

MD810 Series - AC MultiDrives 400 V

For multi-sectional drives applications

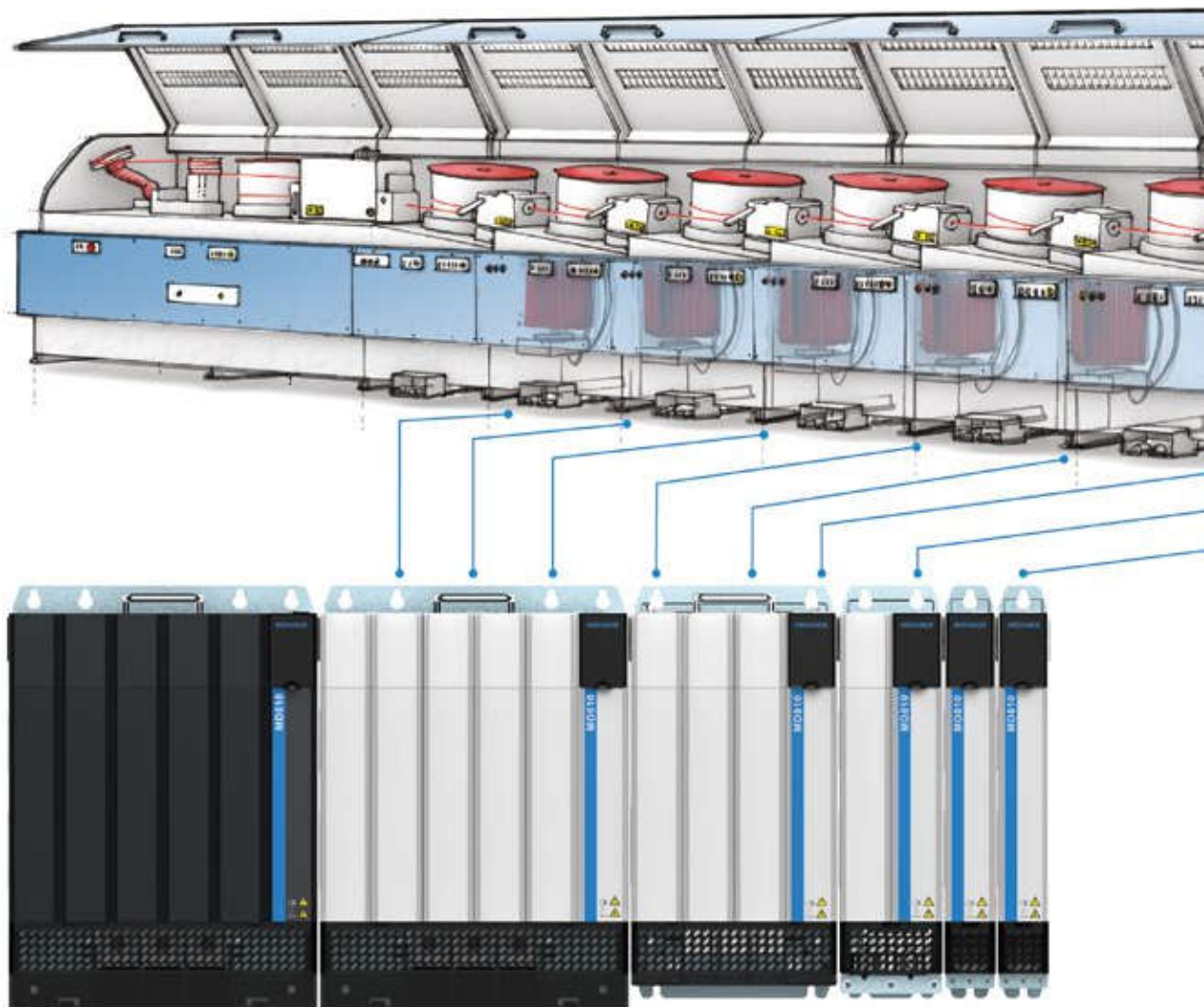
- Open and closed loop control
- For induction and permanent magnet synchronous motors
- Single drive modules: 1.5 to 160 kW
- Dual drive modules: 1.5 to 18.5 kW



MD810 features and functions

Designed for sectional applications

MD810 is a modular, scalable, easy-to-use product designed for industrial applications requiring complex multidrive systems.

