LCC140

Dedicated controller for LCM100

This is a dedicated controller for the LCM100 linear conveyor module. In addition to controlling movement, positioning, and input/output signals, it can also perform operations related to slider insertion and ejection.



LCC140



Programming box
▶ HPB/HPB-D
P.658



Support software for PC
▶ POPCOM+
P.650

Basic specifications

Item		LCC140
Controllable robot		Linear conveyor module LCM100
Power supply capacity		350 VA
External dimensions		W:402.5 × H:229 × D:106.5 mm
Weight		4.8 kg
Control power supply input		Single-phase 200 to 230 V AC +/-10% (50/60 Hz)
Main power supply input		Single-phase 200 to 230 V AC +/-10% (50/60 Hz)
Control method		AC fully digital software servo
Position detection method		Magnetic linear scale
Emergency stop input		Normal close contact input
Output signal		Contact output: MPRDY
Communication		RS-232C 2ch (HPB/COM, RFID)
Program		Max. 999 steps/single program, Max. 10000 steps/all programs, Max. 100 programs
Points		10000 points
System backup		Lithium battery
Multitasking		Max. 4 tasks
Usage temperature		0 to 40 °C
Storage temperature		-10 to 65 °C
Usage humidity		35 to 85%RH (no dewing)
Noise resistance		IEC61000-4-4 level 3
CC-Link unit	CC-Link compatible version	Ver. 1.10
	Remote station type	Remove device station
	Number of occupied stations	Fixed to 2 stations
	Station number	1 to 63 (Set from HPB)
	Communication speed	10M/5M/2.5M/625K/156Kbps (Set using HPB or POPCOM+.)
	Shortest length between stations	0.2 m or more
	Total length	100m/10Mbps, 160m/5Mbps, 4000m/2.5Mbps, 900m/625Kbps, 1200m/156Kbps
	Monitor LED	None
	CC-Link I/O points	General-purpose input 32 points General-purpose output 32 points Dedicated input 16 points Dedicated output 16 points Input register 8 words Output register 8 words

Controllable robot	LCM100 P.61
CE marking	—
Field networks	CC-Link DeviceNet EtherNet/IP

Model Overview

Name		LCC140
Controllable robot		Linear conveyor module LCM100
Input power	Control power supply	Single phase 200 to 230V AC +/-10% maximum (50/60Hz)
	Main power supply	
Operating method		Programming/I/O point tracing/Remote command/ Operation using RS-232C communication

Ordering method

LCC140 - 10 -

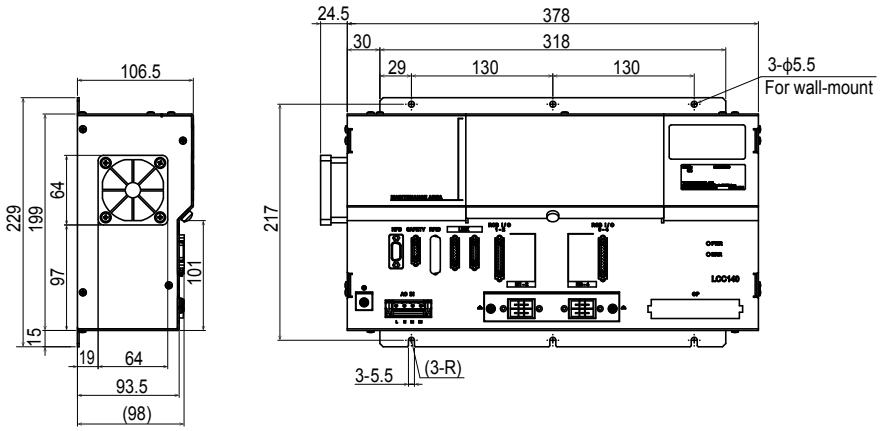
Controller	Current sensor	Network option Note
	10:10A	No entry: None
		CC: CC-Link
		DN: DeviceNet™
		EP: EtherNet/IP™

Note. For 2MT, be sure to select an appropriate network option.

