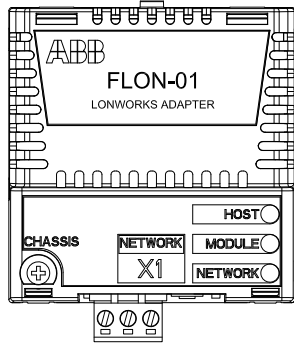


# Quick Start Guide for E-Clipse Bypass FLON-01 Adapter Module (LonWorks®)



**NOTE!** Bypass Firmware version (bypass parameter 3301) 1.01B or later is required.

## Overview

Description:

This document contains the basic start-up procedure of the E-Clipse Bypass with the FLON-01 LonWorks adapter module. The FLON-01 LonWorks adapter module is an optional device for ABB E-Clipse Bypass which enables the connection of the device to a LonWorks network. Reference the E-Clipse Bypass User's manual and the FLON-01 User's manual for additional product information.

**WARNING!** Follow the safety instructions given in the E-Clipse Bypass documentation. Before installation, switch off all power sources to the E-Clipse Bypass unit. Wait 5 minutes to ensure that the capacitor bank of the drive is discharged. Switch off all dangerous voltages connected from external control circuits to the inputs and outputs of the E-Clipse Bypass and/or drive.



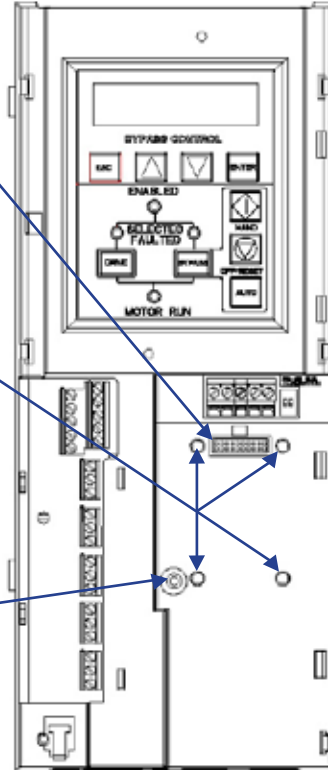
## Mechanical installation

The FLON-01 fieldbus adapter (FBA) is to be inserted into the 20-pin FBA connector in the E-Clipse Bypass. The module is held in place with plastic pins and one screw. The screw also provides the grounding of the fieldbus cable shield connected to the module.

### Mounting procedure

Figure 1 - E-Clipse Bypass RBCU

- 1) On the bypass locate the fieldbus adapter (FBA) port connector.
- 2) Align the (4) plastic pins on the FBA plastic housing with the (4) alignment holes in the RBCU.
- 3) Press the FBA firmly until it snaps into place.
- 4) Using the encapsulated screw, fasten the FBA to the E-Clipse Bypass.



## Electrical installation

### General cabling instructions

Arrange the bus cables as far away from the motor cables as possible. Avoid parallel runs. Use bushings at cable entries.

**NOTE!** LonWorks networks require special cable. It is recommended to use cables defined by LONMARK® Layer 1-6 Guidelines. See FLON-01 User's Manual under Technical data.

## Network connection

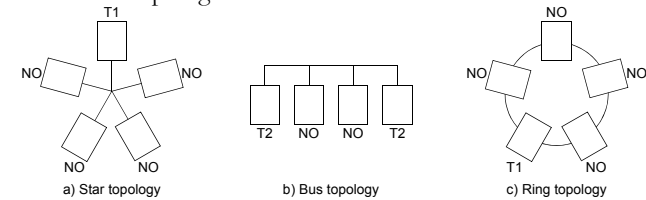
The bus cable is connected to terminal block X1 on the FLON-01.

X1		Description
1	SHLD	RC-filtered connection to the module ground
2	NET A	Network cable connection
3	NET B	

### Bus termination

The bus line is terminated with resistors connected between the network cable conductors A and B when the FLON-01 module is at the end of the bus. Termination prevents signal reflections from the bus cable ends.