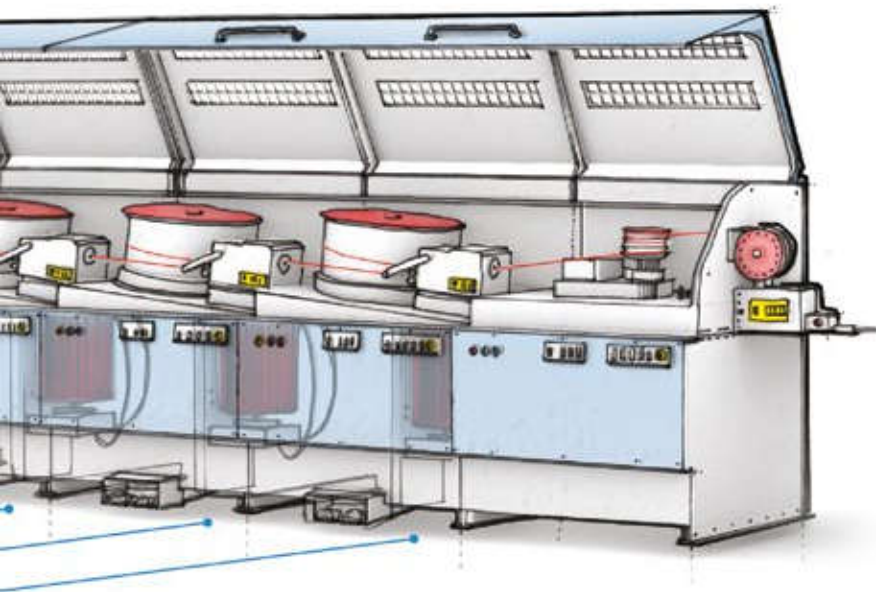


Combined with a common rectifier, MD810 forms a multidrive system for complex sectional machines, such as wire drawing, metal processing, calender, textile and chemical fiber machinery.

MD810 offers a modular design and a common frame size, making it scalable and easy to use.

For machines requiring multi-axis servo control, MD810 was designed to work seamlessly with the IS810 servo drive, which matches the common frame size.

Peer-to-Peer functionality is included on the drive as standard and includes speed/position control, load sharing, droop control, and tension control.



- ✓ Reduced installation costs
- ✓ Energy saving
- ✓ Functional safety - STO SIL3
- ✓ Easy & flexible integration
- ✓ Multiple control modes
- ✓ Advanced functionality
- ✓ Easy commissioning & maintenance
- ✓ Designed to be durable



Plastics



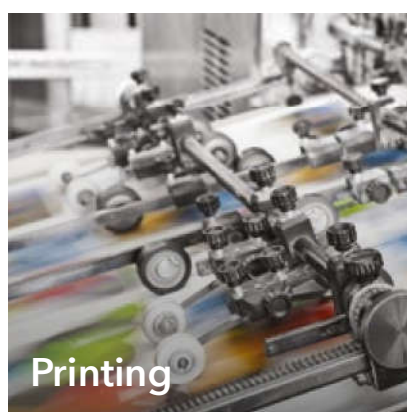
Metals



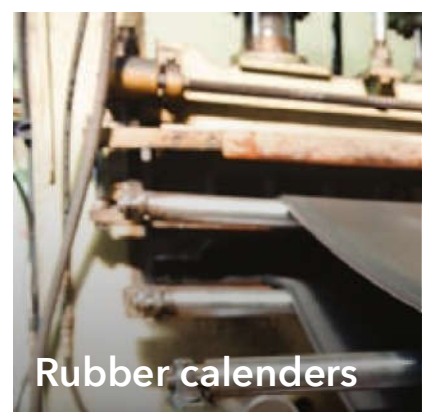
Textiles



Paper



Printing



Rubber calenders

MD810 features and functions

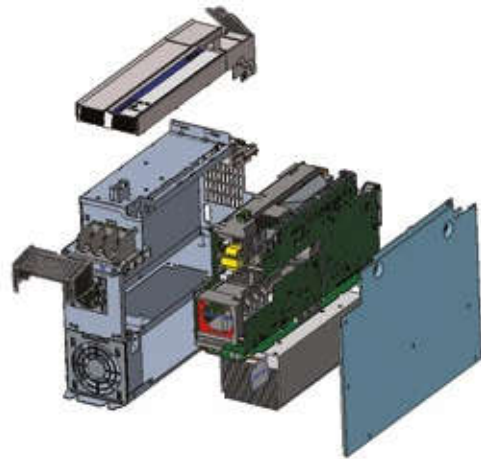
Fast, installation and commissioning | Easy maintenance | Durability | Energy savings | Reduced cabinet size | Fewer external components

Energy Savings

- Common DC bus configuration allows sharing of regenerated energy
- Centralized braking design enables braking energy to be reused

Durability in harsh environments

- Class 3C2 conformal coating
- Separate cooling channel for heatsink prevents dust contamination of internal PCBs
- Applicable ambient temperature range
 - Operation: -10 - 50°C
 - Storage: -25 - 70°C
- Humidity range of 5%-95% (60% in case of corrosive gas)
- Cost-effective, built-in DC reactors for smooth current flow and reduced harmonic distortion
- Overload: 150% (for 60 s); 178% (for 2 s)



MD810 is designed to perform in the harshest of industrial environments

Easy maintenance

- Common sizes for each power segment enables fewer inventory components to be stored in customer warehouses
- DC soft charge module enables drive to be independently powered on or off
- Built in redundancy: if one rectifier fails, the system can continue operation with reduced capacity (reduced speed and/or load)
- PLC/HMI/drive software configured through the same network for simple maintenance and lower maintenance costs
- Software integrates all steps for commissioning, diagnostics & maintenance

