Settin g (1) Edit Setting Parameters
Backup Parameter Settings	
Module Configuration	Setting Edit Module Configuration

Edit Setting Parameters	
Item name	Value
0x8000:7C Valve_Para/SubIndex 124	0
0x8000:7D Valve_Para/SubIndex 125	0
0x8000:7E Valve_Para/SubIndex 126	0
0x8010:01 Module_1_Para/SubIndex	0
0x8010:02 Module_1_Para/SubIndex	0
0x8010:03 Module_1_Para/SubIndex	0
0x8010:04 Module_1_Para/SubIndex	0
0x8010:05 Module_1_Para/SubIndex	0
0x8010:06 Module_1_Para/SubIndex	0
0x8010:07 Module_1_Para/SubIndex	0
0x8010:08 Module_1_Para/SubIndex	0
0x8010:09 Module_1_Para/SubIndex	0
0x8010:0A Module_1_Para/SubIndex	0
0x8010:0B Module_1_Para/SubIndex	0
0x8010:0C Module_1_Para/SubIndex	0
0x8010:0D Module_1_Para/SubInde	0
0x8010:0E Module_1_Para/SubIndex	0
0x8010:0F Module_1_Para/SubIndex	0
0x8010:10 Module_1_Para/SubIndex	0
0x8020:01 Module_2_Para/Subindex	0
0x8020:02 Module_2_Para/Subindex	0
0x8020:03 Module_2_Para/Subindex	
	Return to Default
┌ Help ────	
Data type : USINT	
Valid range : 0 - 255	
Comment :	
Suppression and the Teelbar to transfer	t as a part of EtherCAT setting. Select
Synchronize on the roolbar to transfer	
	OK Cancel Apply

- 1. Terminer la connexion avec l'API (sélectionner *Hors ligne*).
- Cliquer sur *Edit Setting Parameters* (1) pour chaque module AES pour modifier les paramètres standard.

Le nombre maximal de paramètres s'affiche.

126 octets de paramètres de distributeurs et 10x16 paramètres de modules E/S. **INFO:** Seuls les paramètres utilisés par les modules AES sont transmis.

3. Établir la connexion avec l'API (sélectionner *En ligne*).

1 Sulla presente documentazione

1.1 Validità della documentazione

Questa documentazione è valida per l'accoppiatore bus della serie AES per Ether-CAT collegato a un PLC OMRON. Questa documentazione è indirizzata a programmatori e a progettisti elettrotecnici.

1.2 Documentazione necessaria e complementare

Documentazione	Tipo di documento / codice	Osservazione
Descrizione dell'accoppiatore	Descrizione del sistema /	File PDF su CD
bus AES per EtherCAT	R412018142	Online nell'Emerson Store

2 Configurare la rete

- 1. Configurare il modulo bus AES-EtherCAT collegato al PLC OMRON.
- Cancellare i seguenti dati di configurazione dalla directory "..\OMRON\Sysmac Studio\IODeviceProfiles\EsiFiles\UserEsiFiles", nel caso siano presenti: "AES_EcatKoppler.xml" e "AES_Slot.xml", "AEC2_EcatKoppler.aml" e "AES_Slot.xml",
 - "AES2_EcatKoppler.xml" e "AES2_Slot.xml".
- Salvare i nuovi dati di configurazione seguenti nella directory e avviare Sysmac Studio:
 - "AES_EcatKoppler_om.xml"
 - "AES2_EcatKoppler_om.xml"
 - "AES_Slot_om.xml"
 - "AES2_Slot_om.xml"

2.1 Confrontare e unire le configurazioni di rete



1. Doppio clic del mouse su EtherCAT (1).

2. Creare una connessione al PLC (andare online).



3. Cliccare con il tasto destro del mouse su *Ethercat_Master* (2) e selezionare nel menu a discesa *Compare and Merge with Actual Network Configuration*.

Modificare l'indirizzo di nodo

Col	mpare and Merge with Actual Network Configuration
Fa	iled to get the production information.
Re	eason : The actual network configuration has a slave whose node address is outside the range.
Co	prrect the node address by writing a valid node address to the slave.
	Schließen

Fig. 1: Errore nell'indirizzo di nodo

Se viene visualizzato il messaggio di errore *Failed to get Production information*, è necessario modificare l'indirizzo di nodo degli apparecchi collegati nel campo consentito (1 ... 192).

Assegnare l'indirizzo EtherCAT

ATTENZIONE

Pericolo di lesioni a causa di modifiche delle impostazioni durante il funzionamento.

Sono possibili movimenti incontrollati degli attuatori!

▶ Non modificare mai le impostazioni in fase di funzionamento.

