Motors

Automation

Energy Transmission and Distribution

Coatings

CFW320 - AOI

Configuration



Driving efficiency and sustainability





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SUMMARY OF REVISIONS

The information below describes the revisions made to this manual.

Version	Description
1.0	Initial release of the document.
2.0	Updated to include additional information for setup and troubleshooting.
-	-
-	-

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Safety & Legal

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Safety information

Only use Add On Instructions (AOI's) from WEG Electric Corp. for their intended purpose. To ensure safe operation, observe all instructions in this manual, and the warning information in the other applicable documents for the variable frequency drive technology that is used. Work on and with variable frequency drives, must only be carried out by qualified personnel.

Limitation of liability

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About This Manual

This manual supplies the necessary information to operate the CFW320 drive using the Ethernet IP interface to communicate with a Rockwell PLC with an AOI. It must be used together with the CFW320 user's manual and programming manual.

This document is intended for qualified personnel experienced in the operation of the specified equipment and the installation of EtherNet IP networks. Proficiency in automation and programmable logic controllers, particularly with Rockwell Automation software, is required.

REFERENCED DOCUMENTS

This manual was developed based on the following documents and tools:

Document/Tool	Version	Source
CFW320 User's Manual	10008951923 /00	WEG
CFW320 Programming Manual	10004274148 / 02	WEG
Studio 5000 PLC programming software	37	Rockwell Automation

These documents and tools can be referred to for additional information.

Terms and Definitions

AOI: Add On Instruction. Add On Instructions are used to encapsulate and reuse logic in Rockwell PLCs.

BOOI: Boolean is a data type that has one of two possible values, which is intended to represent the two truth values of logic and Boolean algebra.

CFG: Configuration

CIP: Common Industrial Protocol. CIP connections are automatically established over a TCP connection and transfer data from one device on the EtherNet/IP network to another.

DINT: Double integer equates to 32 bits of data. Creating a DINT structure on the PLC will result in a structure that will have 32 BOOLs.

EDS: Electronic Data Sheets. EDS files are simple text files used by software to help you identify products and quickly commission them on a network.

INT: Integer. The structure within the PLC can be broken down into 16 distinct booleans, which correlates to the fact that an integer is 16 bits.

IP: Internet Protocol. A set of rules governing the format of data sent over the internet or other networks.

PLC: Programmable Logic Controller

RPI: Requested Packet Interval, generally expressed in milliseconds, is the interval of periodic data exchange between the scanner and the adapter. A connection request from the scanner establishes the repetition interval, or RPI, in both directions.

VFD: Variable Frequency Drive



WEG CFW320 AOI Configuration

Prerequisites

Exclusions

This document does not go into detail of setting up a controller in RSLOGIX/STUDIO 5000.

The connection and configuration of the IP network is beyond the scope of this document.

All non-communication specific parameters on the CFW320 are excluded from the configuration requirements of this document.

System Components

This document assumes that the following components are available and configured:

- A CFW320 running version 1.10 (or higher) firmware with an EtherNet/IP card installed (CFW320-CETH).
- A 10/100 or Faster Ethernet network with IP connectivity and IP addresses for both the PLC and VFW. The Fast Ethernet 100BASE-TX standard is recommended.
- Programming tools for the PLC (RS Logix or Studio 5000 Logix Designer).
- We recommend using certified components for all passive network components (cables and Ethernet switches) in industrial applications. Please refer to the CFW320 Ethernet card documentation for information about the proper network installation.



WEG CFW320 AOI Configuration

IP Address and Network Configuration

To allow communication among the devices, they need to have an compatible IP address configuration. It means the IP address must be at the same range, according to network mask. For this example, we will use the following IP addresses in this document:

- Subnet mask: 255.255.255.0
- IP addresses: each device must have a different IP address.

