

FRENIC-Lift

LM2C



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**LM2C: Excellent price-performance ratio
for everyday lift applications**



The new version of LM2: LM2C

Small, smart, economic.



Combine the most important features of our bestseller FRENIC-Lift with the demand of elementary elevator applications - and get our new FRENIC-Lift LM2C.

Cost efficiency and basic structures, not more, not less. This inverter gets to the point:

Simple application = simple solution.

Save energy to support Green Building.

Your economic solution for sustainability.



Benefits

The economic version of FRENIC-Lift keeps all basic necessary options and functions. For uncomplicated lift applications, here's all you need.

Book type shape

- Side mounting: Install the inverter in the most convenient way depending on space limitations (e.g. door frames).
- Removable power terminals: Easier and faster installation by pre-wiring thanks to removable power terminals.
- IP 54 heatsink: Stronger IP level allows feed through mounting for heatsink, making cabinet design smaller and cheaper for shaft installation.



Different energy saving modes

Following the standards and directives for saving energy (ISO 25745), different saving energy modes are available. Put the inverter to sleep mode by activating a digital input. Charging circuits are highly robust and allow high number of power ups per hour.

Certified functional safety functions according to EN81-20 for an easier installation

Contactless: Needless of the two motor contactors between inverter and motor.

Connected to the world

CANopen, DCP and Modbus RTU are available thanks to the 3 built-in communication ports.

Stronger coating

New coating makes PCB stronger against humidity and dust. Robustness for lift shaft environments.

Easy rescue operation

Rescue operation available by means of UPS or batteries. Thanks to the new 24VDC input, rescue can be performed from 48 VDC only. Software functions help as well to optimize UPS or batteries sizing by choosing the most favourable rescue direction.

Able to control any induction motor

FRENIC-Lift is able to control any induction motor in the market.

Customizable logic capability

Customize your own functions with the built-in PLC function. Easily program your PLC via loader software. Create up to 200 steps program (macro steps / function blocks).

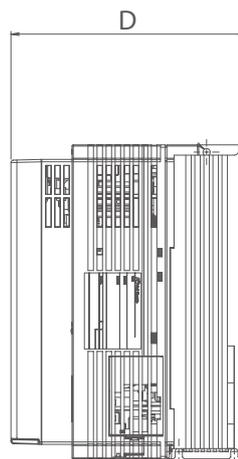
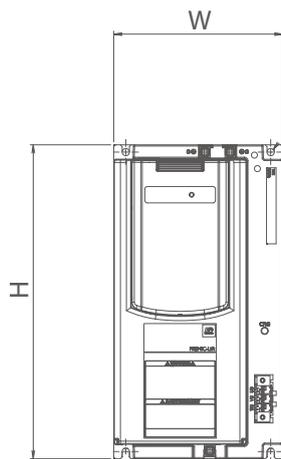
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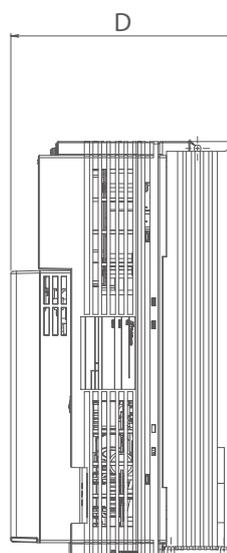
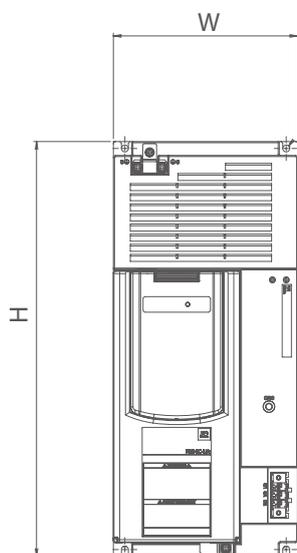
Dimensions

