

# EtherNet/IP™ Gateway

Easy to use, powerful gateway for Ethernet/IP networks

Type number: VFD-GATEWAY  
Part number: 3AUA0000235813



When you need to connect between different networks in your Variable Frequency Drive (VFD) installation, a fast and easy to set up gateway reduces your programming and start-up time.

ABB's Ethernet/IP Gateway provides software-free setup via a web browser interface and gives the flexibility of connecting up to five (5) ABB VFDs or DC drives to one gateway.

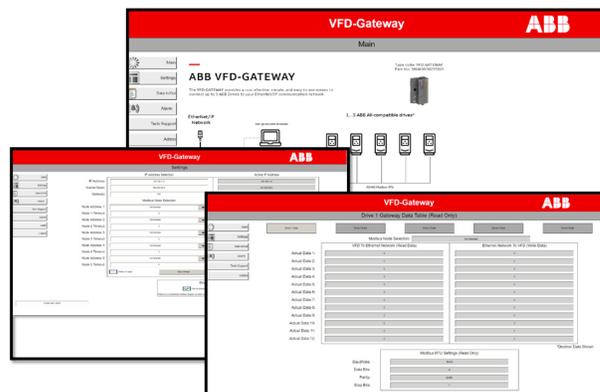
## Standard features

- Allows connection between an EtherNet/IP network and ABB VFDs using Modbus RTU:
  - Supports EtherNet/IP
  - Supports ABB Drives Profile
- One EtherNet/IP node can be connected from 1 up to five (5) ABB VFDs reducing cost
- Full support for:
  - ACS380, ACS480, ACS580, ACQ580, ACH580 (7 words in/out)
  - ACS880 (12 words in/out)
  - DCS880 DC drive (12 words in/out)
- Limited support for ACH580 E-Clipse bypass (9 words in/3 words out)
- Limited support for ACS355 (9 words in/3 words out)
- Fixed Modbus RTU baud rate for quicker set up of the VFD.
- Access to drive parameters through Read/Write
- Drive Parameters are organized in a data block that allows Ethernet/IP access for easy read and write either individually or as a whole
- Security features based on IEC 62443
- Requires user supplied 24VDC (340mA)

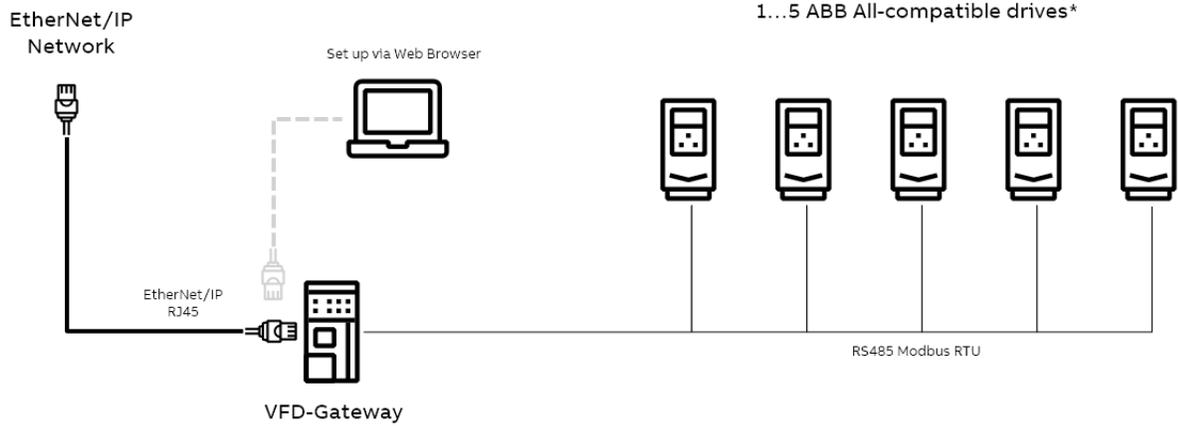
## VFD-GATEWAY configuration via web browser