PC: 192.168.0.20 ControlLogix: 192.168.0.71 CFW320: 192.168.0.126

PC IP Address Configuration

To configure these options at Windows platform, go to "Network Connections" and open "Properties" of the desired

Ethernet Properties	×	Internet Protocol Version 4 (TCP/IPv4) Properties X
Networking Sharing		General
Connect using:		You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Configure This connection uses the following items: Client for Microsoft Networks Client for Microsoft Networks Configure Client for Microsoft Networks Client for Microsoft Networks Client for Microsoft Networks Client for Microsoft Networks Microsoft Network Adapter Multiplexor Protocol		O Detain an IP address automatically O Use the following IP address: IP address: 192.168.0.20 Subnet mask: 255.255.255.0 Default gateway: . Obtain DNS server address automatically
Microsoft LLDP Protocol Driver Internet Protocol Version 6 (TCP/IPv6) Install Properties		O Use the following DNS server addresses: Preferred DNS server: Alternate DNS server:
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.		Validate settings upon exit Advanced
OK Cance	4	OK Cancel

WEG CFW320 AOI Configuration

PLC IP Address Configuration

User can set IP Address for the Rockwell PLC using Rockwell configuration tools. Check PLC documentation to obtain information about how to perform this configuration.



CFW320 Ethernet Interface

For this application, the following configurations have been done via keypad to allow Ethernet communication to PLC:

- P0850 IP Address Config: 0 (Parameters).
- P0851 IP Address 1: 192
- P0852 IP Address 2: 168
- P0853 IP Address 3: 0
- P0854 IP Address 4: 126
- P0855 CIDR: 24
- P0856 Gateway 1: 0
- P0857 Gateway 2: 0
- P0858 Gateway 3: 0
- P0859 Gateway 4: 0

✓ NOTE!

After changing these configurations, for the modification to be effective, the equipment must be turned off and then turned on again.

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EDS Installation

Begin by adding the EDS file for the CFW320 if it is not already in the project.



From inside Logix Designer, go to Tools -> Device Description Installation Tool



Click Next >





Click Next >





Device Description File Installation Tool	×
Registration Device description file(s) will be added to your system for use in Rockwell Automation applications.	
Register a single device description file Register a directory of device description filesoook in subfolders Named: Prowse Prowse If there is an icon file (ico) with the same name as the file(s) you are registering then this image will be associated with the device. To perform an installation test on the file(s), click Next	
< <u>B</u> ack <u>N</u> ext >	Cancel

Click Browse ...

Select a device d	lescription file					×
$\leftrightarrow \rightarrow \sim 1$	> Downloads > CFW320_AOI > CFW	320_AOI > EDS		~ C	Search EDS	Ą
Organize 🔻 🛛 N	lew folder				≣	• 🛯 🕐
🙆 Recy 🖈	Name	Date modified	Туре	Size		
늘 CFW500	\sim Today					
ToEnter	eip_cfw320_v10x.eds	5/14/2025 3:58 PM	EDS File	24 1	KB	
🚞 New fol						
CFW320						
🛩 📘 WEG EQ						
> 🚞 WEC L						
> 🚞 WEG L						
🗸 💻 This PC						
> 📑 weg.ac						
> 느 Windo						
	File name: eip_cfw320_v10x.eds			~	Device Description	Files (*.eds, 👾
					<u>O</u> pen	Cancel

Browse to where the downloaded eds file is located and click Open

CFW320 AOI Configuration



Device Description File Installation Tool	×
Registration Device description file(s) will be added to your system for use in Rockwell Automation applications.	
 Register a single device description file 	
C Register a directory of device description files 🛛 🗌 Look in subfolders	
Named: C:\Users\bteac\Downloads\CFW320_AOI\CFW320_AOI\EDS\eip_cfw: Browse * If there is an icon file (ico) with the same name as the file(s) you are registering then this image will be associated with the device.	
To perform an installation test on the file(s), click Next	
< <u>B</u> ack <u>N</u> ext > 0	Cancel

Click Next >





Device Description File Installation Tool	×
Device Description File Installation Test Results This test evaluates each Device Description File for errors in the device description file. This test does not guarantee Device Description File validity.	
C:\Users\bteac\Downloads\CFW320_AOI\CFW320_AOI\EDS\eip_cfw320_v10x.eds	
<u>Vi</u> ew file < <u>B</u> ack <u>Next ></u>	Cancel

There should be a green checkmark. Click Next >



Device Description File Installation Tool	×
Change Graphic Image You can change the graphic image that is associated with a device.	
Product Types	
Change icon Vendor Specific Type	
< <u>B</u> ack	Cancel

Click Next >





Device Description File Installation Tool		×
Final Task Summary This is a review of the task you want to complete.		
You would like to register the following device. CFW320		
	< <u>B</u> ack <u>N</u> ext >	Cancel

Click Next >



Device Description File Installation Tool	×
You have successfully completed the action.	
Finish]

Click Finish

The EDS file is now installed and the CFW320 can be added as an Ethernet/IP device in the device tree.





