

MicroFlex e190

Wall chart

ABB motion control products

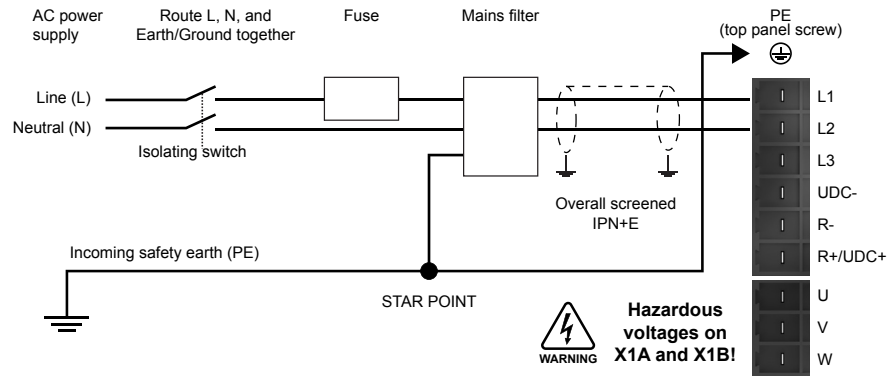
Part numbers

MFE190 - 04UN - 03A0 - 2

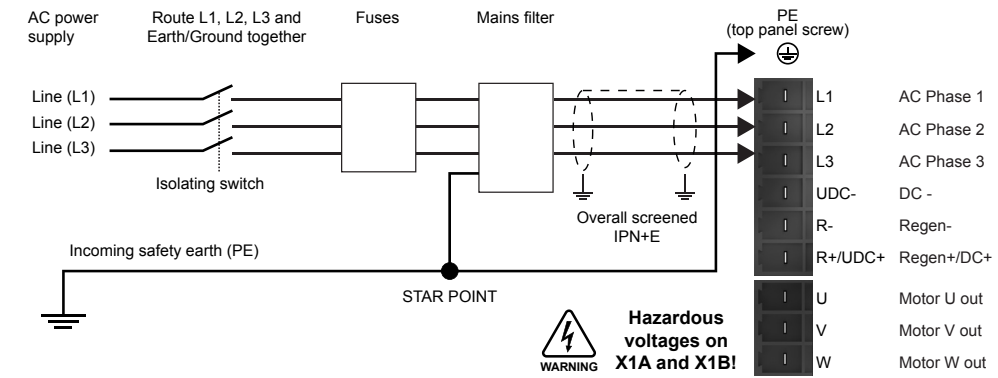
MFE190	E190 = MicroFlex e190
04	04 = Construction / frame size
UN	UN = Universal encoder, slave / CN, not programmable*
03A0	Rated amps: 01A6 = 1.6 A, 03A0 = 3 A, 06A0 = 6 A, 09A0 = 9 A
2	Input voltage rating: 2 = 105-230 VAC

* Motion programming is enabled by fitting memory unit MFE190-MU-OCU+N8020 (order code: 3AXD5000048603).

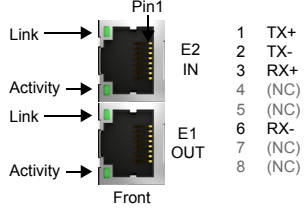
X1A - Single phase 115-240 V AC ±10% input / X1B - Motor power out



X1A - Three phase 115-240 V AC ±10% input / X1B - Motor power out



E1 & E2 - Ethernet fieldbus



Memory unit

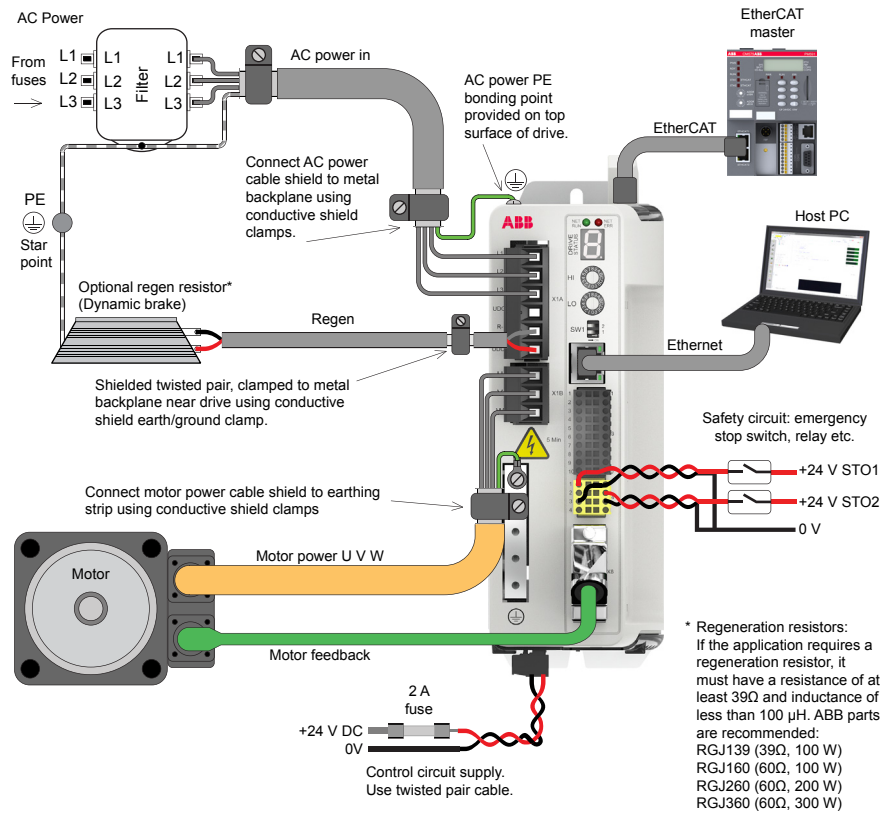
Stores firmware, parameters and Mint programs, and defines drive features:
 3AXD5000048602: Standard network CN
 3AXD5000048603: Motion Programming
CAUTION! Do not insert or remove the memory unit while the drive is powered.

