

INOVANCE

CS710 Crane Drive

Open & closed loop AC drive

Wide operating voltage
Three-phase 380 to 480 Vac
0.4 to 450 kW

Operation in high ambient
temperature  50°C¹

Enhanced reliability and
longer drive life span:
- Selection of high rated components
- Conformal coating suitable for 3C2
and 3S2 environments

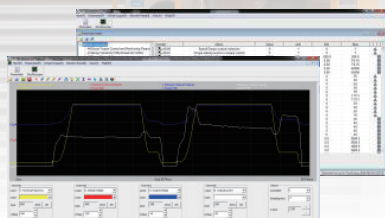
CE


LISTED
E467465
IND. CONT. EQ.

Built-in DC reactor
(400 V: 18.5 kW and above)



PC-based
software:
simplified
start up &
backup²



Features & functions

- Open loop V/F & SVC control
- Closed loop FVC control
- Starting torque
 - 150% at 0.25 Hz for SVC
 - 180% at 0 Hz for FVC
- Communication options:
 - Modbus-RTU
 - PROFIBUS-DP
 - CANopen
 - CANlink
 - PROFINET
- Slip compensation
- Simplified parameters for easy start up
- Selectable linear or S-Curve acceleration/deceleration profile
- Flexible programmable I/Os
- User programmable functions
- Variable DC-injection braking
- Comprehensive trip diagnostics
- Built-in dynamic braking unit (up to & including 75 kW)
- Dedicated functions for crane applications:
 - Brake control logic
 - Light load function
 - Electronic motorised potentiometer
 - Overload protection function
 - Pre-excitation function
 - Over travel switches inputs
 - Anti-sway function (customized version)

Through-hole mounting
options (0.4 to 160 kW)

¹ Please note: if operating above 40°C, derating is required

² PC comms kit is required (optional accessory)

General specifications

Voltage class  		Three-phase 380 to 480 Vac										
Drive model: CS710-4TxxxGx-INT		0.4GB	0.75GB	1.1GB	1.5GB	2.2GB	3.0GB	3.7GB	5.5GB	7.5GB	11GB	15GB
Frame size		T1 ^{*1}								T2	T3	T4
Drive input	Rated input voltage	Three-phase 380 to 480 Vac -15% to +10%										
	Rated input current [A]	1.8	2.4	3.7	4.6	6.3	9.0	11.4	16.7	21.9	32.2	41.3
	Rated input frequency	50/60 Hz ±5%										
Drive output	Applicable motor [kW]	0.4	0.7	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15
	Output current [A] ^{*2}	1.5	2.1	3.1	3.8	5.1	7.2	9	13	17	25	32
	Default carrier frequency [kHz]	6	6	6	5	5	4	3	3	3	3	3
	Overload capacity	150% for 60 s										
	Max. output voltage	Three-phase 380 to 480 Vac (proportional to input voltage)										
	Max. output frequency	150 Hz										
Braking resistor	Recommended power [kW]	0.2	0.35	0.55	0.75	1.1	1.5	1.8	2.7	3.7	5.5	7.5
	Minimum resistance [Ω]	96	96	96	96	64	64	32	32	32	20	20
Braking unit		Built-in										
Enclosure		IP 20										

Voltage class  		Three-phase 380 to 480 Vac										
Drive model: CS710-4TxxxGx-INT		18.5GB	22GB	30GB	37GB	45GB	55GB	75GB	90G	110G	132G	160G
Frame size		T5		T6		T7		T8			T9	
Drive input	Rated input voltage	Three-phase 380 to 480 Vac -15% to +10%										
	Rated input current [A]	49.5	59	57	69	89	106	139	164	196	240	287
	Rated input frequency	50/60 Hz ±5%										
Drive output	Applicable motor [kW]	18.5	22	30	37	45	55	75	90	110	132	160
	Output current [A] ^{*2}	37	45	60	75	91	112	150	176	210	253	304
	Default carrier frequency [kHz]	6	6	6	5	5	4	3	3	3	3	3
	Overload capacity	150% for 60 s										
	Max. output voltage	Three-phase 380 to 480 Vac (proportional to input voltage)										
	Max. output frequency	150 Hz										
Braking resistor	Recommended power [kW]	9	11	15	18	22	27	37	45	55	66	80
	Minimum resistance [Ω]	24	24	19.2	14.8	12.8	9.6	6.8	2.5	2.5	2.5	2.5
Braking unit		Built-in							MDBUN-200-5T			
Enclosure		IP20										