AOI

CFW320

This AOI controls the CFW320 and handles the following additional parameters:

Outputs

- Output Current
- Output Torque
- Output Voltage
- Output Frequency
- Last Fault Code

Inputs

- Acceleration Ramp 1
- Deceleration Ramp 1

Create the EtherNet/IP Device



In the device tree, right click on the Ethernet bus that will contain the CFW320 and click New Module...



Enter	r Search Text for Modu	le Type	<u>C</u> lear Filte	rs		H <u>i</u> de Filters	*
	Module Type Categor	ry Filters	. 🖸	Module Type	/endor Filters		
	20 - Comm-ER			Advanced Energy Industries, Inc.			
\sim	Analog			Advanced Micr	ro Controls Inc. (AMCI)		
\sim	CIP Motion Safety Tra	ck Section		Aparian Inc.			
	Communication			Bray Internation	nal, Inc		
_							
Cata	alog Number	Description	Ve	ndor	Category		
	1420-V1P-ENT	Powermonitor 500	Ro	ckwell Autom	PowerMonitor 5000		
(0001_0073_010D	48MS-SN1PF1-M2	Ro	ckwell Autom	Rockwell Automation Mise	cellaneous	
(0001_0073_010E	48MS-SN1PF2-M2	Ro	ckwell Autom	Rockwell Automation Mise	cellaneous	
(0005_007B_0030	SP600	Ro	ckwell Autom	DPI to EtherNet/IP		
	0005_007B_0038	SP600 ER 400V	Ro	ckwell Autom	DPI to EtherNet/IP		
-							
773 o	f 773 Module Types Fo	ound				Add to Favor	rites

In the Select Module Type dialog box, enter in "CFW320" in the search field

cfw:	320		<u>C</u> lear Fi	ilters		Hide Filters	*
	Module Type Categ 20 - Comm-ER Analog CIP Motion Safety T Communication	jory Filters Track Section	1	 Module Tyy Advanced I Advanced I Advanced I Aparian Inc Bray Internation 	pe Vendor Filters Energy Industries, Inc. Micro Controls Inc. (AMCI) titonal, Inc		I
Cat	alog Number	Description		Vendor	Category		
		CI WOLD				07	
						(

There should be an entry matching the above screenshot.

Highlight the CFW320-CETH and click Create

×



General Connection Module Info Internet Protocol Port Configuration	Type: Vendor: Parent: Na <u>m</u> e: Description:	CFW320-CETI WEG Local VFD1	H CFW320		Ethernet Address Prjivate Network: IP Address: Host Name:	192.168.1. 192 . 168 . 0
	Module Defin Revision: Electronic Ke Connections	ition eying: ::	1.001 Compatible Module 100/150 Manufactur	▼		

Status: Creating

Give the CFW320 a name and enter the IP address of the drive.

Before clicking on OK, click on the Change ... button in the module definition.

Module Definition	X Module Definition*		×			
Revision: 1 v 001 🜩	Revision: 1	<u>R</u> evision: 1 <u>001</u>				
Electronic Keying: Compatible Module	Electronic Keying: Comp	Electronic Keying: Compatible Module ~				
Connections:	<u>C</u> onnections:					
Name Size Tag Suffix	Name	Size	Tag Suffix			
100/150 Manufacturer Input: 4 SINT 1 VFD1:11 Parameters Output: 4 SINT 1 VFD1:01 Select a connection V SINT NT REAL VFD1:01 NT	100/150 Manufacturer Speed and Drive Parameters Select a connection	Input: 8 Output: 4⊕	VFD1:11 VFD1:01			
OK Cancel	Help	ОК	Cancel Help			

Change .