- The VFD-GATEWAY is configured using a standard web browser on a PC/Laptop, to open a setup web-page which is embedded on the VFD-GATEWAY.
- The embedded web page does not require any additional software.
- This allows you to set:
  - VFD-GATEWAY Ethernet/IP address
  - Number of VFD nodes
  - Type of VFD drive at node
  - Diagnostic information to aide in troubleshooting

## Web configuration screens

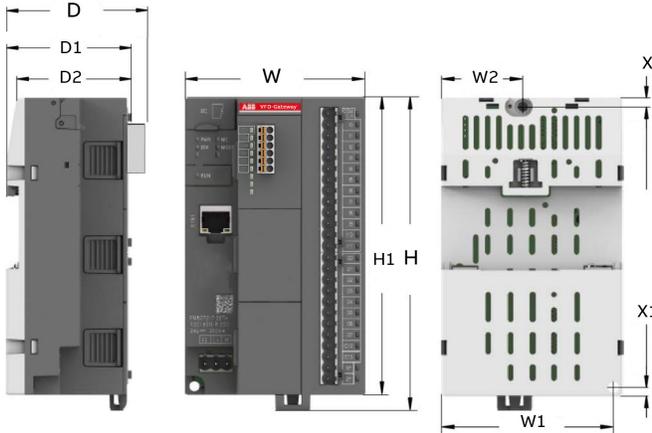


# Network topology



\*Plus ACS355 with limited support

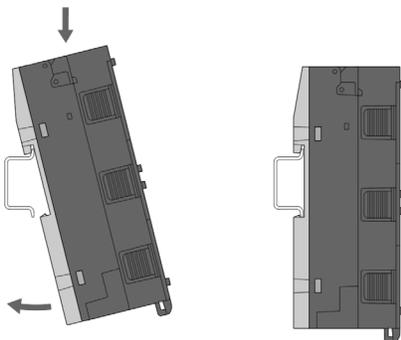
# Dimensions



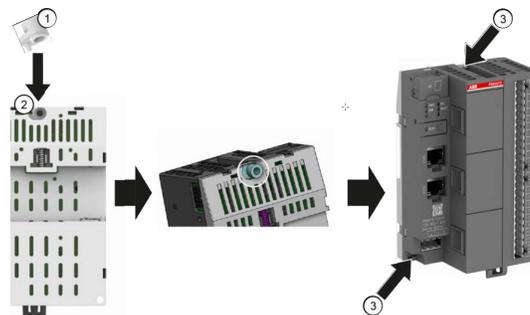
VFD-GATEWAY

H	W	D	H1	W1	W2	D1	D2	X	X1
in (mm)									
5.63	3.23	2.84	5.31	3.07	1.45	2.24	2.04	0.17	0.16
(143.1)	(82)	(72.1)	(135)	(78)	(37)	(57)	(52)	(4.25)	(4)