*1 0.75/1.5/2.2/3.7/5.5 kW are the preferred stocking ratings. To learn more, please get in touch with your local Invince representative.

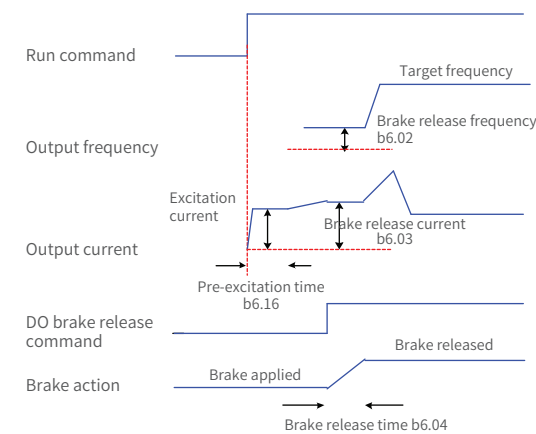
*2 Rated output current at default carrier frequency.

General specifications

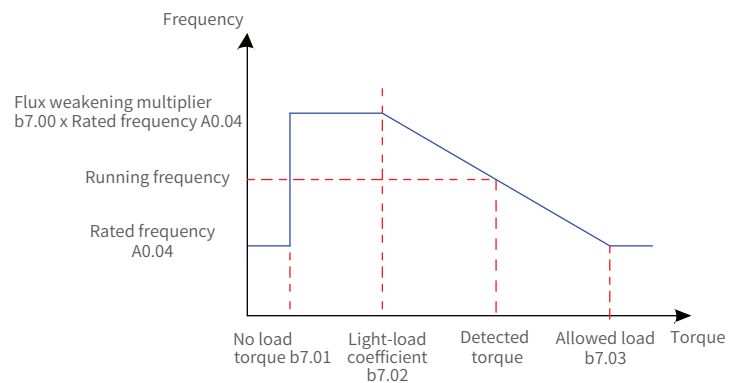
Voltage class  		Three-phase 380 to 480 Vac						
Drive model: CS710-4TxxxG-INT ^{*1}		200G	220G	250G	280G	315G	355G	400G
Frame size		T9	T3	T11	T11	T11	T12	T12
Drive input	Rated input voltage	Three-phase 380 to 480 Vac -15% to +10%						
	Rated input current [A]	365	410	441	495	565	615	687
	Rated input frequency	50/60 Hz ±5%						
Drive output	Applicable motor [kW]	200	220	250	280	315	355	400
	Output current [A] ^{*2}	377	426	465	520	585	650	725
	Default carrier frequency [kHz]	1.0-6.0 kHz						
	Overload capacity	150% for 60 s						
	Max. output voltage	Three-phase 380 to 480 Vac (proportional to input voltage)						
	Max. output frequency	500 Hz						
Braking resistor	Recommended power [kW]	50 x2	55 x2	63 x2	70 x2	80 x2	60 x3	67 x3
	Minimum resistance [Ω]	2.5 x2	2.5 x2	2.5 x2	2.5 x2	2.5 x2	2.5 x3	2.5 x3
Braking unit		MDBUN-200-5T x2					MDBUN-200-5T x3	
Enclosure		IP 00						

*1 For the standard AC drive, we recommend motor cable lengths to be <100 m. Where your installation exceeds 100 m, the “-L” version is an option with a built-in AC output reactor (1% voltage drop) which can help to overcome the effects of long cable installations. To discuss your application, contact your local Inovance representative.