ОК

Cancel

Help

Change the type to INT

The Input and output size should be set to 8 and 6 respectively. Click OK



New Module							×
General*	General						_
General Connection" - Module Irfo" - Internet Protocol" - Port Configuration"	Ceneral Type: Vendor: Parent: Name: Desongton: Desongton: Revision:	CFW320-CE WEG Local VFD1	ETH CFW320	Ĵ	Ethemet Address Provate Network: P Address: Hort Neme:	192 168.1. 192 - 168 - 0	. 126
	Electronic K	eying: K	Compatible Modu 100/150 Manufa	e acturer Speed Change			
Status: Creating					ОК	Cancel	Help

Click Yes

At this point, no other changes are required. However, changing the RPI can be done if the need arises.

New Module											×
General*	General										
Conection" - Module Irfo" - Internet Protocol" - Port Configuration"	Type: Vendor: Parent: Name: Descrigion: Module Defin Revision: Electronic K Connection	CFW320-CE WEG Local VFD1	ETH CFW320 1.001 Compat 100/19	ble Module 10 Manufacturer S	Speed	Ethemet Address Private Networt IP Address: Host Name:	k:	192 168.1. 192 . 1/	<u></u> 58 . 0	. 126	
Status: Creating							ок	Cano	xel	Help	

See the Trouble Shooting section to learn more about changing the RPI.

Once satisfied with the settings, Click OK



There should now be an instance of the CFW320 in the device tree

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AOI Import

đ	💕 Logix Designer - CFW320 [5069-L306ER 37.11]*							
	<u>F</u> ile	<u>E</u> dit <u>V</u> iew	Search	<u>L</u> ogic	Com	nunications	Tools	Win
1	*b	<u>N</u> ew	Ctrl+N	19	0			
3	¢-	Open	Ctrl+O					
		<u>C</u> lose		Pa	th: <non< td=""><td>ie></td><td></td><td></td></non<>	ie>		
	•	<u>S</u> ave	Ctrl+S		1	No Forces		▶ _↓ No
c		Save <u>A</u> s				▼ ₽ ×		
		Ne <u>w</u> Compone	ent 🕨					
		Import Compo	nent 🕨		<u>A</u> dd-O	n Instruction		
		Compact		101 010	<u>D</u> ata Tj	/pe		
				4	Equipr	nent Phase		
		Page Set <u>u</u> p		5	<u>P</u> rogra	m		
		Generate Repo	ort	B	<u>R</u> outin	e		
		Print	,	101 010	<u>S</u> tring	Type		
		Print Op <u>t</u> ions.	•	\sim	Tre <u>n</u> d			
		R <u>e</u> cent Project	s 🕨	20				
		Exit		01				
		5069-L	.306ER CFW	320				

From the menu bar go to File, Import Component, Add-On Instruction...

谢 Import Add-	On Instruction				×
Look in:	CFW320_AOI	~	🥝 🤣 📂 🖽 -		
	Name Today (2)		Date modified	Туре	Size
Home	CFW320.L5X		5/14/2025 3:58 PM	Logix Designer X	
	EDS .		5/14/2025 3:58 PM	File folder	
Desktop					
Libraries This PC					
	File <u>n</u> ame:	CFW320		~ <u>O</u> p	en
	Files of type:	Logix Designer XML Files (*.L5X)		 ✓ Car 	icel
				He	lp

Select the appropriate add-on instruction (CFW320.L5X) and click Open



Import Configuration - CFW320.L5X					×
Find: Find: Find Within: Final Name	✓ A ^A A ^A	Eind/Replace			
Import Content:	Configure Add-On Import Name: Operation: Final Name: Description: Revision: Revision Note: Vendor:	P Instruction Properties CFW320 Create CFW320 WEG AOI CFW320 v1.0 Release	D Properties		
Ready			ОК	Cancel	Help

Review the proposed changes and click OK



There should now be this add-on instruction in the project.