External Dimensions LM2C

Power Supply Voltage	Type	Applied motor current	Applied motor capacity	W (mm)	H (mm)	D (mm)
3-phase 400 VAC	FRN0010LM2C-4E	10 A	4.0 kW	140	260	195
	FRN0015LM2C-4E	15 A	5.5 kW			
	FRN0019LM2C-4E	18.5 A	7.5 kW			
	FRN0025LM2C-4E	24.5 A	11 kW			
	FRN0032LM2C-4E	32 A	15 kW	160	360	195



FRN0010LM2C-4E to
FRN0025LM2C-4E



FRN0032LM2C-4E

Specifications

Item		3-phase 400 V							
Type FRN__LM2C-4E		0010	0015	0019	0025	0032			
Nominal applied motor [kW]		4.0	5.5	7.5	11	15			
Output ratings	Rated capacity ¹ [kVA]	7.6	11	14	18	24			
	Rated voltage ² [V]	3-phase 380 to 480 VAC							
	Rated current ³ [A]	10.0	15.0	18.5	21.4 (24.5) ⁸	32.0			
	Overload capacity [A] (Permissible overload time)	18.0 (3s)	27.0 (3s)	33.3 (3s)	44.1 (3s)	57.6 (3s)			
	Rated frequency [Hz]	50, 60 Hz							
Input ratings	Main power supply	Normal operation	Phases, Voltage, Frequency	3-phase 380 to 480 VAC, 50/60 Hz Variations: Voltage: +10 to -15% (Voltage unbalance: 2% or less ⁴), Frequency: +5 to -5%					
			Rated current ⁵ [A]	with DCR	7.5	10.6	14.4	21.1	28.8
				without DCR	13	17.3	23.2	33.0	43.8
		Required power supply capacity (with DCR) [kVA]	5.2	7.4	10	15	20		
	UPS operation	Input power for driving Phases, Voltage, Frequency	1-phase 220 to 480 VAC, 50/60 Hz Variations: Voltage: +10 to -10%, Frequency: +5 to -5%						
		Operation time [s]	180						
	Battery operation	Input power for driving Voltage	48 VDC or more in the direct current voltage conversion						
		Operation time [s]	180						
		Aux. control power Voltage	24 VDC (22 to 32 VDC), Maximum 40 W						
	Braking	Braking time ⁷ [s]	60						
Braking duty-cycle (%ED) ⁷ [%]		50							
Rated regenerative power ⁷ [kW]		3.2	4.4	6.0	8.8	12			
Minimum resistance [Ω] ⁶		96	47	47	24	24			
Conformity standard		<p>Lift Directive (95/16/EC) - Replacement of two motor contactors: interrupting the current to the motor (to stop the machine), as required by EN 81-20:2014 5.9.2.5.4 d & 5.9.3.4.2 d</p> <p>Machinery Directive - EN ISO13849-1: PL-e - EN60204-1: stop category 0 - EN61800-5-2: STO SIL3 - EN62061: SIL3</p> <p>Low Voltage Directive - EN61800-5-1: Over voltage category 3</p> <p>EMC Directive - EN12015, EN12016, EN 61800-3 +A1, EN 61326-3-1 (Emission) Built-in EMC filter type: Category 2 (0025 (11kW) or lower) / Category 3 (0032 (15kW) or higher) (Immunity) 2nd Env.</p> <p>Canadian and U.S. standards - Can/CSA C22.2 No.14-13: Industrial Control Equipment - CSA C22.2 No.274-13: Adjustable speed drives - UL 508 C (3rd Edition): Power Conversion Equipment - According to CSA B44.1-11/ASME A17.5-2014: Elevator and escalator electrical equipment</p>							
Enclosure (IEC60529)		IP20 Heat sink: IP54							
Cooling method		Fan cooling							

*1) Rated capacity is calculated by regarding the output rated voltage as 440 VAC.

*2) Output voltage cannot exceed the power supply voltage.

*3) These values correspond to the following conditions: carrier frequency is 10 kHz (2 phase modulation) and ambient temperature is 45°C. Select the inverter capacity such that the square average current during operation is not higher than the 80% of the rated current of the inverter.