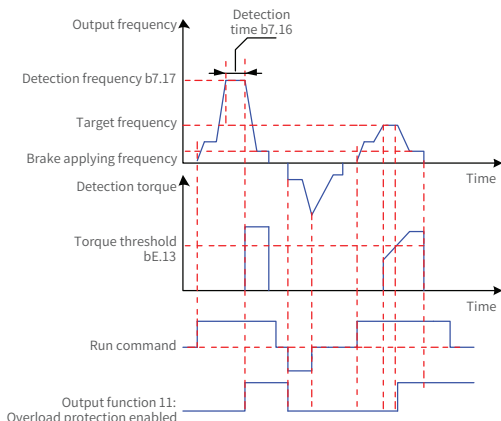
*2 Rated output current at default carrier frequency.



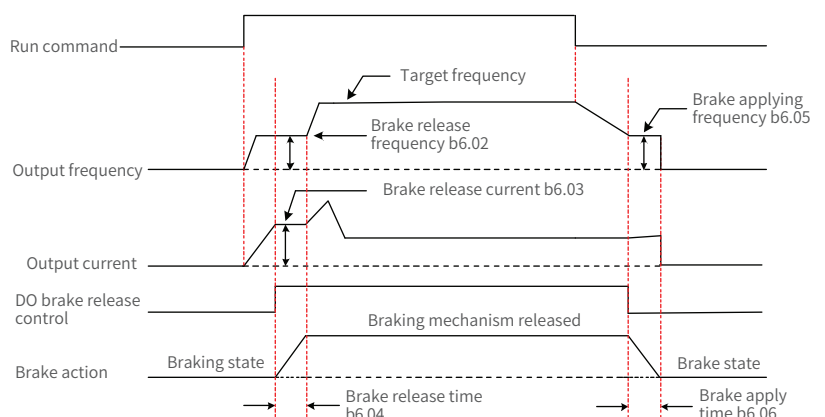
Pre-excitation function



Light load function

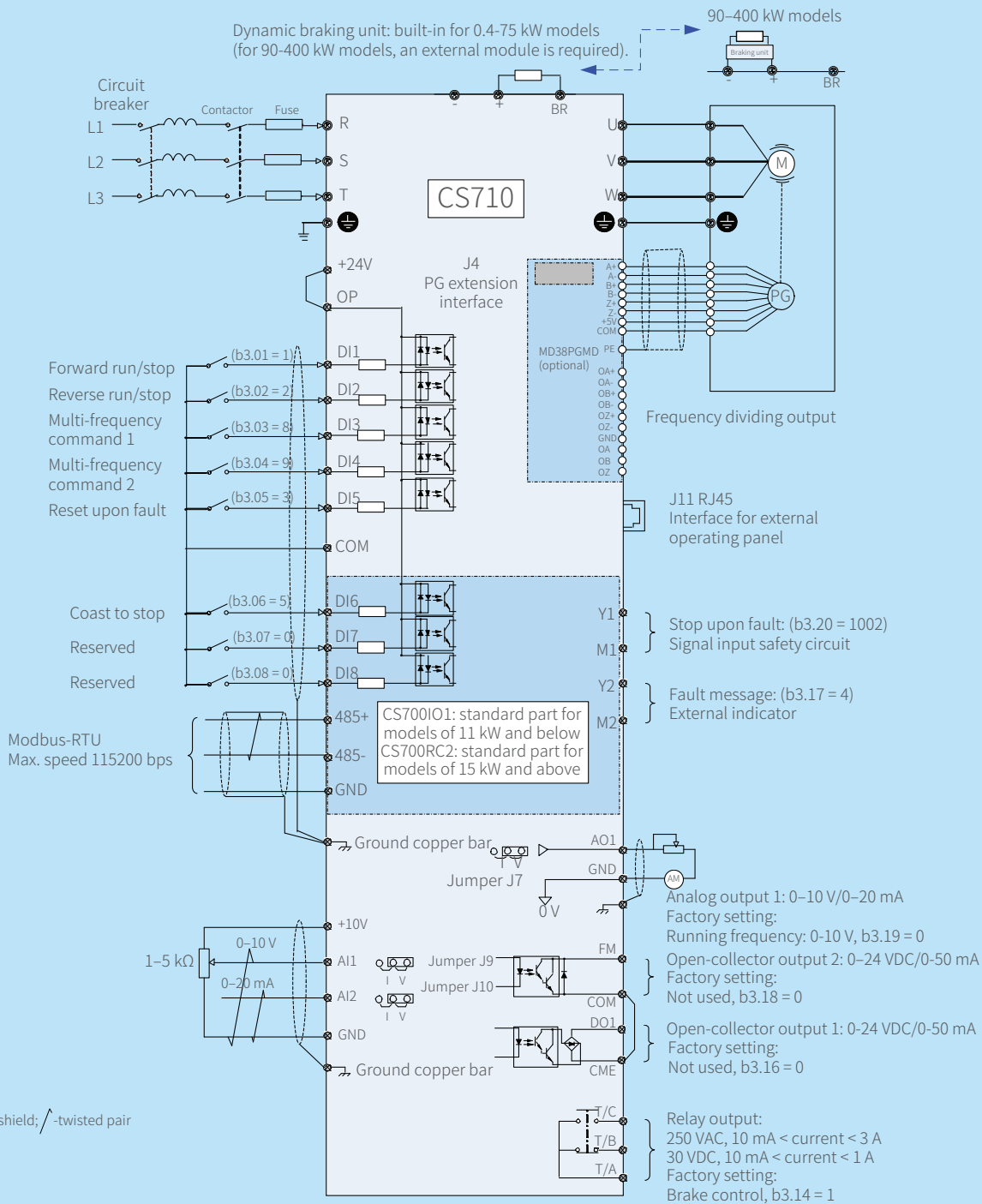


Overload protection



Brake control logic

Typical system connection diagram



