

M420 Series



Frequency inverter with vector flux control
for multi-purpose applications

1.5kW ~ 450kW
3 phase 380V
IP20



Improve control performance

- Starting torque: 180%/0,5 Hz; 120%/0,5 Hz (pump application)
- Two control models: V/F, vector control with open loop
- Precise speed control accuracy: open loop magnetic flux vector control $\leq \pm 0,5\%$ (rated sync-speed)
- More stable speed control stability: open loop magnetic flux vector control $\leq \pm 0,3$ (rated sync-speed)

Double specifications: Normal Duty / Heavy Duty

Selected operating mode must correspond to motor load.

Normal Duty is a mode for light-duty applications. Overload capacity: 150%/3 s, 130%/60 s. Capacity on continuous operation corresponds to inverter rated capacity.

Heavy Duty is a mode for heavy-duty applications. Overload capacity: 180%/3 s, 150%/60 s. Capacity on continuous operation corresponds to inverter rated capacity of next lower order.

Various functions

Built-in simple PLC
Built-in PID
16 multi speed control

Environmental protection

Environmental consideration
Improving environmental performance

Specification

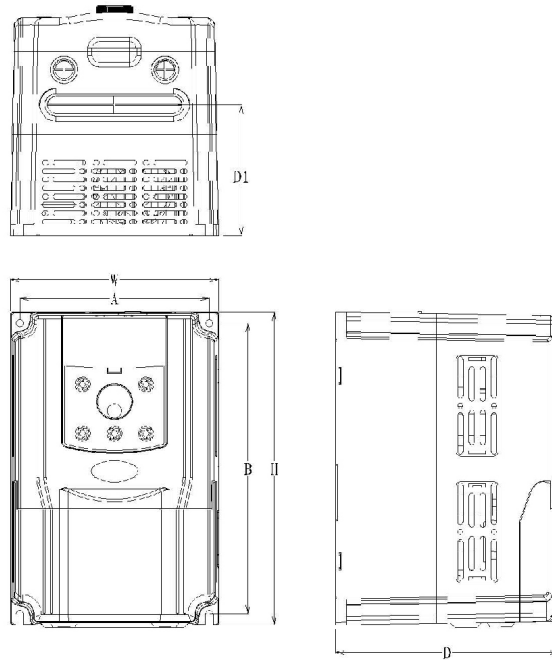
	Items	M420 Series
	Power range	M420: 1.50 kW ~ 630 kW (normal duty) 0.75 kW ~ 550 kW (heavy duty)
Power supply	Rated voltage, frequency	380 V (3 phase) 50/60 Hz
	Voltage range	-15%...+20% of rated voltage
Control method		V/f control, Vector flux control
Basic function	Maximum frequency	600.00 Hz
	Input frequency resolution	Digital setting: 0.01 Hz, Analog setting: max. frequency x0.1%
	Carrier frequency	1-15 kHz; the carrier frequency will be automatically adjusted according to the load characteristics
	Startup torque	0.5 Hz/120% (normal duty) 0.5 Hz/180% (heavy duty)
	Torque hoist	Automatic torque hoist, Manual torque hoist 0.1~30.0%
	Speed adjustment range	1:200 (open loop vector flux control)
	Torque response	≤40 ms (open magnetic flux vector control)
	Multi speed	16 segments speed (running via the simple PLC or control terminal)
	V/f curve	Linear V/f, Square V/f, Multi-point V/f
	Speed-up and Speed-down curve	Straight line or S curve speed-up and speed-down mode; two kinds of speed-up and speed-down time
	Acceleration/deceleration time	0.0~3000 s
	DC brake	DC brake frequency: 0.00~400.00 Hz, Brake time: 0.0~36.0 s, Brake current value: 0.0~100.0%
	Jog control	Jog frequency range: 0.00~50.00 Hz, Jog speed-up/speed-down time: 0.0~3000.0 s
	PID control	Built-in
	RS-485 Interface	Standard RS-485 communication function (MODBUS)
	Auto voltage regulation (AVR)	It can keep constant output voltage automatically in case of change of mains voltage
Input	Analog	2
	Digital	5
Output	Analog	1
	Digital	1
	Relay	2
Protection/ Warning function	Overload	150%, 3 s (normal duty), 180%, 3 s (heavy duty)
	Over voltage	Yes
	Under voltage	Yes
	Other protections	Overheat, Short circuit, Over current, Phase loss protection (input/output), etc.
	Ambient temperature	-10 °C ... +40 °C (derated when used in ambient temperature of +40 °C...+50 °C)
	Ambient humidity	Max. 95 % (non-condensing)
	Altitude	Lower than 1000 m
	Vibration	Max. 0.6 G
	Protective	IP20