Per poter essere riconosciuto dal comando, l'accoppiatore bus deve avere un indirizzo univoco nella rete EtherCAT.





Fig. 2: Selettori indirizzo S1 e S2 sull'accoppiatore bus

Tab. 1: Esempi di indirizzamento

Posizione selettore S1	Posizione selettore S2	Indirizzo della stazione
High nibble	Low nibble	
(dicitura esadecimale)	(dicitura esadecimale)	
0	1	1

Posizione selettore S1	Posizione selettore S2	Indirizzo della stazione
High nibble	Low nibble	
(dicitura esadecimale)	(dicitura esadecimale)	
0	2	2
0	F	15
1	0	16
1	1	17
9	F	159
A	0	160
С	0	192

3 Applicare la configurazione di rete attuale

k configuration on Sysmac Studio	Node address Actual network configuration	Net
Master Master	Master	Ma
E001 AES-D-BC-ECAT Rev:	5 AES-D-BC-ECAT Rev:0x0	5:.
E002 AES-D-BC-ECAT Rev:	16 AES-D-BC-ECAT Rev:0x0	16
(1) ◀ Apply actual net	twork configuration	

- 1. Cliccare su *Apply actual network configuration* (1).
- 2. Cliccare su *Apply* e poi su *confirm*.

			1	ltem name
	(2)			- • ×
	Netw	Comparison result	(3) Actua	Lower Configuration
	Mast	Matched	Mast	
Rev:0x0	5 : A	Matched	5 : A	Acquisition failed
Rev:0x0	16	Matched	16 :	A Acquisition failed

Fig. 3: Configurazione di rete

3. Controllare se in entrambe le colonne *Comparison result* (2) e *Lower configuration* (3) è presente la denominazione *Matched*.

Applicazione della rete attuale non riuscita

Viene visualizzato l'errore Aquisition failed:

- 1. Cancellazione degli apparecchi nel Sysmac Studio.
- 2. Cliccare su Apply actual network configuration (1).

Applicazione della rete attuale modificata

	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
/:0x0	5 : A	Matched	5 : A	Matched
/:0x0	16 :	Matched	16 :	Matched

Fig. 4: Configurazione modificata

L'applicazione di rete è riuscita se in entrambe le colonne appare la denominazione "Matched".

► Inviare la configurazione al PLC.

4 Configurare i moduli

Le valvole devono essere aggiunte manualmente alla configurazione prima di avviare la scansione. La restante configurazione può essere ora riconosciuta automaticamente.

~ ~			
			•
	Item name		Value
Device r	name		E001
Model n	ame		AES-D-BC-ECAT
Product	name		AES Fieldbus Coupler
Revision	1		0x00000001
PDO Co	mmunications Cyc	le	PDO Communications Cy
Node A	ddress		5
Enable/I	Disable Settings		Enabled
Serial N	umber		0x0000000
PDO Ma	ap Settings		Edit PDO Map Settings
Enable [Distributed Clock		
Shift Tin	ne Setting		
Referen	ce Clock		Not exist
Setting	Parameters		Setting Edit Setting Parameters
Backup	Parameter Settings	5	
Module	Configuration	(1)	Setting Edit Module Configuration

Fig. 5: Modificare la configurazione dei moduli

ECAT EtherCAT	-🗆 N			- Node16 : A	AES-D-BC-ECAT :	×				
(Posit)	Slot	1	Module	1				(
Node16 : Al	ES-D-BC-	ECAT (E00	2)							
0 III Te	erminals								Item nar	me
1 III Te	erminals								Device name	_
2 III Te	erminals								Nodel D	
3 🏢 Te	erminals								Connected peritic	
4 ⊞ ⊺∈	erminals								connecteu positic	
5 🏢 Te	erminals								PDO Map Setting	
6 🎹 Te	erminals									
7 🎹 Te	erminals									
8 🗰 Te	erminals									
9 III Te	erminals									
10 🎹 Te	erminals									
		S Com	are and Merge w	ith Actual Module	Configuration					
		La comp	are one merge of	······	contiguitation (alala an Email			
		Module c	onfiguration on a	sysmac studio	/ 	Actual mo	dule configurati	on I	Madala	
		Posit			lodule	Post		1 CAT (C002)	Module	
		Node	IO: ACS-D-BC-EC	AT (COUZ)	Unit (0-4D)	Node	IO: ACS-D-BC-E	AT (COUZ)	Value Usit (0.1D)	-8
		1	Terminals			1	III Terminais	= 4 byte		- 1
		1	Terminals		51)	1	iiii rerminais	E ODOON	10 (UXU1)	- 1
		2	ierminais			2	ierminais			- 1
			Terminals			3	iii rerminais			- 1
		4	ierminais			4	ierminais			- 1
		2	ierminais			2	ierminais			- 1
		0	ierminais				ierminais			- 1
			ierminais				ierminais			- 1
			i erminais			Ô	ierminais			- 1
		9	ierminais			10	ierminais			- 1
Build		10	I erminals			10	IIII I erminals			- 1
🔀 0 Errors	1 0 V									
	De									
	0.11	<				<				
Output 🔀	Build			A	poly Actual Module	e Configu	ration			
						ge				