AOI Usage

🗏 MainProg	gram - MainRoutine* - ×	•	Toolbox	→ # ×
0, 0,			Search	Q
			Common	
• 😣			H Rung	
			Branch	
(End)			Branch Level	
			⊿ Add-On	
			320 CFW320	

On an empty rung of ladder, add an instance of the newly imported add-on instruction by clicking on the Add-On bar and clicking the CFW320 symbol

A MainProg	gram - MainRoutine* 🗙			
€. €.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
0		CFW320 CFW320 ConnectionFaulted Inputs Outputs cmd_DriveEnable cmd_NetCtrl cfg_RampSelect cmd_Fault_Reset cmd_RunReverse cmd_JogForward cmd_JogReverse set_Speed_Reference cfg_FailToStartDelay cfg_FailToStartDelay cfg_FailToStopDelay val_RealSpeed val_FaultCode val_OutputCurrent val_OutputCurrent val_OutputFreq val_OutputFreq val_OutputTorque set_Accel cfg_AutoFaultResetNum	2 ? ?? ?? ?? ?? ?? ?? ?? ??	sts_Connection_Faulted)— sts_Faulted)— sts_Local)— sts_Connection_Ready)— sts_ConfigMode)— sts_Ready)— sts_Ramp2_Selected)— sts_RunningForward)— sts_RunningForward)— sts_RunningForward)— sts_JoggingForward)— sts_JoggingForward)— sts_JoggingReverse)— sts_FailedToStart)— sts_FailedToStart)— sts_FailedToStart)— sts_Alarm)— AutoFaultResetExceed)—
		Signat	ure ID: 98C2470	C

Your ladder logic should look like this after you add the add-on instruction

.



CFW320			
CFW320 ConnectionFa		New "Drive1"	Ctrl+W
Inputs Outputs cmd_DriveEn cmd_NetCtrl cfg_RampSe cmd_Fault_R cmd_RunFor	¥ Ĵ	Cut Instruction Copy Instruction Paste Delete Instruction Add Ladder Element	Ctrl+X Ctrl+C Ctrl+V Del Alt+Ins
cmd_JogForv cmd_JogRev set_Speed_R		Edit Main Operand Description	Ctrl+D
cfg_FailToSta cfg_FailToSta val_RealSpee		Clear Instruction Defaults Remove Force	
val_FautCod val_OutputCu		Go To	Ctrl+G
val_OutputFr val_OutputVo		Instruction Help	F1
val_OutputTo set_Accel		Remove Parameter Remove All Unknown Parameters	
set_Decel		Open Instruction Logic	
cfg_AutoFau		Open Instruction Definition	
		Properties	Alt+Enter

The Add-On requires a tag to be created. Create this tag by typing a name in the CFW320 field and right clicking and selecting New "Tag". The Add-On requires a tag to be created.

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New Paramet	er or Tag	×
<u>N</u> ame:	Drive1	Create 🛛 🔻
Description:	A	Cancel
	~	пер
<u>U</u> sage:	Local Tag 🗸 🗸]
Typ <u>e</u> :	Base ~ Connection	
Alias <u>F</u> or:	~	
Data <u>T</u> ype:	CFW320	
Para <u>m</u> eter Connection:	~	
Scope:	🔓 MainProgram 🗸 🗸]
E <u>x</u> temal Access:	Read/Write ~]
OPC UA Access:	None]
St <u>v</u> le:	~	
Constant		
Open Confi	guration	
Open <u>P</u> aran	neter Connections	

Give any appropriate description and scope (the tag can be either program or controller scoped and then click Create



The majority of your parameters for the add-on instruction should now show values



Next, the Connection Faulted, Inputs, Outputs, set_Speed_Reference, set_Accel, and set_Decel need to be populated as follows:

- ConnectionFaulted = VFD1:I.ConnectionFaulted
- Inputs = VFD1:I.Data
- Outputs = VFD1:O.Data
- set_Speed_Reference = SpeedRef
- set_Accel = Accel
- set_Decel = Decel

You will need to create the SpeedRef, Accel, and Decel tags with a data type of REAL.