Reduced cabinet size

- Improved power efficiency results in a smaller cabinet due to reduced rectifier capacity and reduced braking units
- Through-hole mounting further reduces cabinet size/volume
- Compact "2 in 1" dual drive module available for ratings from 1.5 to 18.5 kW



Fast, easy installation and commissioning

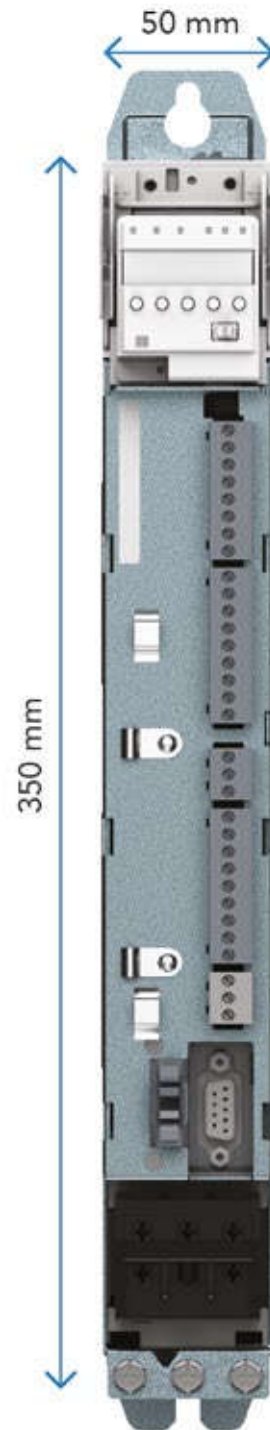
- Simple, plug & play module installation
 - DC bus connection accessible from the front for easy module installation
 - Safe Torque Off (STO) function eliminates need for output contactors
 - Fewer specialist workers required for installation
 - Rapid module replacement when needed
- One-click network connection with InoDriveShop (see p8)
- Optimized wiring and commissioning
 - One PLC connection cable
 - One group of input power cables
 - One remote keypad with one cable connects to multiple drives
- Fewer external components: built-in mini bus bars and common DC bus configuration enables elimination of external supply components (individual protections, braking units and resistors)
- Compatible with open communication fieldbuses like PROFINET, PROFIBUS DP and CANopen

MD810 features and functions

MD810 is a multidrive system for induction and PMS motors.

- Control modes:
 - V/f for open loop induction motors
 - SVC for open loop induction and PMS motors
 - FVC for closed loop induction and PMS motors
- Capacity range: 1.5-160 kW (1.5-18.5 kW for dual drive "2 in 1" modules)
- 3 ph 380-480 VAC voltage supply range
- TN and TT supply
- 24 V auxiliary control supply
- Maximum output frequency 500 Hz
- IP20 (IP00 for 355 kW power supply)
- Built-in dynamic brake (for 22 & 45 kW rectifiers)
- Built-in English language LED keypad
 - Optional remote keypad with 8 GB SD card
 - Only one keypad needed for multiple drives
 - Parameter copying capability
- Static and dynamic autotuning
- Second PID control for external devices

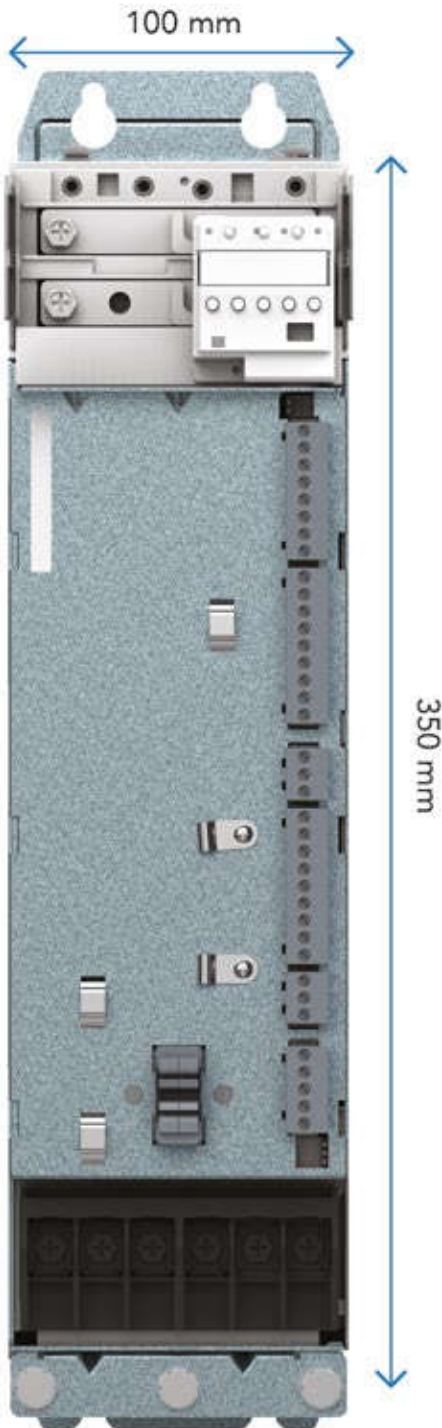
Size 1 dual drive module
- front covers removed