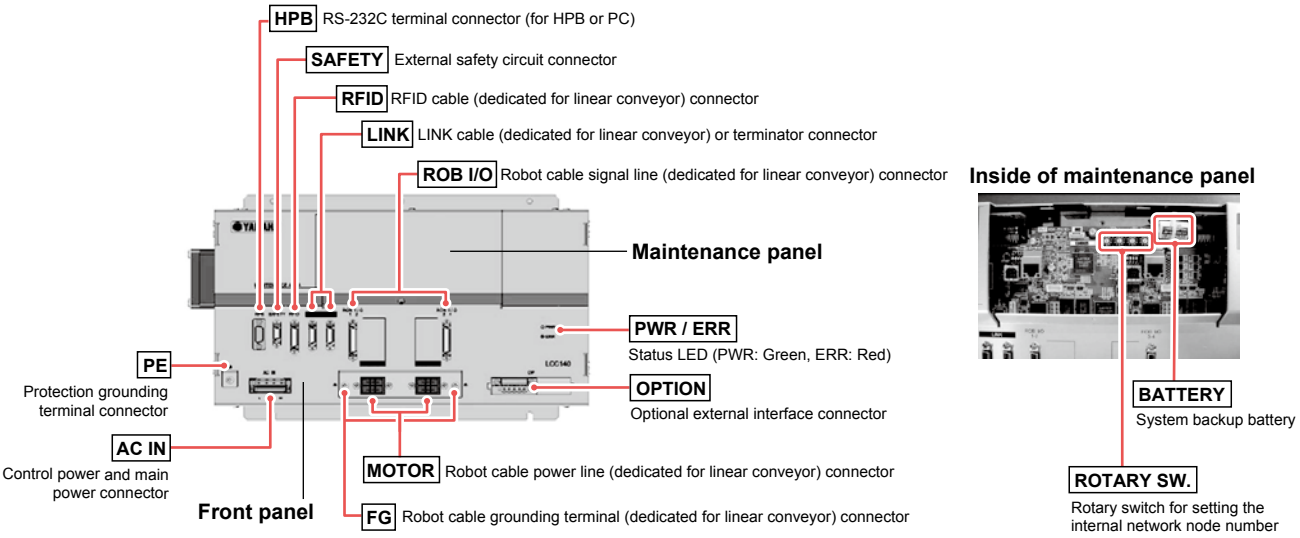
Item			LCC140	
DeviceNet™ unit	Applicable DeviceNet™ specifications		Volume 1 Release2.0, Volume 2 Release2.0	
	DeviceNet™ Conformance test		Compliant with CT24	
	Device profile/Device type number		Generic Device (keyable) / 2B Hex	
	Vendor name/Vendor ID		YAMAHA MOTOR CO.,LTD. / 636	
	Product code		21	
	Product revision		1.0	
	EDS file name		Yamaha_LCC1(DEV).eds	
	MAC ID setting		0 to 63 (Set using HPB or POPCOM+.)	
	Communication speed setting		500K/250K/125Kbps (Set using HPB or POPCOM+.)	
	Communication data		Predefined Master/Slave Connection Set: Group 2 only server Dynamic connection support (UCMM): None Support for divided transmission of explicit message: Yes	
	Network length	Total length	100m/500Kbps, 250m/250Kbps, 500m/125Kbps	
		Branch length	6m or less	
		Total branch length	39m or less/500Kbps, 78m or less/250Kbps, 156m or less/125Kbps	
	Monitor LED		None	
	Number of DeviceNet™ I/O points/number of occupied channels		General-purpose input 32 points General-purpose output 32 points Dedicated input 16 points Dedicated output 16 points Input register 8 words Output register 8 words	Input: 24byte Output: 24byte
EtherNet/IP™ unit	Applicable software version		LCC140: Ver. 64.07 or higher HPB/HPB-D: Ver. 24.06 or higher POPCOM+: Ver. 2.1.0 or higher	
	Applicable EtherNet/IP™ specifications		Volume 1: Common Industrial protocol(CIP™) Edition 3.14 Volume 2: EtherNet/IP™ Adaptation of CIP™ Edition 1.15	
	EtherNet/IP™ Conformance test		Compliant with CT11	
	Device profile/Device type number		Generic Device (keyable) / 2B Hex	
	Vendor name/Vendor ID		YAMAHA MOTOR CO.,LTD. / 636	
	Product code		23	
	Product revision		1.1	
	EDS file name		Yamaha_LCC1(EIP2).eds	
	Communication speed		10Mbps / 100Mbps	
	Connector specifications		RJ-45 connector (8-pole modular connector), 2 ports	
	Applicable cable specifications		STP cable (double shield) with CAT 5e or higher	
	Maximum cable length		100m	
	Monitor LED		Module Status(MS), Network Status(NS), Link/Activity:Port1-2	
	Number of EtherNet/IP™ I/O points/number of occupied channels		General-purpose input 32 points General-purpose output 32 points Dedicated input 16 points Dedicated output 16 points Input register 8 words Output register 8 words	Input: 24byte Output: 24byte