	WEG AOI CFW320	
CFW320		
CFW320	Drive1	
ConnectionFaulted VFD1:	.ConnectionFaulted	-(sts_Connection_Faulted)-
	??	-(sts_Faulted)
Inputs	VFD1:I.Data	-(sts_Local)
Outputs	VFD1:0.Data	-(sts_Connection_Ready)
cmd_DriveEnable	0 💠	-(sts_ConfigMode)—
cmd_NetCtrl	1 🗭	-(sts_Ready)
cfg_RampSelect	0 💠	-(sts_Ctrl_from_net)
cmd_Fault_Reset	0 🖛	-(sts_Ramp2_Selected)
cmd_RunForward	0 🖛	-(sts_RunCommand)
cmd_RunReverse	0 🖛	-(sts_RunningForward)
cmd_JogForward	0 🕈	-(sts_RunningReverse)
cmd_JogReverse	0 🕈	-(sts_JoggingForward)
set_Speed_Reference	SpeedRef	-(sts_JoggingReverse)
	??	-(sts_FailedToStart)
cfg_FailToStartDelay	0 🕈	-(sts_FailedToStop)
cfg_FailToStopDelay	0 🕈	-(sts_Alarm)
val_RealSpeed	0.0	-{AutoFaultResetExceed}
val_FaultCode	0	
val_OutputCurrent	0.0	
val_OutputFreq	0.0	
val_OutputVoltage	0	
val_OutputTorque	0.0	
set_Accel	Accel	
act Decel	// Decol	
set_Decei	Decel	
cfa AutoFaultResetNum	сс 0 ф	
org_Autor auticesett/um	V-	

Signature ID: 98C247DC

AOI Parameter Descrpition

InOut Parameters

Parameter	Туре	Description
Inputs	INT [8]	Input Assembly from CFW320
Outputs	INT [4]	Output Assembly to CFW320

Input Parameters

Parameter	Туре	Description
Cfg_FailToStartDelay	DINT	Time in seconds before faulting
		on fail to start if VFD does not
		start when commanded
		Set to 0 to disable
Cfg_FailToStopDelay	DINT	Time in seconds before faulting
		on fail to stop if VFD does not
		stop when commanded
		Set to 0 to disable
ConnectionFaulted	BOOL	From CFW320 Ethernet Module.
		1 = Connection is faulted
		0 = Connection is OK
cfg_RampSelect	BOOL	1 = Ramp 2 (P0102/P0103)
		0 = Ramp 1 (P0100/P0101)
cmd_DriveEnable	BOOL	1 = Enable operation of VFD
		0 = Disable operation of VFD
cmd_Fault_Reset	BOOL	1 = Send Reset Fault Signal to VFD
		0 = No action
cmd_JogForward	BOOL	1 = Jog Forward
		0 = No Action / Stop
cmd_JogReverse	BOOL	1 = Jog Reverse
		0 = No Action / Stop
cmd_NetCtrl	BOOL	1 = Remote (Ethernet) control
		0 = Local (Other) control
cmd_RunForward	BOOL	1 = Run Forward
		0 = Stop
cmd_RunReverse	BOOL	1 = Run Reverse
		0 = Stop
set_Speed_Reference	REAL	Speed Setpoint (0-100%)
set_Accel	REAL	Acceleration Ramp 1 Setpoint
		(0.1-999.0) in Seconds
set_Decel	REAL	Deceleration Ramp 1 Setpoint
		(0.1-999.0) in Seconds
cfg_AutoFaultResetNum	DINT	Maximum number of tries that
		AOI will send fault reset
		command while being maintained



Output Parameters

Parameter	Туре	Description
sts_ConfigMode	BOOL	1 = VFD in Config Mode
		0 = VFD in Operation Mode
sts_Connection_Faulted	BOOL	Goes high when connections
		interrupted. If "Run" signal is set,
		it must be reset before this will clear
		1 = Connection has been faulted
		from VFD to PLC
		0 = Connection OK
sts_Connection_Ready	BOOL	1 = Connection from VFD to PLC
		is established
		0 = Connection not established
sts_Ctrl_from_net	BOOL	1 = VFD controlled remotely (PLC)
		0 = VFD controlled locally
sts_Faulted	BOOL	1 = VFD Fault, connection fault,
		or failedToStart/Stop Fault
		0 = No faults
sts_FailedToStart	BOOL	1 = VFD failed to start in time
		allotted
		0 = Normal
sts_FailedToStop	BOOL	1 = VFD failed to stop in time
		allotted
		0 = Normal
sts_Local	BOOL	1 = Local
		0 = Remote
sts_Ramp2_Selected	BOOL	1 = Ramp 2 rates selected
		0 = Ramp 1 rates selected
sts_Ready	BOOL	1 = VFD is ready to operate
		(states Ready, Enabled,
		or Stopping)
		0 = VFD is not ready to operate
sts_RunCommand	BOOL	1 = Commanded to run
		0 = Not commanded to run
sts_RunningForward	BOOL	1 = Running forward
		0 = Not running forward
sts_RunningReverse	BOOL	1 = Running reverse
		0 = Not running reverse