Size 1
dual ratings available:
1.5, 2.2, 3.7 & 5.5 kW

Size 2 dual drive module

- front covers removed



Size 2
dual ratings available:
 7.5, 11, 15 & 18.5 kW

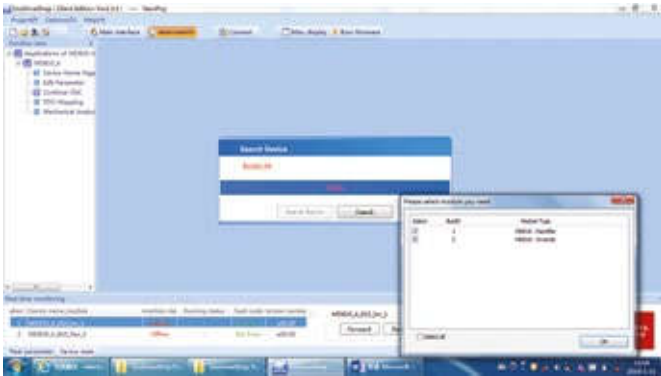
- Range of peer to peer control modes:
 - Speed/position control
 - Load distribution control
 - Droop control
 - Tension control
- Center winder/unwinder functionality
- Textile wobble control included as standard
- Communication protocols:
 - Modbus-RTU
 - CANopen
 - CANlink
 - PROFIBUS DP
 - PROFIBUS DP-to-CANopen gateway
 - PROFINET-to-CANopen gateway
- PSU unit available from 22 to 355 kW
- Switching frequency up to 12 kHz
- Safe Torque Off (STO) SIL3 (EN 61800-5-2)
- Feedback technologies supported:
 - Resolver
 - ABZ incremental encoders
 - 23 bit serial encoder - unique proprietary Inovance product



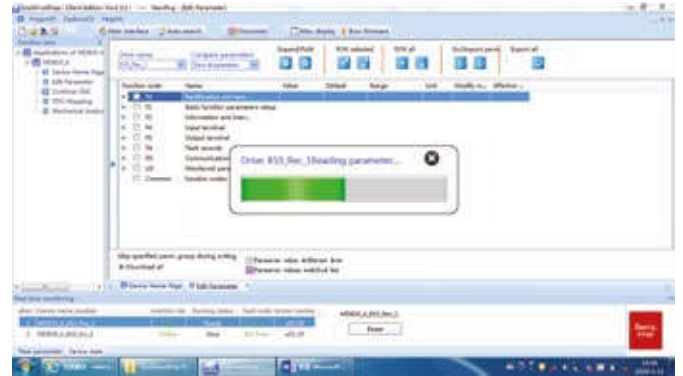
PC Software Tools

InoDriveShop

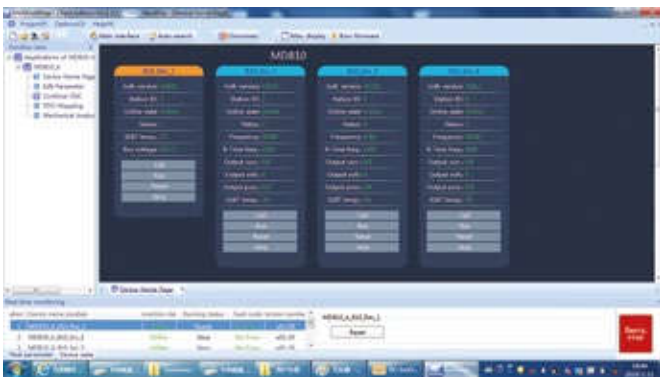
InoDriveShop is Inovance's PC-based software offering. It is based on a familiar Windows™ interface. InoDriveShop can upload and download drive parameters, and features a variety of other functions, such as a real-time oscilloscope.