Fig. 6: Applicare la configurazione dei moduli

- 1. Cliccare su *Edit Module Configuration* per ogni modulo AES.
- 2. Cliccare con il tasto destro del mouse su 0 Terminal.
- 3. Nel menu a discesa selezionare *Compare and Merge with Actual Module Configuration* e confermare con *confirm*.
- 4. Creare una connessione al PLC (andare online).

Modificare i metodi di invio dei moduli

Di default è impostata l'opzione "Do not send".



Fig. 7: Impostazione dei metodi di invio

- 1. Cliccare su *Edit Module Configuration* per ogni modulo AES.
- 2. Nella riga Module config send method (1) selezionare Send.
- 3. Creare una connessione al PLC (andare *online*).
- 4. Inviare la configurazione al PLC.

5 Impostare i parametri

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x00000001
PDO Communications Cycle	PDO Communications Cycle 1 (
Node Address	5
Enable/Disable Settings	Enabled 🔻
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Setting (1) Edit Setting Parameters
Backup Parameter Settings	
Module Configuration	Setting Edit Module Configuration

Edit Setting Parameters	
Item name	Value
0x8000:7C Valve_Para/SubIndex 124	0
0x8000:7D Valve_Para/SubIndex 125	0
0x8000:7E Valve_Para/SubIndex 126	0
0x8010:01 Module_1_Para/SubIndex	0
0x8010:02 Module_1_Para/SubIndex	0
0x8010:03 Module_1_Para/SubIndex	0
0x8010:04 Module_1_Para/SubIndex	0
0x8010:05 Module_1_Para/SubIndex	0
0x8010:06 Module_1_Para/SubIndex	0
0x8010:07 Module_1_Para/SubIndex	0
0x8010:08 Module_1_Para/SubIndex	0
0x8010:09 Module_1_Para/SubIndex	0
0x8010:0A Module_1_Para/SubIndex	0
0x8010:0B Module_1_Para/SubIndex	0
0x8010:0C Module_1_Para/SubIndex	0
0x8010:0D Module_1_Para/SubInde	0
0x8010:0E Module_1_Para/SubIndex	0
0x8010:0F Module_1_Para/SubIndex	0
0x8010:10 Module_1_Para/SubIndex	0
0x8020:01 Module_2_Para/SubIndex	0
0x8020:02 Module_2_Para/SubIndex	0
0x8020:03 Module_2_Para/SubIndex	0
	Return to Default
┌ Help ────	
Data type : USINT	
Valid range : 0 - 255	
Comment :	
Sunshrapize on the Teelbar to treesfor	as a part of EtherCAT setting. Select
Synchronize on the Toolbar to transfer.	
	OK Cancel Apply

- 1. Concludere il collegamento al PLC (andare *offline*).
- 2. Per modificare i parametri standard, cliccare su *Edit Setting Parameters* (1) per ogni modulo AES.

Viene visualizzato il numero massimo di parametri. Parametri valvola da 126 byte e parametri dei moduli IO 10x16.

INFO: Vengono trasmessi solo i parametri utilizzati dai moduli AES.

3. Creare una connessione al PLC (andare online).

Acerca de esta documentación 1

1.1 Validez de la documentación

Esta documentación es válida para los acopladores de bus de la serie AES para EtherCAT, que se conectan a PLC de OMRON. Esta documentación va dirigida a planificadores de instalaciones eléctricas.

1.2 Documentación necesaria y complementaria

Documentación	Tipo de documento/N.º de material	Comentario
Descripción de sistema del acoplador de bus AES para EtherCAT	Descripción del sistema/ R412018142	Archivo PDF en CD Online en Emerson Store

2 Configurar la red

- 1. Configure el módulo de bus AES EtherCAT, que se conecta al PLC de OMRON.
- 2. Elimine los siguientes archivos de documentación del directorio "..\OM-RON\Sysmac Studio\IODeviceProfiles\EsiFiles\UserEsiFiles" en caso de que existan:

"AES_EcatKoppler.xml" y "AES_Slot.xml",

"AES2_EcatKoppler.xml" y "AES2_Slot.xml". Guarde los siguientes archivos de configuración en el directorio e inicialice 3.