Typical applications



Construction hoist



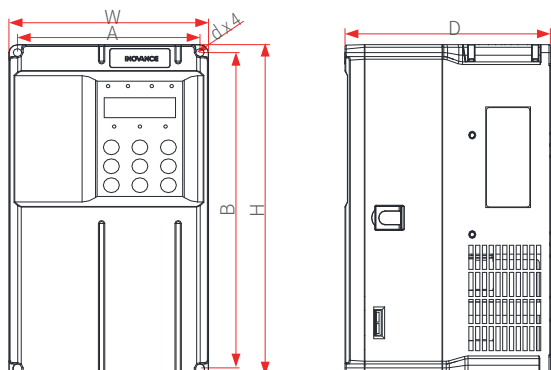
Overhead crane



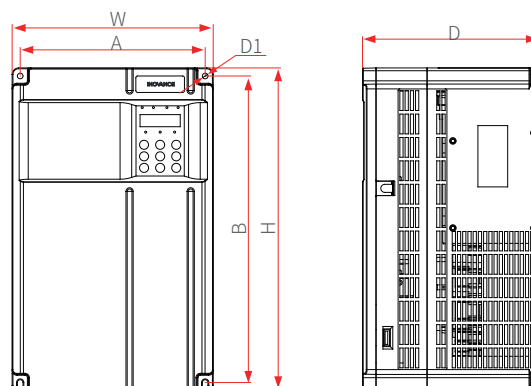
Gantry crane

Dimensions

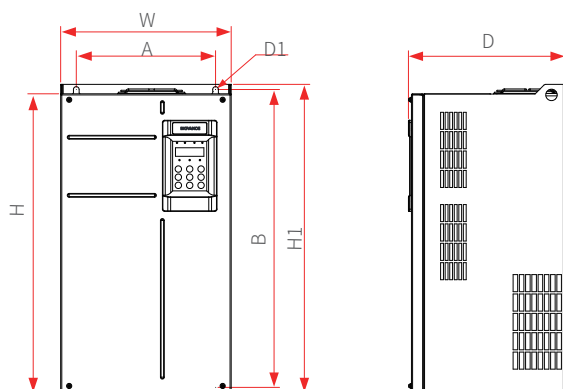
CS710-4T0.4GB to CS710-4T15GB



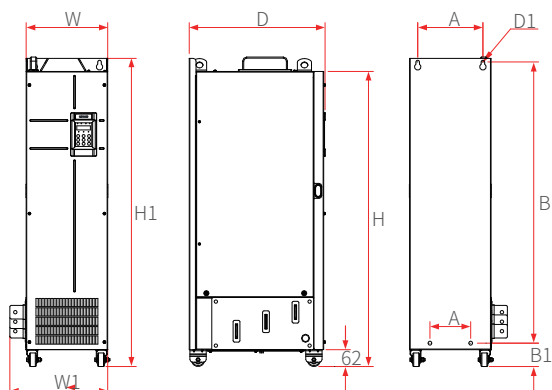