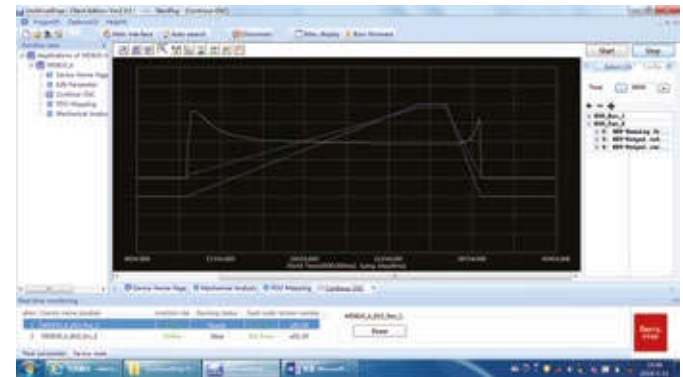
One key module scanning



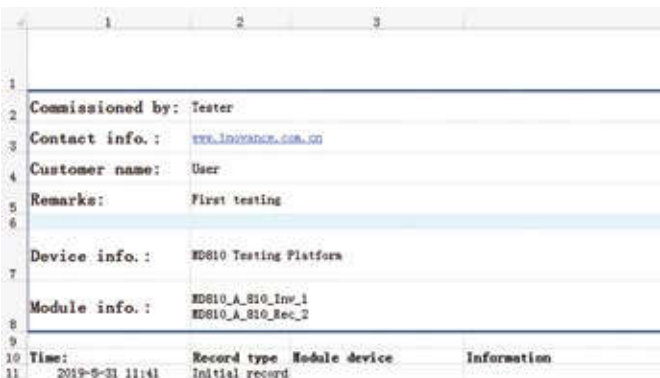
Parameter uploading/downloading in batches



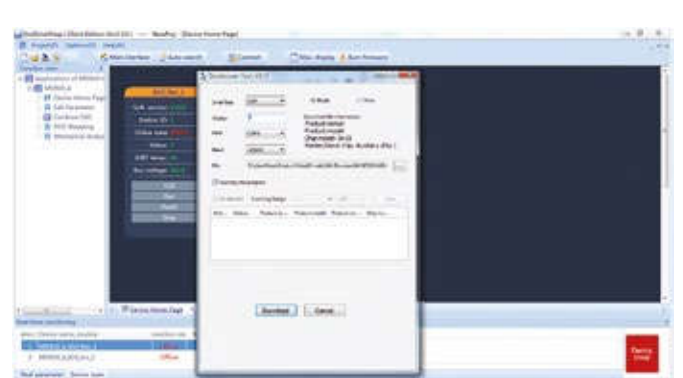
Visualisation of modules' status



Multi-drive, multi channel oscilloscope



Commissioning record



Online software upgrade

✓ PROFIBUS DP communication settings are also available

MD810 Series Technical Data



Product Ordering Code

MD810 - 20M 4T 45 G 1 0 0

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① AC drive series
- ② **Module type:**
20M: rectifier
50M: drive
- ③ **Voltage supply:**
4T: 380–480 V
- ④ **Rectifier (rated power):** Drive (motor power)
22: 22 kW
45: 45 kW
110: 110 kW
160: 160 kW
355: 355 kW
Single-drive ID:
7.5: 7.5 kW
37: 37 kW
Double-drive ID:
D1.5: 1.5 kW
D5.5: 5.5 kW
- ⑤ **Model**
G: general model
- ⑥ **Optional functional component**
Rectifier:
0: without built-in brake
1: with built-in brake (22 & 45 kW only)
Drive:
2: built-in differential PG card
3: built-in 23 bit absolute PG card
4: built-in resolver + frequency division card
- ⑦ **Optional communication component**
Rectifier:
0: built-in RS485 (Modbus-RTU), CANopen and CANlink communications
1: built-in CANopen, CANlink, PROFIBUS-DP and PROFIBUS DP gateway to CANopen communications
2: built-in RS485 (Modbus-RTU), CANopen, CANlink and PROFINET gateway to CANopen communications
Drive:
0: built-in RS485 (Modbus-RTU), CANopen and CANlink communications
1: built-in CANopen, CANlink and PROFIBUS-DP communications
- ⑧ **Optional features**
Drive:
0: no optional features
1: built-in STO
Rectifier:
0: no optional features available

MD810 Ratings

Single drives

Drive Unit Model	Rated Power (kW)	Input DC current (A)	Output AC current (A)
537–679 VDC (working range: 350–800 VDC) Output voltage: 0–480 VAC			
MD810-50M4T1.5GXXX	1.5	4.9	3.8
MD810-50M4T2.2GXXX	2.2	7	5.1
MD810-50M4T3.7GXXX	3.7	12	9
MD810-50M4T5.5GXXX	5.5	17	13
MD810-50M4T7.5GXXX	7.5	22	17
MD810-50M4T11GXXX	11	31	25
MD810-50M4T15GXXX	15	40	32
MD810-50M4T18.5GXXX	18.5	46	37
MD810-50M4T22GXXX	22	55	45
MD810-50M4T30GXXX	30	73	60
MD810-50M4T37GXXX	37	90	75
MD810-50M4T45GXXX	45	105	91
MD810-50M4T55GXXX	55	129	112
MD810-50M4T75GXXX	75	172	150
MD810-50M4T90GXXX	90	294	184
MD810-50M4T110GXXX	110	358	224
MD810-50M4T132GXXX	132	420	262
MD810-50M4T160GXXX	160	474	296