*4) Voltage unbalance [%] = (Max.voltage [V] - Min.voltage [V]) / Three-phase average voltage [V] x 67 (IEC61800-3). Just for 3ph 400 VAC input supply case.

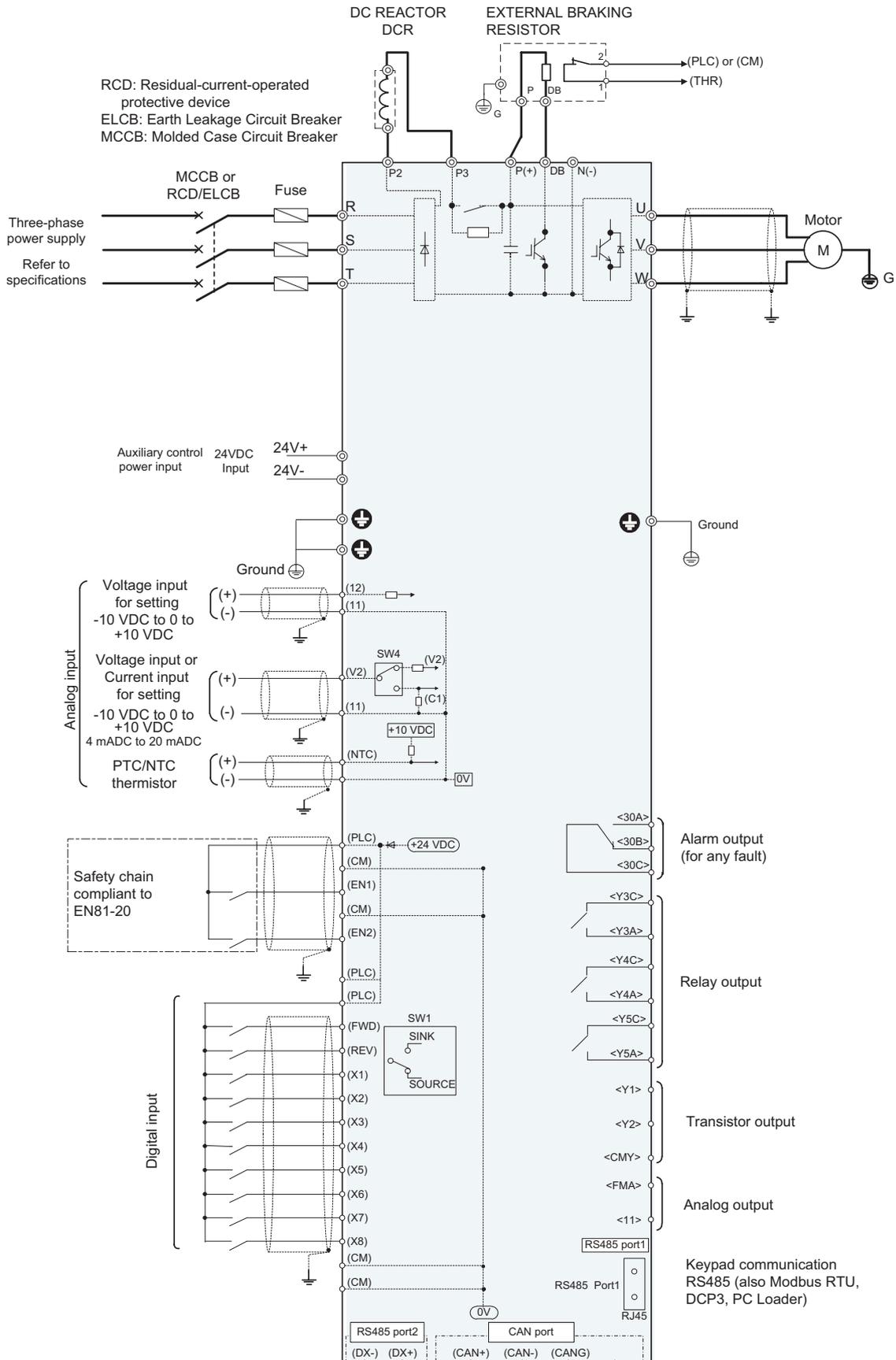
*5) The power supply capacity is 500 kVA (ten times the inverter capacity when the inverter capacity exceeds 50kVA), and the value of the power supply impedance is %X=5%.