val_FaultCode	DINT	Fault code 1 from VFD
val_OutputCurrent	REAL	Output current in Amps from VFD
val_OutputFreq	REAL	Output frequency in Hertz
		from VFD
val_OutputVoltage	REAL	Output voltage in Volts from VFD
val_OutputTorque	REAL	Output Torque Applied to Motor
val_RealSpeed	REAL	Speed feedback in %
AutoFaultResetExceed	BOOL	Indicates when the maximum
		number of automatic fault clears
		has been exceeded.
		Set cmd_Fault_Reset to 0 to reset
		and allow fault clear to resume.
		1 = Max number of fault clears
		reached. Fault Reset Disabled
		0 = Under threshold for
		automatic fault clears.
		Fault Reset Allowed.



CFW320 Parameter Requirements

The following paramaters must be set in the CFW320:

Parameter	Setting
P105 1st / 2nd Ramp Selection	5= CO/DN/DP/ETH
P220 LOC/REM Selection Source	10=CO/DN/DP/ETH (REM)
P222 REM Reference Selection	11 = CO/DN/DP/ETH
P226 REM FWD/REV Selection	9 = CO/DN/DP/ETH (FWD)
P227 REM Run/Stop Selection	4 = CO/DN/DP/ETH
P228 REM JOG Selection	5 = CO/DN/DP/ETH
P872 Ethernet Read Word #3	9
P873 Ethernet Read Word #4	49
P874 Ethernet Read Word #5	3
P875 Ethernet Read Word #6	5
P876 Ethernet Read Word #7	7
P877 Ethernet Read Word #8	6
P880 Ethernet Read Word #3	100
P881 Ethernet Read Word #4	101

Trouble Shooting

This section is to help with any problems you may encounter.

1) No Communication

a. The Studio 5000 Error Codes or Module Fault # can be found under the I/O Configuraiton Tab within the Studio 5000 software. Right-click on the CFW320 module and select Properties.



b. Next select the 'Connection' section. Then within the 'Module Fault' section, you will find the Module Fault number. Each error code corresponds to a specific issue or condition.

Connection	Connection			
- Module Info - Internet Protocol - Port Configuration	Name	Requested Packet Interval (RPI) (ms)	Connection over EtherNet/IP	Input Trigger
	110/160 Manufacturer Parameters	20.0 🐥 1.0 - 3200.0	Unicast 🗸	Cyclic
	Thibit Module Major Fault On Controller If Connection Fo Module Fault (Code 16#0204) Connection Request Err	als While in Run Mode		



Error Code 16#0005 = Connection Request Error: Bad Class.

Reason: A discrepancy exists between PLC and the selected VFD module configuration.

What to check:

- Check the parameters in the VFD to insure they match what is listed in the "CFW320 Parameter Requirements" section of this document.
- Ensure that the programmed connection size in both the PLC and the VFD is consistent. For instance, if the VFD transmits 2 words, confirm that the PLC is configured to receive 2 words rather than 6.
- Ensure the comm format for the module is set to a data type of INT in the PLC. This can be found under the properties for the module.

Module Definition				×
Revision:	1	~	060 🌻]
Electronic Keying: Compatible Module ~				
Connections:				
Name			Size	
110/160 Manufact	urer	Input:	16	INT
Parameters		Output:	1	
ОК		Canc	el	Help

Error Code 16#012a = Connection Request Error: Invalid output application path.

Reason: There is a mismatch between the PLC and VFD in the selected module.

What to check:

- Check the Module Definition to insure it is set to an input of 16 and an output of 1.
- Check the parameters in the VFD to insure they match what is listed in the "CFW320 Parameter Requirements" section of this document.

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Error Code 16#0109 = Connection Request Error: Invalid connection size (Invalid Input size).

Reason: The input connection word size exceeds the capacity of the programmed word array in the PLC.

What to check:

- Check the programmed connection size in the PLC and the VFD (example the VFD is sending 2 words and the PLC is programmed to 4 words).
- Ensure the comm format for the module is set to a data type of INT in the PLC. This can be found under the properties for the module.