## Installation on DIN rail (EN-50022)



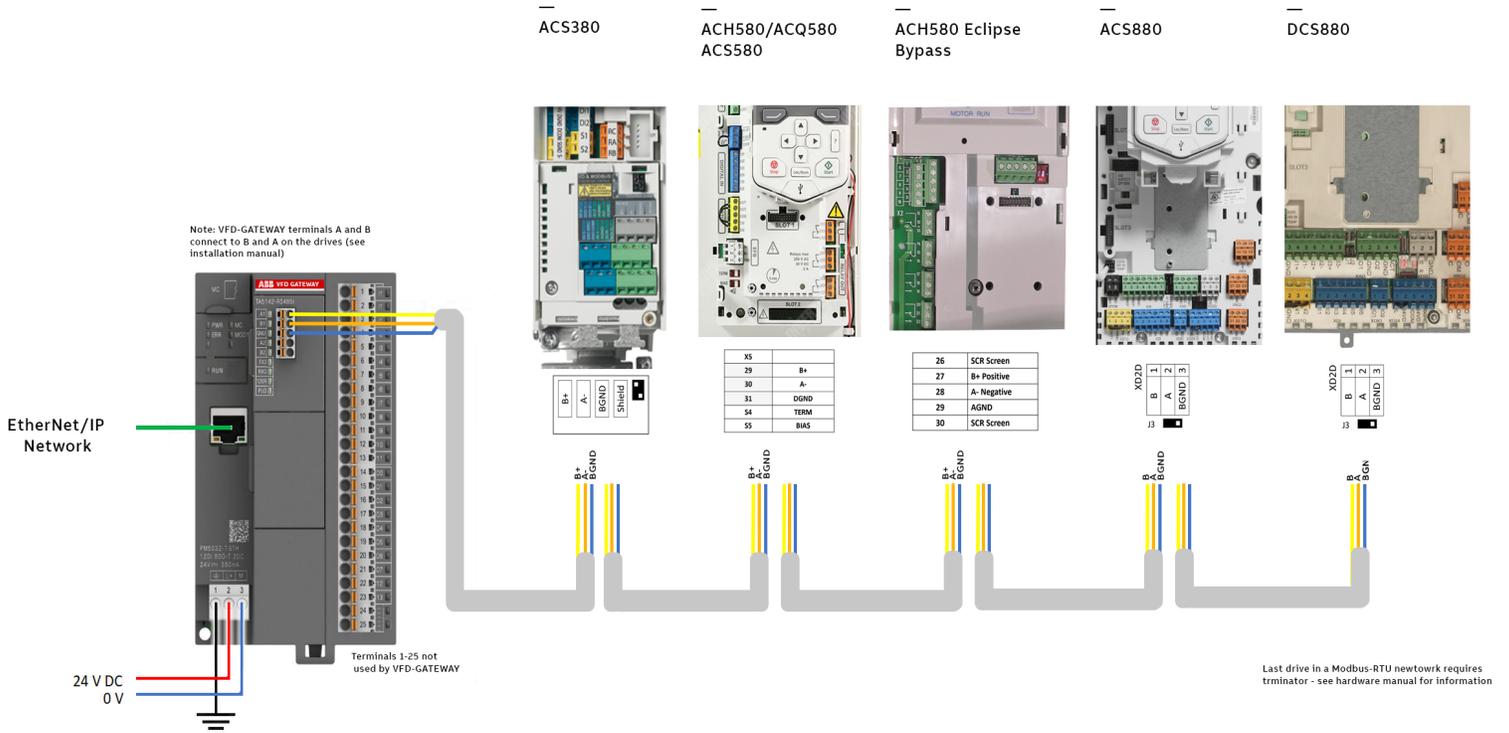
## Installation with screw & TA543 option



543 screw mounting accessory  
 t for TA543 screw mounting accessory  
 oles for screw mounting

TA543 option (not included) is ordered separately from the VFD-GATEWAY.

# Connection to ABB drives



## EtherNet/IP and Modbus drive data - example for an ACS880 drive:

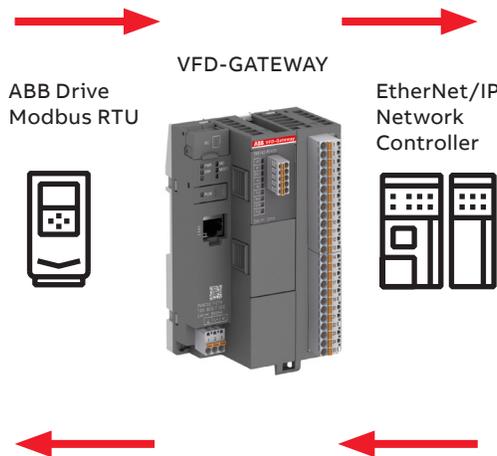
### ABB Drive

#### Drive Data Out

Data out 1	Status Word 16 bit
Data out 2	Act1 16 bit
Data out 3	Act 2 16 bit
Data out 4	Motor Current
Data out 5	DC Bus Voltage
Data out 6	Motor Speed
Data out 7	Motor Power
Data out 8	Output Voltage
Data out 9	Motor Torque
Data out 10	Output Frequency
Data out 11	Ambient Temperature
Data out 12	Data Storage

#### Drive Data In

Data In 1	Control Word 16 bit
Data In 2	Ref 1 16 bit
Data In 3	Ref 2 16 bit
Data In 4	Data Storage
Data In 5	Data Storage
Data In 6	Data Storage
Data In 7	Data Storage
Data In 8	Acceleration time 2
Data In 9	Deceleration time 2
Data In 10	Constant Speed 1
Data In 11	Constant Speed 2
Data In 12	Constant Speed 3