Recommended power filters

Drive continuous current rating	1Ø AC power ABB catalog number	3Ø AC power ABB catalog number
1.6 A	OFI-01 / OFI-02	OFI-03
3 A	OFI-01 / OFI-02	OFI-03
6 A	OFI-01	JFI-02
9 A	OFI-01	JFI-02

IMPORTANT! Compliant with EN61000-6-3 (Class B).
 Foot-mount filter OFI-01 is designed for use with any single-phase MicroFlex e190.

Recommended system wiring



Ethernet fieldbus port configuration

Value	Mode
00	EtherCAT slave mode
01-EF	POWERLINK CN mode: selected value is node ID
F0	Reserved
F1	Reserved
F2-FF	Reserved

Example: 0 0 = EtherCAT slave mode selected

Mating connectors

	mm ² / AWG	N·m / lbf·in
X1A Dinkle EC762V-B3253206P-BK	0.2-6.0 / 30*-10	0.7 / 6.2
X1B Dinkle EC762V-B3253203P-BK	0.2-6.0 / 30*-10	0.7 / 6.2
X2 Phoenix MVSTBR 2,5HC/ 2-ST-5,08	0.2-2.5 / 24-12	0.6 / 5.3
X3 Weidmüller B2L 3.50/20/180	0.2-1.0 / 28-16	- / -
X3 Weidmüller B2L 3.50/8/180	0.2-1.0 / 28-16	- / -

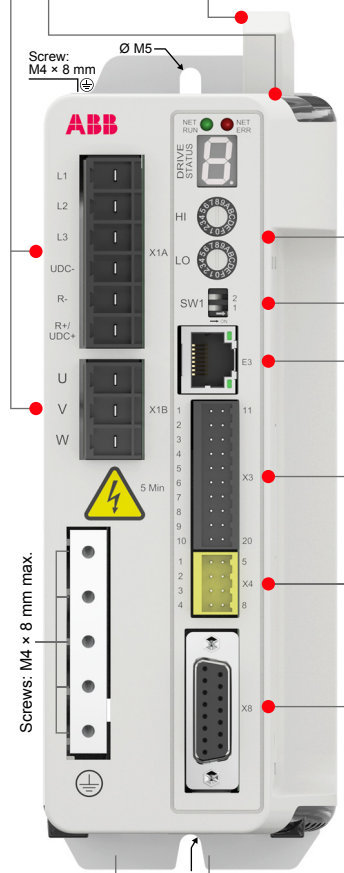
* Minimum size for UL installations is 14 AWG.

Drive status LED

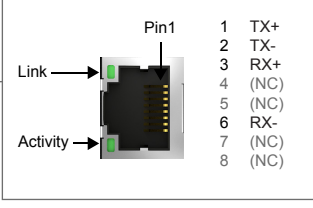
The drive status display indicates general MicroFlex e190 status information. When an error occurs, the drive displays a sequence starting with the symbol **E**, followed by the five digit error code. If the initial symbol is **b**, call technical support.

The decimal point to the right of the number illuminates to indicate that STO is activated (no torque). For a complete list of error codes open Mint WorkBench, press F1, and locate the error handling topics.

- Drive disabled, and one or both STO inputs are not powered
- Drive disabled
- Initialization error (check memory unit insertion) or recovery mode.
- Suspend active
- Firmware loading
- Hold To Analog (HTA) mode
- Drive enabled, but idle
- Cam move
- Dwell
- Flying shear
- Follow move
- Homing
- Incremental move
- Jog move
- Offset move
- Position move
- Torque move
- Stop input active
- Velocity reference move
- Spline move



E3 - Ethernet: host PC



SW1 - DIP switches

Switch	Purpose	OFF	ON
2	Firmware recovery mode	Normal operation	Recovery mode
1	Fix IP address for host port	Normal IP configuration	Fixed IP address 192.168.0.1