LCC140

Dimensions

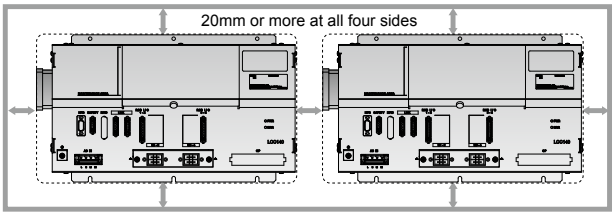


Part names



Installation conditions

- Reserve a space for the controller in the vicinity of the module.
- Install the controller perpendicularly to the wall.
- Reserve enough margins around the controller (20 mm or more on each side) and ensure sufficient ventilation.
  (See fig. at right.)
- Environmental temperature: 0 to 40°C
- Environmental humidity: 35 to 85%RH (no condensation)



Reference for power supply capacity and heat generation quantity

The power capacity and heat generation quantity required for the linear conveyor may vary depending on the module type or operation duty. Prepare the power supply and investigate the control panel size, controller layout, and cooling method while referring to the table below.

Reference values for actual operation (per LCC140 controller)

Module type	Number of motors	Power supply capacity			Heat generation quantity (during operation)
		Control power supply	During waiting	During slider operation	During slider operation
LCM100-4M	4	35VA	60VA	350VA	20W
LCM100-3M	3	35VA	54VA	271VA	16W
LCM100-2MT	2	35VA	48VA	193VA	11W

The power capacity and heat generation quantity values stated in the table show the maximum values of LCC140 and they do not exceed these values. Since the operation duty of each motor of the linear conveyor is low due to operating characteristics, the power capacity required for actual operation becomes about 1/4 to 1/3 of the maximum capacity value.

Maximum capacity values (per LCC140 controller)

Model	Power supply capacity	Heat generated
LCM100	1200VA	70W

Option parts

LCC140

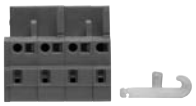


Options

The icons indicated at the right end show the controllers that each component can use.

Power connector + wiring connection lever

One set of parts per LCC140 is required.



Model	KAS-M5382-00

LCC140 TS-X TS-P SR1-X SR1-P RCX320 RCX340/341

HPB dummy connector

When performing the operation with the programming box HPB removed, connect this dummy connector to the HPB connector.
One connector per LCC140 is required.



Model	KDK-M5163-00

LCC140 SR1-X SR1-P

SAFETY connector

One connector per LCC140 is required.



Not wired (plug + shell kit) Wired Note

Model	Not wired	KDK-M5370-10
	Wired Note	KDK-M5370-00

Note. The wired connector is that the wiring for the emergency stop cancel was performed inside the connector. Select this model when performing the operation check or debugging with single linear conveyor.