Sysmac Studio: "AES EcatKoppler om.xml" "AES2_EcatKoppler_om.xml" "AES_Slot_om.xml" "AES2_Slot_om.xml"

2.1 Comparar las configuraciones de redes y combinarlas



2. Cree una conexión a PLC (vaya a Online).



3. Haga clic con el botón derecho en Ethercat_Master (2) y, en el menú de opciones, haga clic en Compare and Merge with Actual Network Configuration.

Modificar la dirección de nodo

Compare and Merge with Actual Network Configuration
Failed to get the production information. Reason : The actual network configuration has a slave whose node address is outside the range. Correct the node address by writing a valid node address to the slave.
Schließen

Fig. 1: Error en la dirección de nodo

Si aparece el mensaje de error Failed to get Production information, la dirección de nodo del aparato vinculado debe modificarse en el rango autorizado (1 ... 192).

Asignar dirección de EtherCAT

A ATENCIÓN

Peligro de lesiones por modificación de los ajustes durante el funcionamiento

Los actuadores pueden moverse de forma descontrolada.

Los ajustes nunca se deben modificar durante el funcionamiento en curso.

En la red EtherCAT, el acoplador de bus necesita una dirección única para poder ser reconocido por el control.





Fig. 2: Conmutadores de dirección S1 y S2 del acoplador de bus

Tab. 1: Ejemplos de asignación de dirección

Posición del conmutador S1	Posición del conmutador S2	Dirección de estación
Nibble High	Nibble Low	
(rotulación hexadecimal)	(rotulación hexadecimal)	
0	1	1

Posición del conmutador S1	Posición del conmutador S2	Dirección de estación
Nibble High	Nibble Low	
(rotulación hexadecimal)	(rotulación hexadecimal)	
0	2	2
0	F	15
1	0	16
1	1	17
9	F	159
A	0	160
С	0	192

3 Aceptar configuración de red actual

k configuration of	on Sysmac Studio	Node address	Actual network cont	figuration	Net
Maste Mast	r er		Mas	ter	Ma
	001 AFS-D-BC-FCAT Rev	5		AES-D-BC-ECAT Rev:0x0	5:.
	E002	16	- 1	AES-D-BC-ECAT Rev:0x0	16
	ALS-D-DC-LCAT NEW				
/1)		<			
(1)	Apply actual net	work configurati	on		

1. Haga clic en Apply actual network configuration (1).

2. Haga clic en *Apply* y, a continuación, en *confirm*.

			1	ltem name
				- • ×
	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
Rev:0x0	5 : A	Matched	5 : A	Acquisition failed
Rev:0x0	16 :	Matched	16	A Acquisition failed

Fig. 3: Configuración de red

3. Compruebe si la denominación *Matched* aparece tanto en la columna *Comparison result* (2) como en la columna *Lower configuration* (3).

Ha fallado la configuración de red actual

- Si se muestra el error Aquisition failed:
- 1. Elimine el aparato de Sysmac Studio.
- 2. Haga clic en Apply actual network configuration (1).

Se ha adaptado la configuración de red actual

				- • •
	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
v:0x0	5 : A	Matched	5 : A	Matched
v:0x0	16 :	Matched	16 :	Matched

Fig. 4: Se ha adaptado la configuración

Se ha aceptado la red de forma correcta si en ambas columnas aparece la descripción "Matched".

Enviar configuración a PLC.

4 Configurar módulos

Las válvulas deben añadirse a la configuración de forma manual antes de inicializar el escaneo. El resto de la configuración puede reconocerse ahora de forma automática.

	4	
		-
1		
	Item name	Value
	Device name	E001
	Model name	AES-D-BC-ECAT
	Product name	AES Fieldbus Coupler
	Revision	0x00000001
	PDO Communications Cycle	PDO Communications Cy
	Node Address	5
	Enable/Disable Settings	Enabled
	Serial Number	0x0000000
	PDO Map Settings	Edit PDO Map Settings
	Enable Distributed Clock	
	Shift Time Setting	
	Reference Clock	Not exist
	Setting Parameters	Setting Edit Setting Parameters
	Backup Parameter Settings	
	Module Configuration (1)	Setting Edit Module Configuration