X3 - Input / output

Pin	Signal	Pin	Signal
1	Status- / DO0-	11	Status+ / DO0+
2	DO2-	12	DO2+
3	DO1-	13	DO1+
4	DI2-	14	DI2+
5	DI3-	15	DI3+
6	DI1-	16	DI1+
7	DI0-	17	DI0+
8	AGND	18	A00
9	AIO-	19	AIO+
10	Shield	20	Shield

X4 - Safe Torque Off (STO)

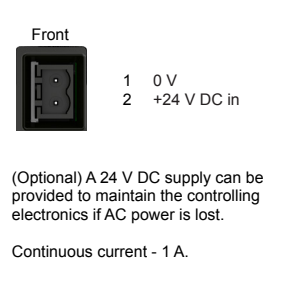
Pin	Signal	Pin	Signal
1	STO1	5	STO1
2	STO2	6	STO2
3	SGND	7	SGND
4	24V out	8	24V out

The 24 V output is for powering the STO inputs only. See user manual for wiring.

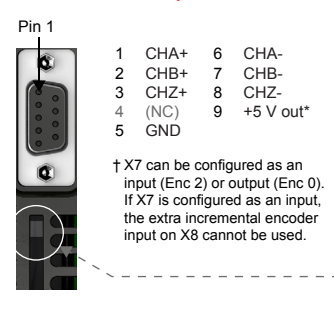
Fieldbus status LEDs

NET RUN	EtherCAT®	POWERLINK®
Off:	INITIALISATION state (or not powered)	NOT ACTIVE state (or not powered)
Blinking:	PRE-OPERATIONAL state	STOPPED state
1 flash:	SAFE-OPERATIONAL state	PRE-OP1 state
2 flashes:	-	PRE-OP2 state
3 flashes:	Device identification	READY TO OPERATE state
Flickering:	-	BASIC ETHERNET state
	Continuous: OPERATIONAL state.	OPERATIONAL state
NET ERR	EtherCAT®	POWERLINK®
Off:	No errors or not powered.	No errors or not powered.
Blinking:	Invalid configuration	-
1 flash:	Unhandled error. See manual 3AXD5000037326 for details.	-
2 flashes:	Sync manager watchdog.	-
	Continuous: OPERATIONAL state.	An error has occurred.

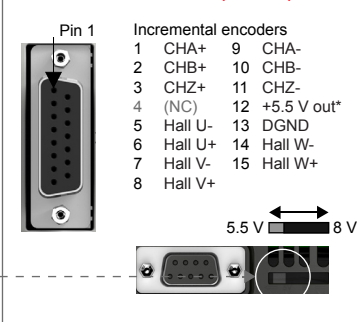
X2 - 24 V control circuit backup supply



X7 Encoder in / out†



X8 - Feedback in (Enc 0)



EnDat 2.1

1	Data+	9	Data-
2	Clock+	10	Clock-
3	(NC)	11	(NC)
4	(NC)	12	+5.5 V out*
5	Sin-	13	DGND
6	Sin+	14	(NC)
7	Cos-	15	(NC)
8	Cos+		

SinCos

1	(NC)	9	(NC)
2	(NC)	10	(NC)
3	(NC)	11	(NC)
4	(NC)	12	+5.5 V out*
5	Sin-	13	DGND
6	Sin+	14	(NC)
7	Cos-	15	(NC)
8	Cos+		

* X8 pin 12 provides a 5.5 V or 8-12 V supply for feedback devices that require power. The maximum combined current from all encoder supplies (X8 pin 12 and X7 pin 9) is 500 mA. **WARNING!** The 8-12 V supply is provided for devices on X8 that require this voltage. Move the switch towards the rear of the drive to select 8-12 V output. Selecting the wrong voltage could damage your feedback device.

* Max. combined current from X8 pin 12 and X7 pin 9 is 500 mA

BiSS, SSI or EnDat 2.2

1	Data+	9	Data-
2	Clock+	10	Clock-
3	(NC)	11	(NC)
4	(NC)	12	+5.5 V out*
5	(NC)	13	DGND
6	(NC)	14	(NC)
7	(NC)	15	(NC)
8	(NC)		

Smart Abs

2	(NC)	10	(NC)
3	(NC)	11	(NC)
4	(NC)	12	+5.5 V out*
5	(NC)	13	DGND
6	(NC)	14	(NC)
7	(NC)	15	(NC)
8	(NC)		

An extra incremental encoder can be connected simultaneously with BiSS, SSI, EnDat 2.2, or Smart Abs. Use OPT-MF-200 Encoder Breakout for easy connection of both inputs. Use OPT-MF-200 in conjunction with OPT-MF-201 Resolver Adapter to allow simultaneous connection of a resolver (Enc 0) and an incremental encoder (Enc 2). † See note for X7.

(Enc 2)†

Extra incremental encoder			
1	(NC)	9	(NC)
2	(NC)	10	(NC)
3	(NC)	11	(NC)
4	(NC)	12	+5.5 V out*
5	CHA+	13	DGND
6	CHA+	14	CHZ-
7	CHB-	15	CHZ+
8	CHB+		



3AXD5000037323
REV A (EN)

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