Figure 2 - Bus termination for different network topologies

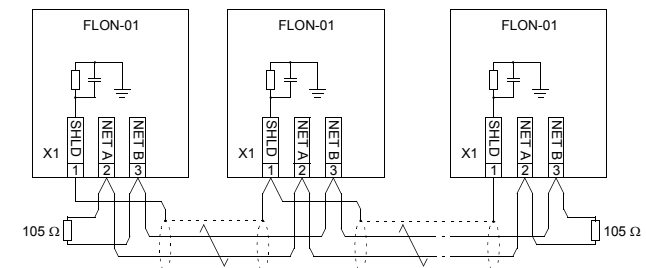


T1	52.5 ohm termination at one of the nodes in one bus segment
T2	105 ohm termination at both ends of the line
NO	No termination

### Grounding the LonWorks cable shield

The LonWorks cable shield can be directly grounded at one station only. At other stations the shield should be grounded via an RC filter.

Figure 3 - Network cable connection for bus topology.



## E-Clipse Bypass & Drive Configuration

### Overview:

It is preferable to configure the drive before the FLON-01 is configured for the network. The reason for this is that the FLON-01 reads several parameter values from the drive in order to operate correctly and in order to select different modes. Furthermore, some of the configuration network variable values receive their defaults from the drive. The drive control location parameters should also be set accordingly to enable full and logical operation of the FLON-01.

### Initial Setup

**NOTE!** Throughout this document, references to parameters pertain to parameters and adjustments in the ABB E-Clipse Bypass. **Unless specifically called-out as ACH550 parameters, all parameter adjustments are in the E-Clipse bypass.** In this document any references to “system” refers to the E-Clipse Bypass and ACH550 drive.

- 1) The E-Clipse external interface files (\*.XIF) are embedded in the FLON-01 module.
- 2) Apply power to the system.
- 3) Activate Fieldbus Adapter (FBA) Port Connector:

#### E-Clipse Bypass Parameter Settings - Activate Fieldbus Adapter Port

Par.No.	Parameter Name	Setting	Description
9802	COMM PROT S	4: EXT FBA	Activates module

- 4) Verify HOST LED on the FLON-01 is SOLID GREEN.
- 5) Verify Parameter 5101 FBA TYPE = LonWorks.
- 6) If the LonWorks network is for supervisory purposes only, setup is complete. If LonWorks network is for supervisory and control proceed to section “**System Parameterization for LonWorks Network Control**”.

## System Parameterization for LonWorks Network Control

If the LonWorks network is the desired source of control for the drive only proceed to section “**LonWorks Network Control - Drive Only**”.

If the LonWorks network is the desired source of control for the drive and bypass proceed to section “**LonWorks Network Control - System**”.

### LonWorks Network Control - Drive Only

Enable Drive Only Control (run/stop, reference, set point, fault reset)

#### E-Clipse Bypass Parameter Settings - Start/Stop Drive Network Control

Par. No.	Parameter Name	Setting	Description
1601	START/STOP	2: COMM	Defines the fieldbus as the start/stop source
1625	COMM CTRL	0 = DRIVE ONLY (Default)	Selecting 0 drive only control of drive only through the fieldbus

If fieldbus is the desired source for drive speed reference set ACH550 parameter

#### ACH550 Parameter Settings - Drive Reference via network

Par. No.	Parameter Name	Setting	Description
1103	REF 1 SELECT	8: COMM	Defines the fieldbus as the reference source

If fieldbus is the desired source for drive fault reset set ACH550 parameter

#### ACH550 Parameter Settings - PID set point via network

Par. No.	Parameter Name	Setting	Description
1102	EXT1/EXT2	7: EXT2	Selects external control location 2 (EXT2)
4010	SET POINT SEL	8: COMM	Defines the fieldbus as the reference source

If fieldbus is the desired source for drive fault reset set ACH550 parameter

#### ACH550 Parameter Settings - Fault reset via network

Par. No.	Parameter Name	Setting	Description
1604	FAULT RESET SEL	8: COMM	Defines the fieldbus as a fault reset source

### LonWorks Network Control - System (E-Clipse Bypass & Drive)

Enable System Control (run/stop, reference, set point, fault reset)

#### E-Clipse Bypass Parameter Settings - Start/Stop System Network Control

Par. No.	Parameter Name	Setting	Description
1601	START/STOP	2: COMM	Defines the fieldbus as the start/stop source
1625	COMM CTRL	1 = SYSTEM	Selecting 1 enables system (bypass and drive) control through the fieldbus