*6) The admissible error of minimum resistance is $\pm 5\%$.

*7) Braking time and duty cycle (%ED) are defined by cycle operation at the rated regenerative power.

*8) Rated current is for 45°C, rated current in brackets corresponds to ambient temperature of 40°C.

Basic Wiring Diagrams



Options

Extra options are available to fulfill your specific requirements such as user friendly LCD keypad and dual mounting attachment to save your cabinet space.

Options LM2C

EMC Filter

External EMC filter compliant to EN12015 available.

DC Reactor

Compliant to EN12015 harmonic levels. More compact. Reduces input current.

Braking Resistor

Burns regenerated energy when the lift is in braking mode. Different braking resistors available according to lift speed and traffic.

DA-LM2

Keypad adapter for side mounting installation. Includes cable. Depending on the attachment, width and height will change.

TP-A1-LM2

Advanced LCD keypad. Intuitive and user friendly menu. Monitoring and maintenance information. Up to 3 inverter settings can be recorded in internal memory. Different speed units selectable (rpm, Hz, mm/s). Available in different languages: English, German, French, Spanish, Italian, Dutch, Russian, Greek, Turkish, Polish, Czech, Swedish, Portuguese, Chinese, Japanese and user customized language.

TP-E1U

Basic keypad with 7-segment display. Mini-USB connector included for a direct communication between FRENIC-Lift and PC loader software.

PC Loader Software

Free software for monitoring and programming FRENIC-Lift. Oscilloscope function available. Includes an application to program built-in PLC. Download for free:
www.fujielectric-europe.com

European Subsidiaries



European Headquarters (Germany)

Fuji Electric Europe GmbH
Goethering 58
63067 Offenbach/Main
Germany
Tel.: +49 69 66 90 29 0
Fax: +49 69 66 90 29 58
info.inverter@fujielectric-europe.com
www.fujielectric-europe.com

Spain

Fuji Electric Europe GmbH
Sucursal en España
C/dels Paletes 8, Edifici B, Primera Planta B
Parc Tecnològic del Vallès
08290 Cerdanyola (Barcelona)
Tel.: +34 93 58 24 333
Fax: +34 93 58 24 344
info.spain@fujielectric-europe.com
www.fujielectric-europe.com

United Kingdom

Fuji Electric Europe GmbH
UK Branch
Bedford i-Lab
Stannard Way, Priory Business Park
Bedford MK44 3RZ
Tel.: +44 1234 834 768
info.uk@fujielectric-europe.com
www.fujielectric-europe.com

Italy

Fuji Electric Europe GmbH
Filiale Italiana
Via Rizzotto 46
41126 Modena (MO)
Tel.: +39 059 47 34 266
Fax: +39 059 47 34 294
info.italy@fujielectric-europe.com
www.fujielectric-europe.com

Switzerland

Fuji Electric Europe GmbH
Swiss Branch
Rietlistraße 5
9403 Goldach
Tel.: +41 71 858 29 49
Fax: +41 71 858 29 40
info.swiss@fujielectric-europe.com
www.fujielectric-europe.com

France

Fuji Electric Europe GmbH
French Branch
265 Rue Denis Papin
38090 Villefontaine
Tel.: +33 4 74 90 91 24
Fax: +33 4 74 90 91 75
info.france@fujielectric-europe.com
www.fujielectric-europe.com

Global Headquarters (Japan)

Fuji Electric Co., Ltd.
Gate City Ohsaki East Tower
11-2 Osaki 1-chome, Shinagawa-ku,
Tokyo 141-0032, Japan
Tel.: +81 3 5435 7058
www.fujielectric.com