Fig. 5: Editar configuración de módulo

Ether	CAT -		D-BC-ECAT (- Node16	: AES-D-BC-ECAT	×				
IPosit	I Slot	1	Module	1				1		
Node	16 : AES-D-BC	-ECAT (E00	2)							
0	Terminals								Item nan	ne
1	##Terminals								Model	
2	Terminals								Product name	
3	I erminals								Connected positio	'n
4	I erminals									
2	Terminals								PDO Map Settings	
7	Terminals									
,	Terminals									
0	Terminals									
10	Terminals									
		Comp	are and Merge wi onfiguration <u>on S</u>	th Actual Mod ysmac Studio	ule Configuration	Actual m	odule config <u>urati</u>	on	_	
		Posit	l Slot	l	Module	IPosi	tl Slot		Module	
		Node	16 : AES-D-BC-EC	AT (E002)		Node	16 : AES-D-BC-E	CAT (E002)		
		0	Terminals	📲 4 Byte Vah	/e Unit (0x1D)	0	##Terminals	📲 4 Byte	Valve Unit (0x1D)	
		1	#Terminals	📲 8DO8M8 (0x01)		#Terminals	📲 8DO8N	48 (0x01)	
		2	#Terminals			2	##Terminals			
		3	Terminals			3	#Terminals			
		4	Terminals			4	Terminals			
		5	Terminals			5	#Terminals			
		6	Terminals			6	##Terminals			
			I erminals			/	I erminals			
		8	I erminals			8	I erminals			
		9	I erminals			9	I erminals			
Build		10	I erminais			10	I erminais			
🔀 O Em	ors 1 0 V									
	De									
	_	<			— >	<				
Gii Outp	ut 🔨 Build				Apply Actual Modu	le Config	uration			
					rippi) rictual mout	ne comig				

Fig. 6: Aceptar configuración del módulo

- 1. Haga clic en Edit Module Configuration para cada módulo AES.
- 2. Haga clic con el botón derecho en 0 Terminal.
- 3. En el menú de opciones, seleccione *Compare and Merge with Actual Module Configuration* y confirme la selección haciendo clic en *confirm*.
- 4. Cree una conexión a PLC (vaya a Online).

Cambiar los métodos de envío del módulo

"Do not send" está ajustado por defecto.



Fig. 7: Ajuste del método de envío

- 1. Haga clic en *Edit Module Configuration* para cada módulo AES.
- 2. En la fila Module config send method (1), seleccione Send.
- 3. Cree una conexión a PLC (vaya a Online).
- 4. Enviar configuración a PLC.

5 Establecer parámetros

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	PDO Communications Cycle 1 (
Node Address	5
Enable/Disable Settings	Enabled 🔹
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Settin g (1) Edit Setting Parameters
Backup Parameter Settings	
Module Configuration	Setting Edit Module Configuration

Edit Setting Parameters	
Item name	Value
0x8000:7C Valve_Para/SubIndex 124	0
0x8000:7D Valve_Para/SubIndex 125	0
0x8000:7E Valve_Para/SubIndex 126	0
0x8010:01 Module_1_Para/SubIndex	0
0x8010:02 Module_1_Para/SubIndex	0
0x8010:03 Module_1_Para/SubIndex	0
0x8010:04 Module_1_Para/SubIndex	0
0x8010:05 Module_1_Para/SubIndex	0
0x8010:06 Module_1_Para/SubIndex	0
0x8010:07 Module_1_Para/SubIndex	0
0x8010:08 Module_1_Para/SubIndex	0
0x8010:09 Module_1_Para/SubIndex	0
0x8010:0A Module_1_Para/SubIndex	0
0x8010:0B Module_1_Para/SubIndex	0
0x8010:0C Module_1_Para/SubIndex	0
0x8010:0D Module_1_Para/SubInde	0
0x8010:0E Module_1_Para/SubIndex	0
0x8010:0F Module_1_Para/SubIndex	0
0x8010:10 Module_1_Para/SubIndex	0
0x8020:01 Module_2_Para/SubIndex	0
0x8020:02 Module_2_Para/SubIndex	0
0x8020:03 Module_2_Para/SubIndex	0
	Return to Default
Help	
Data type : USINT	
Valid range : 0 - 255	
Comment :	
This parameter is saved in the CPU Unit a	as a part of EtherCAT setting. Select
Synchronize on the Toolbar to transfer.	
	OK Cancel Apply

- 1. Finalizar la conexión al PLC (vaya a Offline).
- 2. Haga clic en *Edit Setting Parameters* (1) para cada módulo AES a fin de modificar los parámetros estándar.

Se muestra el número máximo de parámetros.

126 bytes para el parámetro de válvula y 10x16 para los parámetros de módulo IO.

INFO: Solo se transmiten los parámetros que son modificados desde los módulos AES.

3. Cree una conexión a PLC (vaya a Online).

Om denna dokumentation 1

1.1 Dokumentationens giltighet

Denna dokumentation avser fältbussnoderna i serie AES för EtherCAT, som ansluts till en OMRON-PLC. Denna dokumentation riktar sig till programmerare och elplanerare.