Dual drives

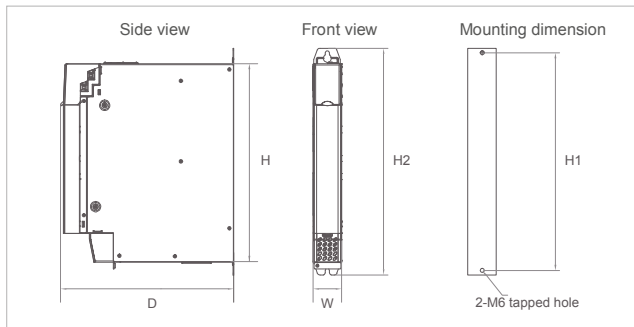
Drive Unit Model	Rated Power (kW)	Input DC current (A)	Output AC current (A)
537–679 VDC (working range: 350–800 VDC) Output voltage: 0–480 VAC			
MD810-50M4TD1.5GXXX	1.5	10	3.8
MD810-50M4TD2.2GXXX	2.2	14	5.1
MD810-50M4TD3.7GXXX	3.7	24	9
MD810-50M4TD5.5GXXX	5.5	34	13
MD810-50M4TD7.5GXXX	7.5	44	17
MD810-50M4TD11GXXX	11	62	25
MD810-50M4TD15GXXX	15	80	32
MD810-50M4TD18.5GXXX	18.5	92	37

Rectifiers

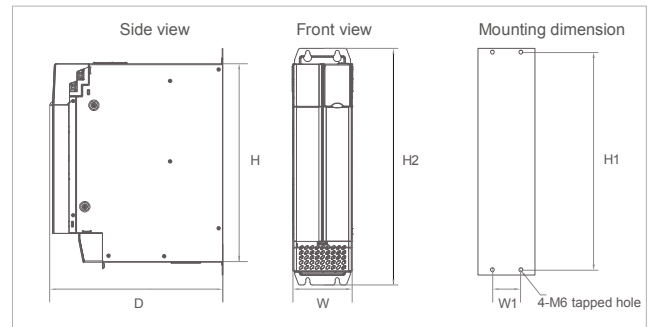
Rectifier Unit Model	Rated Power (kW)	Input AC current (A)	Output DC current (A)	Braking Unit
380–480 VAC (working range: 323–528 VAC) Output voltage: 537–679 VDC				
MD810-20M4T22GXXX	22	59	56	Built-in
MD810-20M4T45GXXX	45	112	110	Built-in
MD810-20M4T110GXXX	110	196	240	MDBUN-60-(5)T*2
MD810-20M4T160GXXX	160	292	358	MDBUN-90-(5)T*2
MD810-20M4T355GXXX	355	619	759	MDBUN-200-C/B*3

Overview of MD810 Series AC Drives

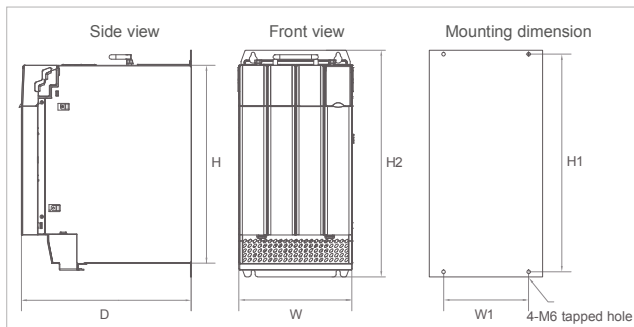
Dimensions of Single Drive Units



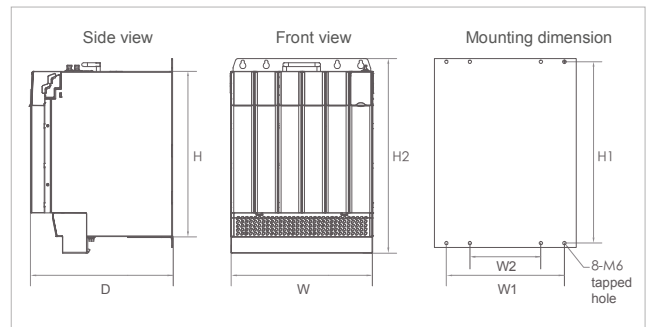
Drive Unit Model (S1)	Physical Dimensions (mm)				Mounting Hole (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T1.5GXXX	400	350	50	305	-	-	384	Φ7	3.8
MD810-50M4T2.2GXXX	400	350	50	305	-	-	384	Φ7	3.8
MD810-50M4T3.7GXXX	400	350	50	305	-	-	384	Φ7	3.8
MD810-50M4T5.5GXXX	400	350	50	305	-	-	384	Φ7	4
MD810-50M4T7.5GXXX	400	350	50	305	-	-	384	Φ7	4



Drive Unit Model (S2)	Physical Dimensions (mm)				Mounting Hole (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T11GXXX	400	350	100	305	50	-	384	Φ7	7.5
MD810-50M4T15GXXX	400	350	100	305	50	-	384	Φ7	7.5
MD810-50M4T18.5GXXX	400	350	100	305	50	-	384	Φ7	8
MD810-50M4T22GXXX	400	350	100	305	50	-	384	Φ7	8.5
MD810-50M4T30GXXX	400	350	100	305	50	-	384	Φ7	9.4
MD810-50M4T37GXXX	400	350	100	305	50	-	384	Φ7	9.4