Model range

Model	Input voltage (V)	Rated output power (kW)*	Output current (A)	Input current (A)	Overload capacity (60s) (A)	Applicable motor (kW)
ADV 1.50 M420-M	3 phase 380 V (-15...+20 %)	1.5/0.75	3.8/2.1	5/3.4	4.94/3.78	1.5/0.75
ADV 2.20 M420-M		2.2/1.5	5.1/3.8	5.8/5	6.63/6.84	2.2/1.5
ADV 4.00 M420-M		4/2.2	9/5.1	10.5/5.8	11.7/9.18	4/2.2
ADV 5.50 M420-M		5.5/4	13/9	14.6/10.5	16.9/16.2	5.5/4
ADV 7.50 M420-M		7.5/5.5	17/13	20.5/14.6	22.1/23.4	7.5/5.5
ADV 11.0 M420-M		11/7.5	25/20	26/22	32.5/36	11/7.5
ADV 15.0 M420-M		15/11	32/25	35/26	41.6/45	15/11
ADV 18.5 M420-M		18.5/15	37/32	38.5/35	48.1/57.6	18.5/15
ADV 22.0 M420-M		22/18.5	45/37	46.5/38.5	58.5/66.6	22/18.5
ADV 30.0 M420-M		30/22	60/45	62/46.5	78/81	30/22
ADV 37.0 M420-M		37/30	75/60	76/62	97.5/108	37/30
ADV 45.0 M420-M		45/37	90/75	92/76	117/135	45/37
ADV 55.0 M420-M		55/45	110/90	113/92	143/162	55/45
ADV 75.0 M420-M		75/55	152/110	157/113	197.6/198	75/55
ADV 90.0 M420-M		90/75	176/152	180/157	228.8/273.6	90/75
ADV 110 M420-M		110/90	210/176	214/180	273/316.8	110/90
ADV 132 M420-M		132/110	253/210	256/214	328.9/378	132/90
ADV 160 M420-M		160/132	304/253	307/256	395.2/455.4	160/132
ADV 185 M420-M		185/160	340/304	345/307	442/547.2	185/160
ADV 200 M420-M		200/185	380/340	385/345	494/612	200/185
ADV 220 M420-M		220/200	426/380	430/385	553.8/684	220/200
ADV 250 M420-M		250/220	465/426	468/430	604.5/766.8	250/220
ADV 280 M420-M		280/250	520/465	525/468	676/837	280/250
ADV 315 M420-M		315/280	585/520	590/525	760.5/936	315/280
ADV 355 M420-M		355/315	650/585	665/590	845/1053	355/315
ADV 400 M420-M		400/355	725/650	785/665	942.5/1170	400/355
ADV 450 M420-M		450/400	820/725	883/785	1066/1305	450/400
ADV 500 M420-M		500/450	900/820	920/883	1170/1476	500/450
ADV 550 M420-M	550/500	1000/900	1020/920	1300/1620	550/500	
ADV 630 M420-M	630/550	1100/1000	1120/1020	1430/1800	630/550	