1.2 Nödvändig och kompletterande dokumentation

Dokumentation	Dokumenttyp/ materialnummer	Anmärkning
AES-fältbussnodens systembeskrivning för	Systembeskrivning/ R412018142	PDF-fil på CD Online i Emerson Store
EtherCAT		

2 Konfigurera nätverket

- 1. Konfigurera den AES-EtherCAT-bussmodul som är ansluten till OMRON-PLC.
- 2. Radera i förekommande fall följande konfigurationsfiler i mappen "... \OMRON\Sysmac Studio\IODeviceProfiles\EsiFiles\UserEsiFiles": "AES_EcatKoppler.xml" och "AES_Slot.xml", "AES2_EcatKoppler.xml" och "AES2_Slot.xml".
- 3. Spara och starta följande nya konfigurationsfiler i mappen och Sysmac Studio: "AES_EcatKoppler_om.xml"
- "AES2_EcatKoppler_om.xml" "AES Slot om.xml" "AES2_Slot_om.xml"

2.1 Jämför och sammanför nätverkskonfigurationerna



1. Dubbelklicka på EtherCAT (1).

2. Upprätta anslutning till PLC (gå online).



3. Högerklicka på Ethercat_Master (2) och välj i urvalsmenyn Compare and Merge with Actual Network Configuration.

Ändra nodadress

Compare and Merge with Actual Network Configuration	3
Failed to get the production information. Reason : The actual network configuration has a slave whose node address is outside the range. Correct the node address by writing a valid node address to the slave.	
Schließen	

Bild 1: Fel på nodadressen

Om felmeddelandet Failed to get Production information visas, måste de anslutna apparaternas nodadress ändras till det tillåtna området (1 ... 192).

EtherCAT-adressen tilldelad



Risk för skador på grund av inställningsändringar under drift Okontrollerade rörelser kan uppstå!

Ändra aldrig inställningarna under pågående drift.

Fältbussnoden behöver en unik adress i EtherCAT-nätverket för att styrsystemet ska kunna identifiera den.





Bild 2: Adressomkopplare S1 och S2 på fältbussnoden

Tab. 1: Adresseringsexempel

Omkopplarläge S1	Omkopplarläge S2	Stationsadress
High-nibble	Low-nibble	
(hexadecimal märkning)	(hexadecimal märkning)	
0	1	1
0	2	2

Omkopplarläge S1	Omkopplarläge S2	Stationsadress
High-nibble	Low-nibble	
(hexadecimal märkning)	(hexadecimal märkning)	
0	F	15
1	0	16
1	1	17
9	F	159
A	0	160
С	0	192

3 Godkänn aktuell nätverkskonfiguration

k configuratio	n on Sysmac Studio	Node address Act	ual network confi	iguration	Net
Ma Ma	ster aster	-	Mast	er	Ma
	E001 AES-D-BC-ECAT Rev:	5	一間	AES-D-BC-ECAT Rev:0x0	5:
	E002 AES-D-BC-ECAT Rev:	16	- 1	AES-D-BC-ECAT Rev:0x0	16
(1					

- 1. Klicka på Apply actual network configuration (1).
- 2. Klicka på *Apply* och sedan på *confirm*.

]	ítem name
				- • ×
	Netw	Comparison result	(3) Actua	Lower Configuration
	Mast	Matched	Mast	
Rev:0x0	5 : A	Matched	5 : A	Acquisition failed
Rev:0x0	16 :	Matched	16 :	A Acquisition failed

Bild 3: Nätverkskonfiguration

3. Kontrollera om beteckningen *Matched* visas i de båda kolumnerna *Comparison result* (2) och *Lower configuration* (3).

Godkännande av aktuellt nätverk misslyckades

- Felet Aquisition failed visas:
- 1. Radera apparaterna i Sysmac Studio.
- 2. Klicka på Apply actual network configuration (1).

Godkännande av aktuellt nätverk anpassat

	Netw	Comparison result	Actua	Lower Configuration
	Mast	Matched	Mast	
v:0x0	5 : A	Matched	5 : A	Matched
v:0x0	16 :	Matched	16 :	Matched

Bild 4: Konfiguration anpassad

Godkännandet av nätverket har lyckats om beteckningen "Matched" visas i båda kolumnerna.

Skicka konfigurationen till PLC.

4 Konfigurera moduler

Ventilerna måste manuellt läggas till i konfigurationen innan skanningen startas. Den resterande konfigurationen kan identifieras automatiskt.