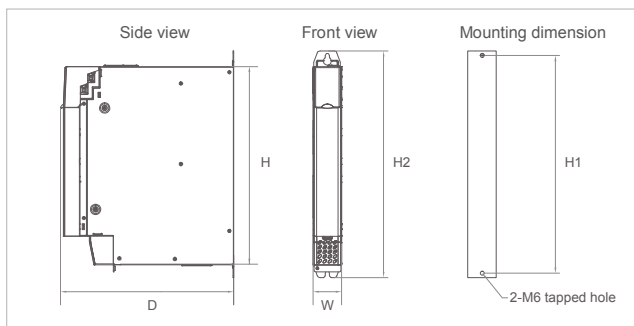


Drive Unit Model (S3)	Physical Dimensions (mm)				Mounting Hole (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T45GXXX	400	350	200	305	150	-	384	Φ7	18.4
MD810-50M4T55GXXX	400	350	200	305	150	-	384	Φ7	18.4
MD810-50M4T75GXXX	400	350	200	305	150	-	384	Φ7	19.5

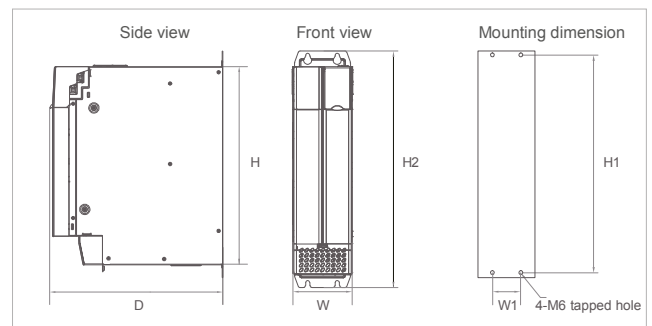


Drive Unit Model (S4)	Physical Dimensions (mm)				Mounting Hole (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4T90GXXX	400	350	300	305	250	150	384	Φ7	38
MD810-50M4T110GXXX									
MD810-50M4T132GXXX									
MD810-50M4T160GXXX									
MD810-50M4T160GXXX									

Dimensions of Dual Drive Units

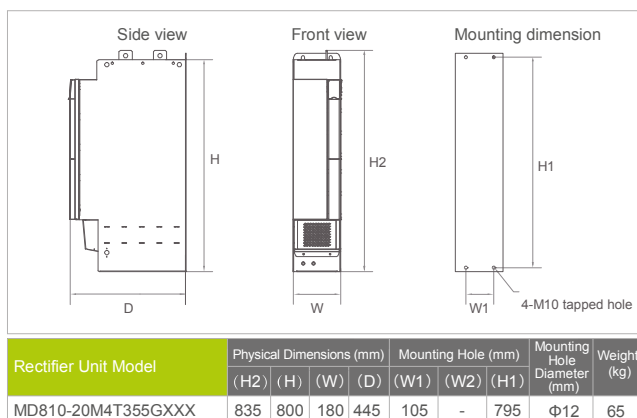
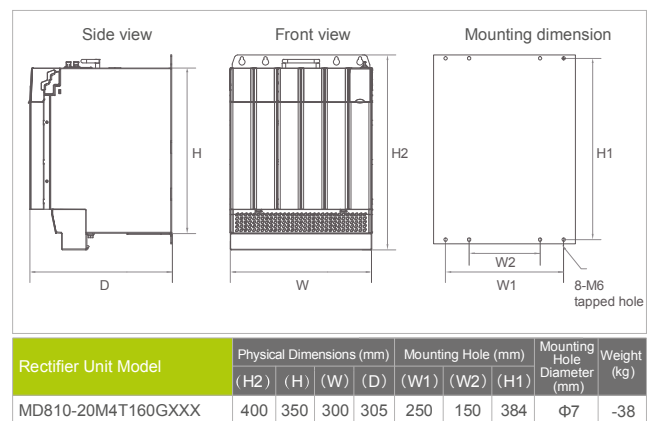
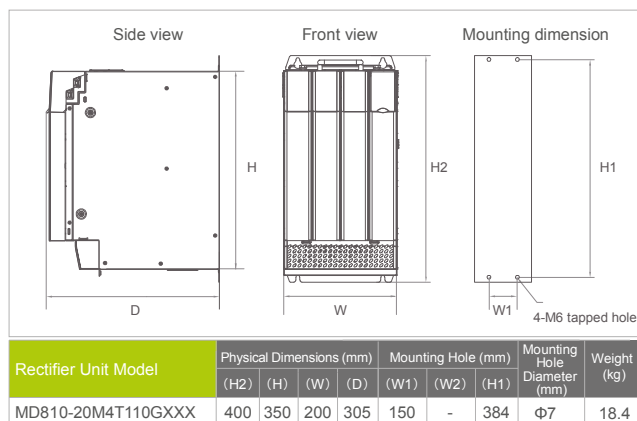
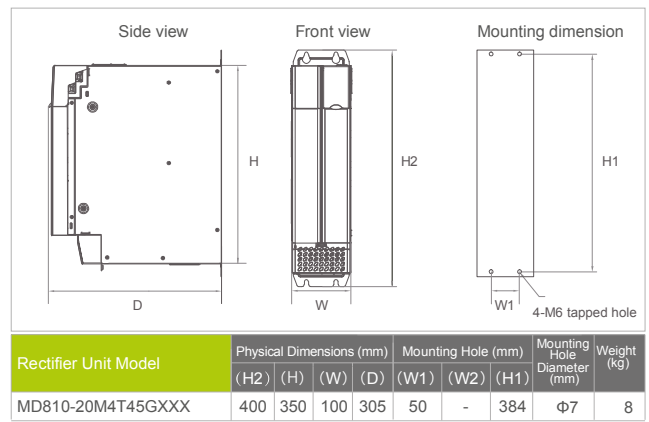
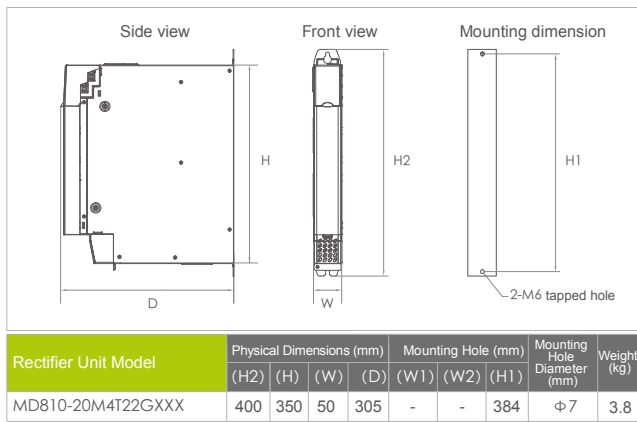