### EtherNet/IP Network Controller

#### EtherNet/IP Data In

Data In 1	Status Word 16 bit
Data In 2	Act 1 16 bit
Data In 3	Act 2 16 bit
Data In 4	Motor Current
Data In 5	DC Bus Voltage
Data In 6	Motor Speed
Data In 7	Motor Power
Data In 8	Output Voltage
Data In 9	Motor Torque
Data In 10	Output Frequency
Data In 11	Ambient Temperature
Data In 12	Data Storage

#### EtherNet/IP Data Out

Data out 1	Control Word 16 bit
Data out 2	Ref 1 16 bit
Data out 3	Ref 2 16 bit
Data out 4	Data Storage
Data out 5	Data Storage
Data out 6	Data Storage
Data out 7	Data Storage
Data out 8	Acceleration time 2
Data out 9	Deceleration time 2
Data out 10	Constant Speed 1
Data out 11	Constant Speed 2
Data out 12	Constant Speed 3

## Compatible drives: Supported data words in/out

Drive	Supported data words
ACS355	9 words in / 3 words out*
ACS380	7 words in / out
ACH/Q/S580	7 words in / out
ACS880	12 words in / out
DCS880	12 words in / out
ACH580 E-Clipse bypass	9 words in / 3 words out*

\*With the ACS355 and the ACH580 E-Clipse bypass, data mapping is handled differently than the ALL-Compatible drives due to a number of fixed registers.

## Technical Data

Power supply requirements (user supplied)	
Voltage	24 VDC (-15 %, +20 %)
Protection against reverse polarity	Yes
Current consumption	340mA Max
Environmental limits	
Operating temperature (horizontal mounting)	0 °F... +140°F (0 °C...+60 °C)
Operating temperature (vertical mounting)	0 °F... +104°F (0 °C...+40 °C)
Storage temperature	-40°F... +158°F (-40 °C...+70 °C)
Ambient Relative Humidity	Max. 95 %, without condensation
Air pressure (operating)	> 800 hPa / < 2000 m
Air pressure (storage)	> 800 hPa / < 2000 m
Construction	
Housing	Plastic, Classification V0 according to UL 94
Weight	0.88lb (0.4kg)
IP Rating	IP20
EtherNet/IP Port	
10/100BaseT(X) Port	1 – Auto/10/100 - RJ45 connection
Mode	Adapter
CIP Gateway Objects Supported	Identity, Message Router, Assembly, Connection Manager, Ethernet link, Port
Max. No. Of Adapter Connections	100
Input data size	150 bytes
Output data size	150 bytes
CIP Message Class Supported	Class 1 or I/O messages; Class 3 or Explicit message are not supported
Cable type	CAT5 or higher, and type UTP, FTP or STP
Serial interface	
Serial standard	RS-485 (Modbus RTU)
Baudrate	38,400 bps
Data bits	8
Parity	Even
Stop bits	1
Terminator for RS-485	120 ohms, ¼ watt (Built In)
Isolation	2kV (Built In)
Serial signals	RS-485 2 wire
No of drive connections	Up to 5 (max)
ABB Drives supported	ACS355 (limited support) ACH580 E-Clipse (limited support) ACS180; ACS380; ACS480; ACS580, ACH580; ACQ580; ACS880; DCS880
Cable type	2 cores, twisted, with common shield (see manual Modbus installation section for full requirements)

Communication speeds	
Typical read time	60-70ms per drive
Continuous read/write time.	100 -110ms per drive
The VFD-Gateway is set up to only write data to the drive when the write data changes, this allows us to optimize communication speed.	
Standards and certifications	
cUL, CE and RoHS	
Package contents	
Device	1 x VFD-GATEWAY
Modbus RTU	1 x TA5142 RTU RS485 adapter
Terminal block	1x 3 pin spring loaded terminal block 1 x 12 pin spring loaded terminal block 1 x 13 pin spring loaded terminal block
Documentation	1 x quick installation guide 1 x warranty card

For more information please contact your local ABB representative or visit:

[www.abb.com/drives](http://www.abb.com/drives)

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