LCC140

LINK cable

([Number of modules] - 1) cables per line are required.



Model	1m	KDK-M5361-10
	3m	KDK-M5361-30
	5m	KDK-M5361-50

LCC140

Terminator connector

When connecting modules, two connectors per line are required.



Model	KDK-M5361-00

LCC140

Dust cover (for LINK connector)

This dust cover is attached to the insertion port, into which the the LINK cable terminator connector is not inserted.
When using only one module without connections, two dust covers are required.



Model	KDK-M658K-00 (for MDR20 pin)

Note. The dust cover is essential for the 2MT.

LCC140

Programming box HPB/HPB-D P.658

All operations, such as robot manual operation, program input or edit, teaching, and parameter setting can be performed with this programming box.



HPB HPB-D

	HPB	HPB-D
Model	KBB-M5110-01	KBB-M5110-21
Enable switch	–	3-position
CE marking	Not supported	Applicable

LCC140 ERCD SR1-X SR1-P

Support software for PC POPCOM+ P.650

POPCOM is a simple to use application software that makes tasks such as robot operation, writing-editing programs, and point teaching easy to visually understand.



Model	KBG-M4966-00

LCC140 ERCD SR1-X SR1-P

POPCOM+ environment

OS	Windows XP (32bit), Vista, 7, 8 / 8.1, 10 (Supported version: V.2.1.1 or later)
CPU	Processor that meets or exceeds the suggested requirements for the OS being used.
Memory	Suggested amount of memory or more for the OS being used.
Hard disk	50MB of available space required on installation drive.
Disk operation	RS-232C
Applicable controllers	SRCX to SR1, DRCX, TRCX, ERCX, ERCD, LCC140 Note 1

Note 1. LCC140 is applicable to Ver. 2.1.1 or later.
Note. Windows is the registered trademark of US Microsoft Corporation in U.S.A. and other countries.

Continues on next page

Options

The icons indicated at the right end show the controllers that each component can use.

Data cables

Communication cable for POPCOM+.
Select from USB cable or D-sub cable.



Model		
	USB type (5m)	KBG-M538F-00
	D-Sub type 9pin-9pin (5m)	KAS-M538F-10

Note. This USB cable supports Windows 2000/XP or later.
Note. Data cable jointly used for POPCOM+, VIP+, RCX-Studio Pro.
Note. USB driver for communication cable can also be downloaded from our website.

LCC140 ERCD SR1-X SR1-P RCX320 RCX340/341

RFID

RFID * (manufactured by BALLUFF GmbH)

Reader/writer cable

* This cable is a flexible cable.



Model	
	3m : KDK-M6300-00
	5m : KDK-M6300-10
	10m : KDK-M6300-20

Note. Whether or not the RFID system can be used may vary depending on the destination place (country).
Before selecting a RFID system, please contact YAMAHA.

RFID (manufactured by OMRON)

Antenna amplifier controller cable



Model	0.5m+2m : KDK-M6300-A0

Note. Whether or not the RFID system can be used may vary depending on the destination place (country).
Before selecting a RFID system, please contact YAMAHA.

Dust cover (for RFID)

This cover is attached to the insertion port if RFID is not used. (Included as standard)



Model	KDK-M658K-10 (for MDR26 pin)

Note. Whether or not the RFID system can be used may vary depending on the destination place (country).
Before selecting a RFID system, please contact YAMAHA.

Maintenance parts

Robot cable for LCM100



Model	
	KDJ-M4751-30 (3m×1 pc.)
	KDJ-M4751-50 (5m×1 pc.)
	KDJ-M4755-30 (Flexible cable 3m×1 pc.)
	KDJ-M4755-50 (Flexible cable 5m×1 pc.)

LCC140

Lithium battery for system backup



Model	KDK-M4252-01

LCC140

Replacement filter for LCC140 (5 pcs. in package)



Model	KDK-M427G-00

LCC140