Drive Unit Model (S1)	Physical Dimensions (mm)				Mounting Hole (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4TD1.5GXXX	400	350	50	305	-	-	384	Φ7	4.5
MD810-50M4TD2.2GXXX	400	350	50	305	-	-	384	Φ7	4.5
MD810-50M4TD3.7GXXX	400	350	50	305	-	-	384	Φ7	4.5
MD810-50M4TD5.5GXXX	400	350	50	305	-	-	384	Φ7	4.5



Drive Unit Model (S2)	Physical Dimensions (mm)				Mounting Hole (mm)			Mounting Hole Diameter (mm)	Weight (kg)
	(H2)	(H)	(W)	(D)	(W1)	(W2)	(H1)		
MD810-50M4TD7.5GXXX	400	350	100	305	50	-	384	Φ7	9.5
MD810-50M4TD11GXXX	400	350	100	305	50	-	384	Φ7	9.5
MD810-50M4TD15GXXX	400	350	100	305	50	-	384	Φ7	9.5
MD810-50M4TD18.5GXXX	400	350	100	305	50	-	384	Φ7	9.5

Dimensions of Rectifier Units



Option	Applicable model
External LCD keypad	All drives
External power terminals	Single drives: from MD810-50M4T1.5GXXX to MD810-50M4T160GXXX
	Dual drives: from MD810-50M4TD1.5GXXX to MD810-50M4TD18.5GXXX
	Rectifiers: from MD810-20M4T22GXXX to MD810-20M4T355GXXX
Network cables	Single drives: from MD810-50M4T1.5GXXX to MD810-50M4T160GXXX
	Dual drives: from MD810-50M4TD1.5GXXX to MD810-50M4TD18.5GXXX
	Rectifiers: from MD810-20M4T22GXXX to MD810-20M4T355GXXX
External keypad cable (3 m)	All drives
Central mounting brackets	Single drives: from MD810-50M4T1.5GXXX to MD810-50M4T75GXXX
	Dual drives: from MD810-50M4TD1.5GXXX to MD810-50M4TD18.5GXXX
	Rectifiers: from MD810-20M4T22GXXX to MD810-20M4T160GXXX
Air deflector plates	Single drives: from MD810-50M4T1.5GXXX to MD810-50M4T75GXXX
	Dual drives: from MD810-50M4TD1.5GXXX to MD810-50M4TD18.5GXXX
	Rectifiers: MD810-20M4T22GXXX - MD810-20M4T160GXXX
UVW shielding bracket	Single drives: from MD810-50M4T1.5GXXX to MD810-50M4T75GXXX
	Dual drives: from MD810-50M4TD1.5GXXX to MD810-50M4TD18.5GXXX
	Rectifiers: from MD810-20M4T22GXXX to MD810-20M4T110GXXX
LCD keypad mounting base (SOP-20-MP-IP20)	All drives