If fieldbus is a desired source for bypass fault reset set E-Clipse Bypass parameter

**NOTE!** Parameter 1625 must be set to 1

#### E-Clipse Bypass Parameter Settings - Network Fault reset

Par. No.	Parameter Name	Setting	Description
1607	RESET SRC	2: COMM	Defines the fieldbus as a fault reset source

If fieldbus is the desired source for drive speed reference set ACH550 parameter

#### ACH550 Parameter Settings - Drive Reference via network

Par. No.	Parameter Name	Setting	Description
1103	REF 1 SELECT	8: COMM	Defines the fieldbus as the reference source

If fieldbus is the desired source for drive PID set-point set ACH550 parameters

ACH550 Parameter Settings - PID set point via network

Par. No.	Parameter Name	Setting	Description
1102	EXT1/EXT2	7: EXT2	Selects external control location 2 (EXT2)
4010	SET POINT SEL	8: COMM	Defines the fieldbus as the reference source

If fieldbus is the desired source for drive fault reset set ACH550 parameter

ACH550 Parameter Settings - Fault reset via network

Par. No.	Parameter Name	Setting	Description
1604	FAULT RESET SEL	8: COMM	Defines the fieldbus as a fault reset source

For more advanced functions such as controlling the bypass and/or drive relay outputs via the LonWorks network, reference the FLON-01 User's Manual or consult your local ABB representative.

The FLON-01 is now ready to be configured per your network requirements. Once you have configured the LonWorks network parameter 5102 should read 3 (Configured on-line).

E-Clipse Bypass FLON-01 Information Parameters

Par. No.	Parameter Name	Description
5101	MODULE TYPE	Type of the module (LonWorks)
5102	NODE STATE	Contains the current state of the network interface. Configured on-line is the normal run-time mode and means that the node is commissioned and on-line on the network. Soft/Bypass/Hard off-line means that the node is not participating actively on the network.  0 = Unknown state 1 = Unconfigured 2 = Applicationless 3 = Configured on-line 4 = Configured off-line 5 = Soft off-line 6 = Configured bypass off-line 7 = Hard off-line, Bypass off-line
5103 - 5108	NEURON ID [5...0]	Displays the Neuron® chip ID of the module in decimal format. The ID is determined by the chip and cannot be changed.  NEURON ID [5] = byte 6 of the unique Neuron ID (MSB) NEURON ID [4] = byte 5 of the unique Neuron ID NEURON ID [3] = byte 4 of the unique Neuron ID NEURON ID [2] = byte 3 of the unique Neuron ID NEURON ID [1] = byte 2 of the unique Neuron ID NEURON ID [0] = byte 1 of the unique Neuron ID (LSB)
5109	NODE ADDRESS 1	Indicates the ID of the node within the subset
5110	NODE SUBNET 1	Indicates to which subnet the node belongs

E-Clipse Bypass FLON-01 Information Parameters (continued)

Par. No.	Parameter Name	Description
5111 - 5116	DOMAIN ID 1 [4...0]	Indicates the ID of the domain within this subnet. Each domain in a LonWorks network has a unique ID of 0, 1, 3 or 6 bytes in length. If the ID is shorter than 6 bytes, it is left justified in this field. DOMAIN ID 1 [5] = byte 6 of the domain ID (MSB) DOMAIN ID 1 [4] = byte 5 of the domain ID DOMAIN ID 1 [3] = byte 4 of the domain ID DOMAIN ID 1 [2] = byte 3 of the domain ID DOMAIN ID 1 [1] = byte 2 of the domain ID DOMAIN ID 1 [0] = byte 1 of the domain ID (LSB)
5117	NODE ADDRESS 2	Indicates the ID of the node within this subnet.
5119 - 5124	DOMAIN ID 2 [4...0]	See parameter 11 - 16 Domain ID 1
5125	XMIT ERRORS	Indicates the number of CRC errors detected during packet reception. An increasing value may be due to collisions or noise on the transceiver input.
5126	TRANS TIMEOUTS	Indicates the number of times that the node failed to receive expected acknowledgements or responses after retrying configuring number of times. An increasing value may be due to destination nodes being inaccessible on the network, transmission failures because of noise on the channel, or if any destination node has insufficient buffers or receive transaction records.