* Normal Duty / Heavy Duty

Dimensions

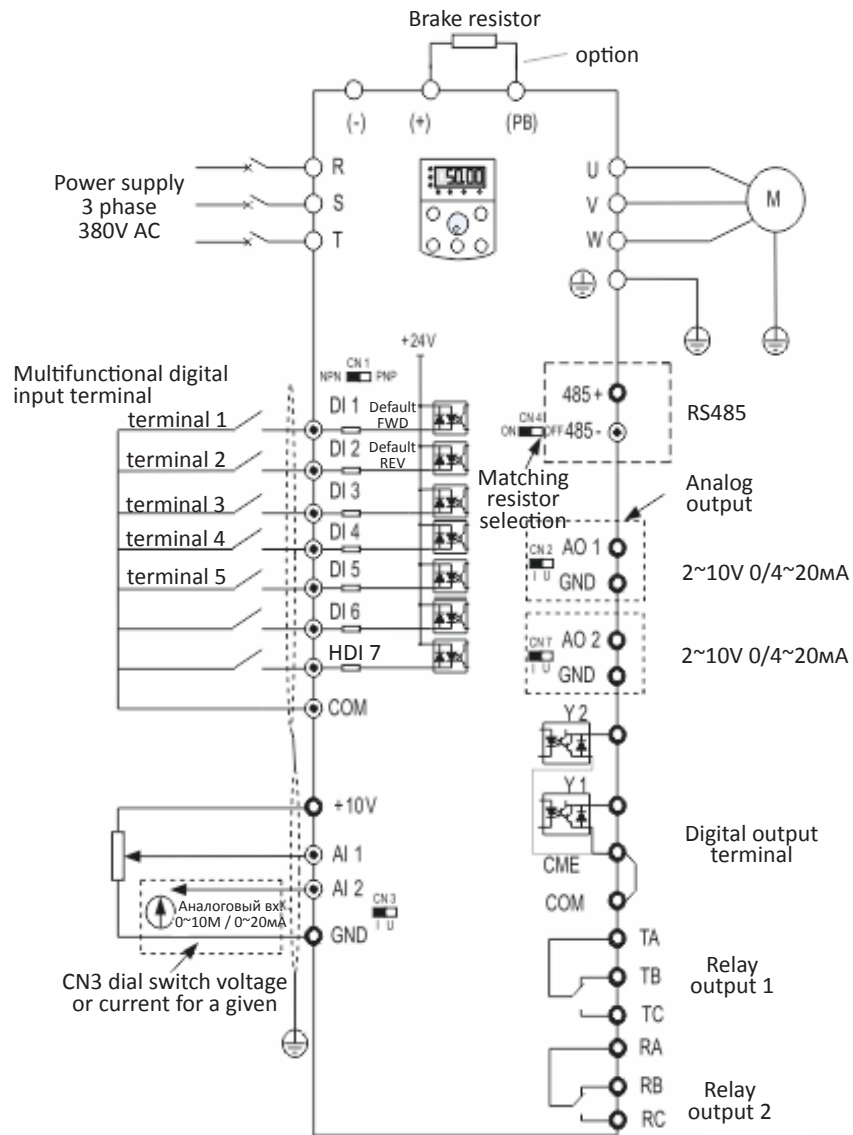


Unit: mm

Model	Mounting hole		Dimensions		
	A	B	H	W	D
ADV 1.50 M420-M	135	207	223	148	159
ADV 2.20 M420-M					
ADV 4.00 M420-M					
ADV 5.50 M420-M					
ADV 7.50 M420-M	150	226	238	162	165
ADV 11.0 M420-M	160	326	340	222	194
ADV 15.0 M420-M					
ADV 18.5 M420-M					
ADV 22.0 M420-M	200	460	485	260	230
ADV 30.0 M420-M					
ADV 37.0 M420-M					
ADV 45.0 M420-M	220	545	565	330	252
ADV 55.0 M420-M					
ADV 75.0 M420-M	300	563	588	380	266
ADV 90.0 M420-M	320	635	660	460	290
ADV 110 M420-M					
ADV 132 M420-M	340	845	875	475	305
ADV 160 M420-M					
ADV 185 M420-M	380	1066	1100	520	355
ADV 200 M420-M					
ADV 220 M420-M	500	1320	1360	700	380
ADV 250 M420-M					
ADV 280 M420-M					
ADV 315 M420-M					
ADV 355 M420-M	750	1300	1350	900	455
ADV 400 M420-M					
ADV 450 M420-M					