CS710-4T18.5GB to CS710-4T37GB



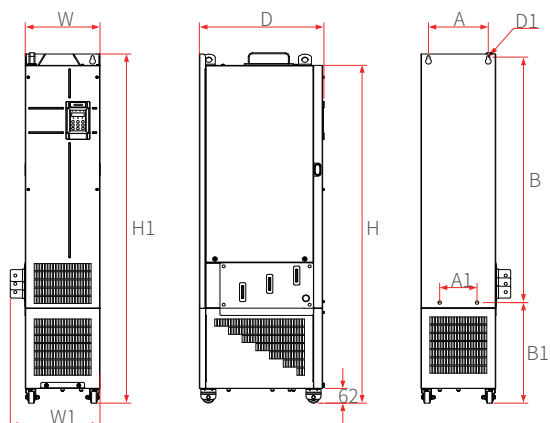
CS710-4T45GB to CS710-4T160G



CS710-4T200G to CS710-4T400G

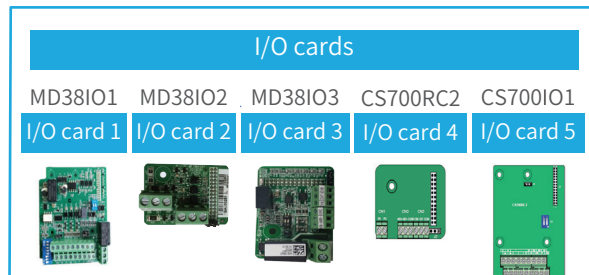


CS710-4T200G-L to CS710-4T400G-L (built-in output reactor)

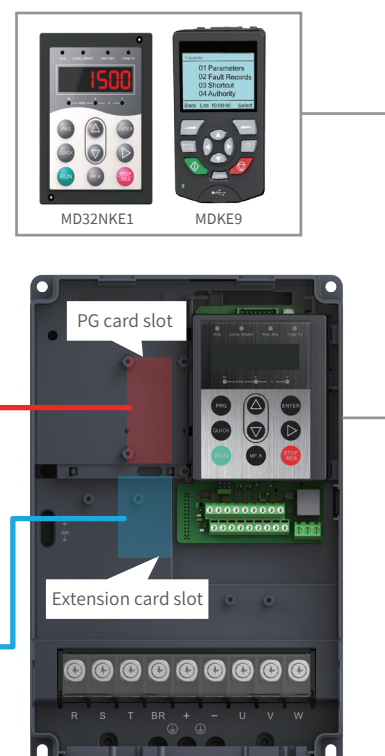
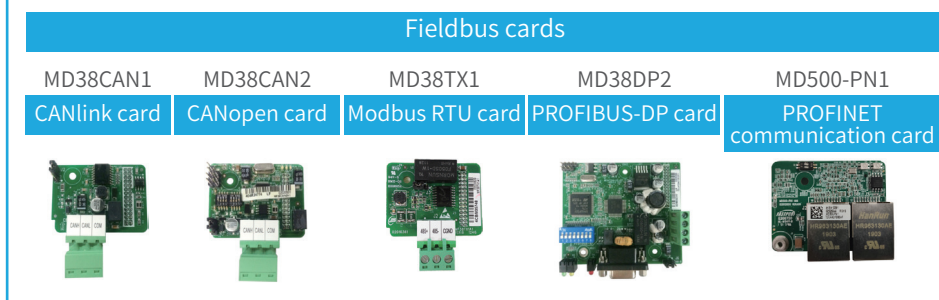