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	 PDO Communications Cy.
Node Address	5
Enable/Disable Settings	Enabled
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Setting
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Setting Edit Setting Parameter
Backup Parameter Settings	
Module Configuration	Setting (1) Edit Module Configuration

Bild 5: Redigera modulkonfigurationen

IPositi Stot I Module I NodeL6: Stot I Module Image: Stote St									
Node16: ASS-D-BC-CCAT (E002) 0 Item name 1 Item name 2 Item name 3 Item name 4 Item name 5 Item name 6 Item name 7 Item name 8 Item name 9 Item name 10 Item name 8 Item name 9 Item name 10 Item name Solution Poolution Module Position 9 Item name 10 Item name 8 Item name 9 Item name 9 Item name 10 Item name 9 Item name 9 Item name 9 Item name 10 Item name	Posit S	Slot I	Module				I		
0 Ifferminals Device name 1 Ifferminals Device name 2 Ifferminals Model 3 Ifferminals Product name 4 Ifferminals Product name 5 Ifferminals Product name 6 Ifferminals PDO Map Settings 7 Ifferminals PDO Map Settings 9 Ifferminals Ifferminals 10 Ifferminals Ifferminals	Node16 : AES	-D-BC-ECAT (E002)							
1 Ifferminals Use and a method of the second of the secon	0 III Ten	minals						Item nam	e
2 III terminals module 3 III terminals Product name 4 III terminals Connected position 5 III terminals PDO Map Settings 6 III terminals PDO Map Settings 7 III terminals PDO Map Settings 8 III terminals III terminals 9 III terminals III terminals 10 III terminals III terminals III terminals III terminals III terminals	1 III Ten	minals						Device name Model	
3 Interminals Connected position 4 Interminals Connected position 5 Interminals PDO Map Settings 7 Interminals PDO Map Settings 8 Interminals Interminals 9 Interminals Interminals 10 Interminals Interminals Interminals Interminals Interminals 10 Interminals Interminals Interminals Interminals Interminals 10 Interminals Interminals Interminals Interminals Interminals 10 Interminals <td< td=""><td>2 III Ten</td><td>minals</td><td></td><td></td><td></td><td></td><td></td><td>Product name</td><td></td></td<>	2 III Ten	minals						Product name	
A III terminals DO Map Settings B III terminals DO Map Settings DO Map Settings DO Map Settings III terminals III IIII terminals IIII Terminals IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	3 III Ten	minals						Connected position	
S Important Configuration PDO Map Settings 7 Important Configuration Important Configuration 8 Important Configuration Important Configuration 9 Important Configuration on Sysmac Studio Actual module configuration 10 Important Configuration on Sysmac Studio Actual module configuration Module configuration on Sysmac Studio Actual module configuration Important Stot Important Stot Important Stot Nodel6: Actor Stor Discort (BOOZ) Nodel6: Stor Discort Control Discort	4 🗰 len	minals							
0 Impleminals 7 Impleminals 9 Impleminals 10 Impleminals Impleminals Impleminals 10 Impleminals Impleminals Impleminals <	5 III I I I	minals						PDO Map Settings	
Implementation Implemen	o inten	minais 							
O mit terminals O model O	7 Hiten	minais							
The terminals To the terminals Solution of terminals	0 III Ton	minals							
Compare and Merge with Actual Module Configuration Module configuration on Syrmac Studio Actual module configuration IPositI Stot I Module Nodels AsS-DB-CECOTT (B002) Nodels AsS-DB-CECOTT (B002)	10 III Ten	minals							
Compare and Merge with Actual Module Configuration Module configuration on Sysmac Studio Positi Stot i Module Nodelis AsS-0-62-CEAT (E002) Nodelis ASS-0-62-CEAT (E002)			_		_	_			
Module configuration Actual module configuration IPositI Stot I Module IPositI Stot I Module Nodel6: Actor Stot I Module Node/Stot Node/S		S Compare	e and Merge with	Actual Module Configu	ration				
Positi Slot I Module IPositi Slot I Module Nodel5 : AES-D-BC-ECAT (E002) Nodel5 : AES-D-BC-ECAT (E002)		Module con	figuration on Sur	mac Studio	Actual	module configurativ			1
Node16 : AES-D-BC-ECAT (E002) Node16 : AES-D-BC-ECAT (E002)		Posit	Slot	Module	IPo	sitl Slot	1	Module	N
		Node16	: AES-D-BC-ECA	T (E002)	No	de16 : AES-D-BC-EC	CAT (E002)	module	4
0 III Terminals 4 Byte Valve Unit (0x1D) 0 III Terminals 4 Byte Valve Unit (0x1D)		0	Terminals	4 Byte Valve Unit (0x1))) () # Terminals	4 Byte	/alve Unit (0x1D)	81
1 #Terminals # 8DO8M8 (0x01) 1 #Terminals # 8DO8M8 (0x01)		1	Terminals	8DO8M8 (0x01)			8D08M	8 (0x01)	
2 Terminals 2 Terminals		2	Terminals			? Terminals			
3 III Terminals 3 III Terminals		3	Terminals			E Terminals			
4 III Terminals 4 III Terminals		4	Terminals		4	Terminals			
5 III Terminals 5 III Terminals		5	Terminals			5 🏭 Terminals			
6 #Terminals 6 #Terminals		6	Terminals			5 III Terminals			
7 III Terminals 7 III Terminals		7	Terminals			7 III Terminals			
8 #Terminals 8 #Terminals		8	Terminals		8	B Terminals			
9 Terminals 9 Terminals		9	Terminals		9	Terminals			
Build 10 Terminals 10 Terminals	Build	10	Terminals		1	0 III Terminals			
	🔀 0 Errors 👔	0 V							
	1 1	De							
									-
Fi Outout A Build	드립 Output	Build					_		
Apply Actual Module Configuration				Apply Actu	al Module Confi	guration			