Error Code 16#0111 = Requested Packet Interval (RPI) out of range.

Reason: The configured RPI rate is below the allowed rate for the VFD.

What to check:

• Increase the RPI rate in Studio 5000. This can be found under the module's Connection tab. A lower number means it is communicating more often.

Module Properties: Local (SSW9	000-CETH-W 1.060) ×		
: General	Connection		
Connection			
─ Module Info ─ Internet Protocol ─ Port Configuration	Name	Requested Packet Interval (RPI) (ms)	Connection over EtherNet/IP Input Trigger
	110/160 Manufacturer Parameters	20.0 🔶 1.0 - 3200.0	Unicast V Cyclic V
	Inhibit Module Major Fault On Controller If Connection Fails While Module Fault	in Run Mode	
Status: Offline		ОК	Cancel Apply Help



Error Code 16#0127 = Connection Request Error: Invalid output size.

Reason: The connection words size is too large to fit in the programmed word array size in the PLC.

What to check:

- Check the programmed connection size in the PLC and the VFD (example the VFD is sending 2 words and the PLC is programmed to 4 words).
- Ensure the comm format for the module is set to a data type of INT in the PLC. This can be found under the properties for the module.

Error Code 16#0204 = Connection Request Error: Connection request timed out.

Reason: The PLC is attempting to make a connection; however, the VFD is not responding.

What to check:

- Check to make sure DHCP is disabled if a Static IP Address is being programmed in the VFD. This means that Parameter P0850 IP Address Config should be set to 0 = Parameters.
- Check the programming of the IP address of the VFD and Subnet.
- Check the programming of the IP Address in the PLC communicating to the VFD.
- Try to ping the VFD's IP address via a computer connected to the same network. To do this on a Windows 11 computer that is on the same network as your PLC and VFD:
 - You can do this by clicking on the Start button, typing "cmd" into the search bar, and hitting
 Enter. Alternatively, you can press Windows + R, type "cmd", and click OK. Locate and correct the
 IP address problem.
 - Once Command Prompt is open, type the ping command followed by the IP address of your
 VFD. For example: ping 192.168.0.126. Then press Enter.
 - o If you get "Request timed out". You are not able to communication with your VFD and likely your PLC can not either.
 - o In the Command Prompt, type the ping command followed by the IP address of your PLC.
 - o If you get "Request timed out". You are not able to communication with your PLC and likely your VFD can not either.

Command Prompt X + v		-	
Microsoft Windows [Version 10.0.261 (c) Microsoft Corporation. All righ	.00.3624] nts reserved.		
C:\Users\bteac>ping 192.168.0.126			
Pinging 192.168.0.126 with 32 bytes Reply from 192.168.0.20: Destinatio Request timed out. Request timed out. Request timed out.	; of data: n host unreachable.		
Ping statistics for 192.168.0.126: Packets: Sent = 4, Received = 1	l, Lost = 3 (75% loss)),	
C:\Users\bteac>			

• Check network wiring.



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2) VFD has A147: EtherNet/IP Communication Offline

This alarm indicates an interruption of the EtherNet/IP communication.

What to check:

- Programming error. Master and slave set with a different number of I/O words.
- Communication with the master has been lost (broken cable, unplugged connector, etc.).

3) Communication is too slow, or network traffic is to high.

If your network is seeing heavy traffic or your communication to the VFD is too slow, you want to change your RPI rate in Studio 5000. This can be found under the module's Connection tab. A lower number means it is communicating more often.

Module Properties: Local (SSW90	0-CETH-W 1.060) ×			
General	Connection			
<mark>Connection</mark> Module Info				
Internet Protocol Port Configuration	Name	Requested Packet Interval (RPI) (ms)	Connection over EtherNet/IP Inpu	it Trigger
	110/160 Manufacturer Parameters	20.0 🔹 1.0 - 3200.0	Unicast 🗸 Cyclic	\sim
	Inhibit Module Major Fault On Controller If Connection Fails While Module Fault	in Run Mode		
Status: Offline		ОК	Cancel Apply	Help

 WEG's scope of solutions is not limited to the products and solutions presented in this brochure.
 Contact WEG for information on additional products and solutions.

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US.CFW320.A0I.Configuration Information contained hearin is subject to change without notice.