CS710 model	Model size	Dimensions (mm)										Mass (kg)
		A	A1	B	B1	H	H1	W	W1	D	D1	
CS710-4T0.4GB, CS710-4T0.7GB, CS710-4T1.1GB	T1	119	/	189	/	200	/	130	/	152	Ø5	1.6
CS710-4T1.5GB, CS710-4T2.2GB, CS710-4T3.0GB	T1	119	/	189	/	200	/	130	/	152	Ø5	1.6
CS710-4T3.7GB, CS710-4T5.5GB	T1	119	/	189	/	200	/	130	/	162	Ø5	2.0
CS710-4T7.5GB, CS710-4T11GB	T2	128	/	238	/	250	/	140	/	170	Ø6	3.3
CS710-4T15GB	T3	166	/	266	/	280	/	210	/	192	Ø6	3.1
CS710-4I18.5GB, CS710-4T22GB	T5	195	/	335	/	350	/	210	/	192	Ø6	9.1
CS710-4T30GB, CS710-4T37GB	T6	230	/	380	/	400	/	250	/	220	Ø7	17.5
CS710-4T45GB, CS710-4T55GB	T7	245	/	523	/	525	542	300	/	275	Ø10	35
CS710-4T75GB, CS710-4T90G, CS710-4T110G	T8	270	/	560	/	554	580	338	/	315	Ø10	51.5
CS710-4T132G, CS710-4T160G	T9	320	/	890	/	874	915	400	/	320	Ø10	85
CS710-4T200G, CS710-4T220G	T10	240	150	1035	86	1086	1134	300	360	500	Ø13	110
CS710-4T200G-L, CS710-4T220G-L		240	150	1035	424	1424	1472	300	360	500	Ø13	160
CS710-4T200G, CS710-4T280G	T11	225	185	1175	97	1248	1248	330	390	545	Ø13	155
CS710-4T250G-L, CS710-4T280G-L		225	185	1175	437	1586	1622	330	390	545	Ø13	215
CS710-4T315G, CS710-4T355G, CS710-4T400G, CS710-4T400G	T12	240	200	1280	101	1255	1405	340	400	545	Ø16	185
CS710-4T31G-L, CS710-4T355G-L, CS710-4T400G-L		240	200	1280	432	1683	1733	340	400	545	Ø16	245

Extension cards and mounting position



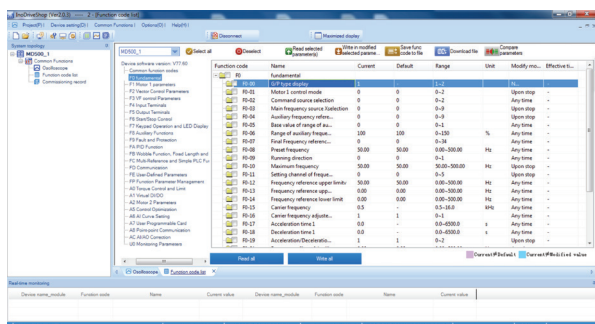
Please note: CS700RC2 is the standard for models of 15 kW & above
CS700IO1 is the standard for models of 11 kW & below



PC software tools

InoDriveShop

InoDriveShop is Inovance's PC-based software offering. It is based on a familiar Windows interface. InoDriveShop can upload and download drive parameters, and features a variety of other functions, such as a real-time oscilloscope