Bild 6: Godkänn modulkonfigurationen

- 1. Klicka på *Edit Module Configuration* för varje AES-modul.
- 2. Högerklicka på 0 Terminal.
- 3. Välj i urvalsmenyn *Compare and Merge with Actual Module Configuration* och bekräfta med *confirm*.
- 4. Upprätta anslutning till PLC (gå online).

Ändra modulsändningsmetod

Som standard är "Do not send" inställd.



Bild 7: Inställning av sändningsmetoden

- 1. Klicka på *Edit Module Configuration* för varje AES-modul.
- 2. Välj i raden *Module config send method* (1) *Send*.
- 3. Upprätta anslutning till PLC (gå online).
- 4. Skicka konfigurationen till PLC.

5 Inställning av parametrar

Item name	Value
Device name	E001
Model name	AES-D-BC-ECAT
Product name	AES Fieldbus Coupler
Revision	0x0000001
PDO Communications Cycle	PDO Communications Cycle 1 (
Node Address	5
Enable/Disable Settings	Enabled 🔻
Serial Number	0x0000000
PDO Map Settings	Edit PDO Map Settings
Enable Distributed Clock	
Shift Time Setting	
Reference Clock	Not exist
Setting Parameters	Settin g (1) Edit Setting Parameters
Backup Parameter Settings	
Module Configuration	Setting Edit Module Configuration

Edit Setting Parameters	
Item name	Value
0x8000:7C Valve_Para/SubIndex 124	0
0x8000:7D Valve_Para/SubIndex 125	0
0x8000:7E Valve_Para/SubIndex 126	0
0x8010:01 Module_1_Para/SubIndex	0
0x8010:02 Module_1_Para/SubIndex	0
0x8010:03 Module_1_Para/SubIndex	0
0x8010:04 Module_1_Para/SubIndex	0
0x8010:05 Module_1_Para/SubIndex	0
0x8010:06 Module_1_Para/SubIndex	0
0x8010:07 Module_1_Para/SubIndex	0
0x8010:08 Module_1_Para/SubIndex	0
0x8010:09 Module_1_Para/SubIndex	0
0x8010:0A Module_1_Para/SubIndex	0
0x8010:0B Module_1_Para/SubIndex	0
0x8010:0C Module_1_Para/SubIndex	0
0x8010:0D Module_1_Para/SubInde	0
0x8010:0E Module_1_Para/SubIndex	0
0x8010:0F Module_1_Para/SubIndex	0
0x8010:10 Module_1_Para/SubIndex	0
0x8020:01 Module_2_Para/SubIndex	0
0x8020:02 Module_2_Para/SubIndex	0
0x8020:03 Module_2_Para/SubIndex	0
	Return to Default
_ Help	
Data type : USINT	
Valid range : 0 - 255	
Comment :	
Sunchronize on the Teelbar to transfer	
OK Cancel Apply	

- 1. Avsluta anslutningen till PLC (gå offline).
- 2. Klicka på *Edit Setting Parameters* (1) för varje AES-modul för att ändra standardparametrarna.

Det maximala antalet parametrar visas.

126 bytes ventilparametrar och 10x16 IO-modulparametrar.

- INFO: Endast de parametrar som används av AES-modulerna överförs.
- 3. Upprätta anslutning till PLC (gå online).

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The given information does not release the user from the obligation of own judgement and verification. It must be remembered that our products are subject to a natural process of wear and aging.

An example configuration is depicted on the title page. The delivered product may thus vary from that in the illustration.

Translation of the original operating instructions. The original operating instructions were created in the German language.

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