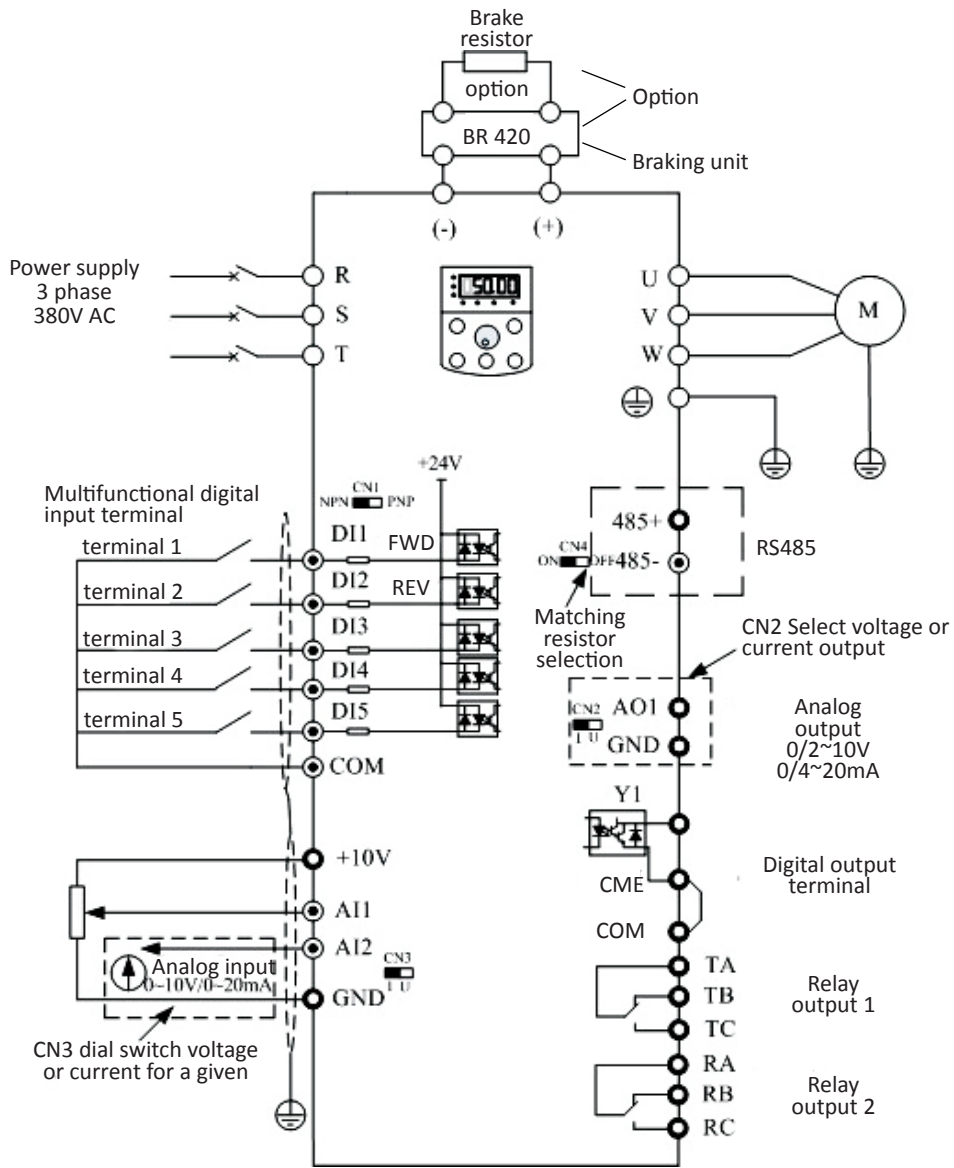
Wiring diagram

ADV 1.50 M420-M - ADV 18.5 M420-M



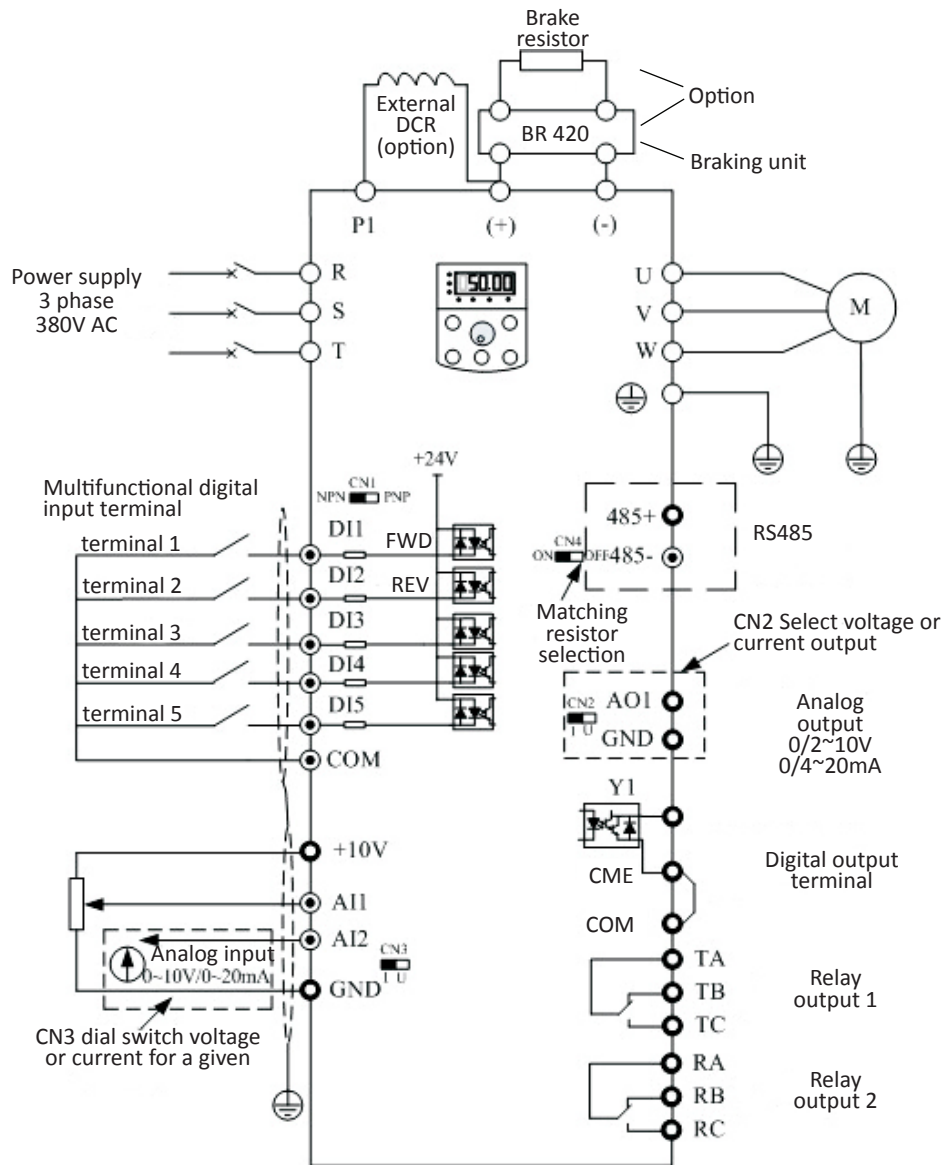
Wiring diagram

ADV 22.0 M420-M - ADV 75.0 M420-M



Wiring diagram

ADV 90.0 M420-M - ADV 630 M420-M





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