Parameter uploading/downloading



Multi-drive, multi-channel oscilloscope

Accessories list

Category	Model	Function description	Suitable for
External braking units	MDBUN-60-2T	External braking unit, rated current 60 A, for supply input voltage 200 to 240 Vac AC drives.	2T models: 45G - 55G
	MDBUN-200-5T	External braking unit, rated current 200 A, for supply input voltage 380 to 480 Vac AC drives.	T models: 200G - 450G
	MDBUN-60-5T	External braking unit, rated current 60 A, for supply input voltage 380 to 480 Vac AC drives.	T models: 90G - 110G
	MDBUN-90-5T	External braking unit, rated current 90 A, for supply input voltage 380 to 480 Vac AC drives.	T models: 132G - 160G
	MD32NKE1	Remote LED keypad. Includes MDCAB cable.	All
Keypads	MDKE9	Remote LCD keypad. For parameter programming and monitoring, data copy (for various MD series). Includes MDCAB cable.	All
	MDCAB	3 meter connecting cable for remote keypad (spare unit).	All
	MDCAB-1.5	1.5 meter connecting cable for remote keypad (spare unit).	All
I/O cards	MD38IO1	I/O extension card 1, provides: 5x DI, 1x AI, 1x relay output, 1x DO, 1x AO, Modbus-RTU and CANlink.	Frame sizes T4-T12 (15 kW and above)
	MD38IO2	I/O extension card 2, provides 3x extra DI terminals.	All
	MD38IO3	I/O extension card 3, provides 3x DI, 1x relay output, Modbus-RTU interface.	All
	CS700RC2	Crane dedicated I/O extension card, provides 3x DI, 3x relay output, 1 RS485 Modbus-RTU interface.	Included as standard for models of 15 kW and above
	CS700IO1	Crane dedicated I/O extension card, provides 2x DI, 1x relay output, 1 RS485 Modbus-RTU interface.	Included as standard for models of 11 kW and below
Fieldbus	MD38CAN1	CANlink bus card, supports only CANlink.	All
	MD38CAN2	CANopen bus card, supports only CANopen.	All
	MD38TX1	Modbus-RTU communication card.	All
	MD38DP2	PROFIBUS-DP communication card.	Frame sizes T4-T12
	MD500-PN1	PROFINET communication card.	All
PG cards	MD38PG4	Interface card for resolver (10 kHz excitation) with DB9 connector.	All
	MD38PGMD	Multifunctional encoder card, compatible with differential, open-collector and push-pull encoder types. Supports differential output and open-collector output.	All
PC comms kit	MDPKIT02	PC comms kit.	All
Mounting brackets	MD500-AZJ-A1T1	Through hole mounting bracket - MD290/MD500 for frame T1.	Frame size T1
	MD500-AZJ-A1T2	Through hole mounting bracket - MD290/MD500 for frame T2.	Frame size T2
	MD500-AZJ-A1T3	Through hole mounting bracket - MD290/MD500 for frame T3.	Frame size T3
	MD500-AZJ-A1T4	Through hole mounting bracket - MD290/MD500 for frame T4.	Frame size T4
	MD500-AZJ-A1T5	Through hole mounting bracket - MD290/MD500 for frame T5.	Frame size T5
	MD500-AZJ-A1T6	Through hole mounting bracket - MD290/MD500 for frame T6.	Frame size T6
	MD500-AZJ-A1T7	Through hole mounting bracket - MD290/MD500 for frame T7.	Frame size T7
	MD500-AZJ-A1T8	Through hole mounting bracket - MD290/MD500 for frame T8.	Frame size T8
	MD500-AZJ-A1T9	Through hole mounting bracket - MD290/MD500 for frame T9.	Frame size T9
Guide rails	MD500-AZJ-A3T10	Guide rails for inserting in/ extracting from the cabinet - frame sizes T10 to T12.	Frame sizes T10-T12

Driven by Technology

AC Drives



AC MultiDrives



MV Drives



Single-Axis Servos



Multi-Axis Servos



Robotics & Motion Controllers



PLCs & HMIs



CNC Machine Tool Solutions



Elevator Drives



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