

3-PHASE MOTOR SOFT STARTERS

SERIES DMS



DMS1



DMS2



DMS3

The 3-phase motor soft starter allows starting and sometimes stopping smoothly equipments of the type pumps, conveyors, centrifuges, band saws or others, in order to avoid mechanical shocks such as the «hammer blows» or the «jerks».

It also allows limiting the starting torque and current, and always represents a better alternative to the «star-triangle» systems or the «self-transformer».



The soft motor starter is an electronic device which regulates the motor supply voltage in order to obtain a regular transition between the standstill and the full power operation of the application.

The increase ramps or decrease ramps of the supply voltage or performed by a modification of the phase angle with 2 thyristors mounted «head to tail».

According to the application the start up and the stop of the motor can be controlled in different ways:

In some cases an unlinear start up ramp will be necessary, and will be performed by a checking of the drawn current.

On the contrary an immediate stop can be useful, for instance in the case of the control of a band saw.

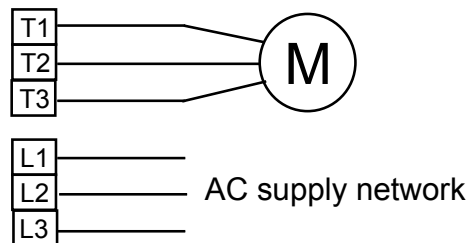
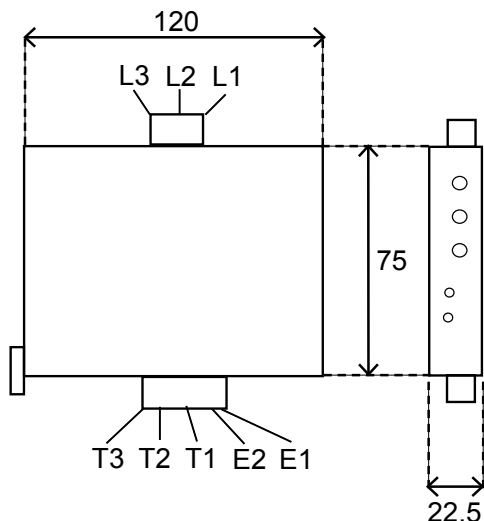
Sometimes a maximum torque during a short period before the acceleration ramp (kick-start) can be necessary.



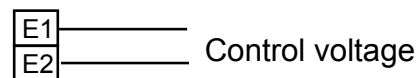
The starters of the series DMS allow to fulfill these applications.

Type	DMS1		DMS2		DMS3	
Soft starter for motors with a maximum nominal power of:	0.75 kW	on 3x 200-240VAC(+/-10%) network (for DMS1-2)	7.5 kW	on 3x 380VAC to 440VAC (+10% / -15%) 50/60Hz +/-10% frequency network (for a 3x 200VAC to 240VAC network specify on order)	37 kW	on 3x 380VAC to 440VAC (+10% / -15%) 50/60Hz +/-10% frequency network (for a 3x 200VAC to 240VAC network specify on order)
			15 kW			
	1.5 kW	on 3x 400-480VAC(+/-10%) network (for DMS1-4)	18 kW		45 kW	
			22 kW		55 kW	
		30 kW				
2 phases controlled by thyristors	•		•			
Voltage of the supply network	200 to 480VAC (specify on order)		200 to 480VAC (specify on order)			
Start up ramp	0 to 10s		0 to 99s			
Stop ramp	0 to 10s		0 to 99s			
Function"kick-start"	•		•			
start/stop control voltage	18 to 530VAC/DC on 2 wires		2 or 3 wire control by contact inputs			
supply voltage	on 3-phase supply network Power draw 2.5W		Independent isolated supply: 20 to 484VAC, or 20 to 300VDC (possible on 3-phase supply network) power draw 5W			
Checking of the start up current			•			
Function wattmeter: allows the checking of the motor electrical parameters (P, Q, cosØ ...)			•			
Protection functions			- phase rupture, reversed phase ranks - too long start up time - measure of a parameter out of range (frequency, power etc..) - radiator temperature measurement - motor thermal overload, thermal overload of the thyristors			
Internal bypass relays			•			
Relay outputs			3 independent relay outputs * type NO (normally open) * 5A/230VAC 5A/30VDC on resistive load			
Analog output			OPTIONAL Type: (0-4-20mA) or (0-10V) to be specified on order * 0-22mA max on 600ohms max. load in mode active * External power supply 30V max. in mode passive * 0-11V max on 5 kohms load * accuracy: 0.1%			
Programming	3 rotary dip switches		by plug-on micro-console common to all the ARDETEM SFERE converters, or by PC ("DIN" contact access with the software SPVISION/MCVISION wich allows creating and downloading start up configuration files, visualising the electrical measures of the motor and the modification or visualisation of the start up parameters)			
Savings			- time dating and saving of the last 996 events (actions or errors) - savings of the start up counters, total of operation hours and active energy drawn by the motor			
RS485 output			OPTIONAL: * protocole modbus/jbus * baud rate from 1200 to 19200 baud * programmable parity * transmission rank of the bytes programmable			
Isolation	3 kV AC 50Hz/1mn	Control voltage / supply network	5 kV AC 50Hz/1mn	3-phase network / supply + inputs-outputs		
			2 kV AC 50Hz/1mn	Supply / inputs-outputs		
Environment	Protection/pollution degree		IP 20 / 3			
	Operating T°		-10 to +40°C (+60°C possible but no more within the class)			
	Storage T°		-20 to +70°C			
	Cooling		Natural convection, vertical mounting +/- 30°			
Standards	Marking		CE			
	Specific standards		IEC 60947-1, IEC 60947-4-2			
Mounting on	DIN rail		wall plate			

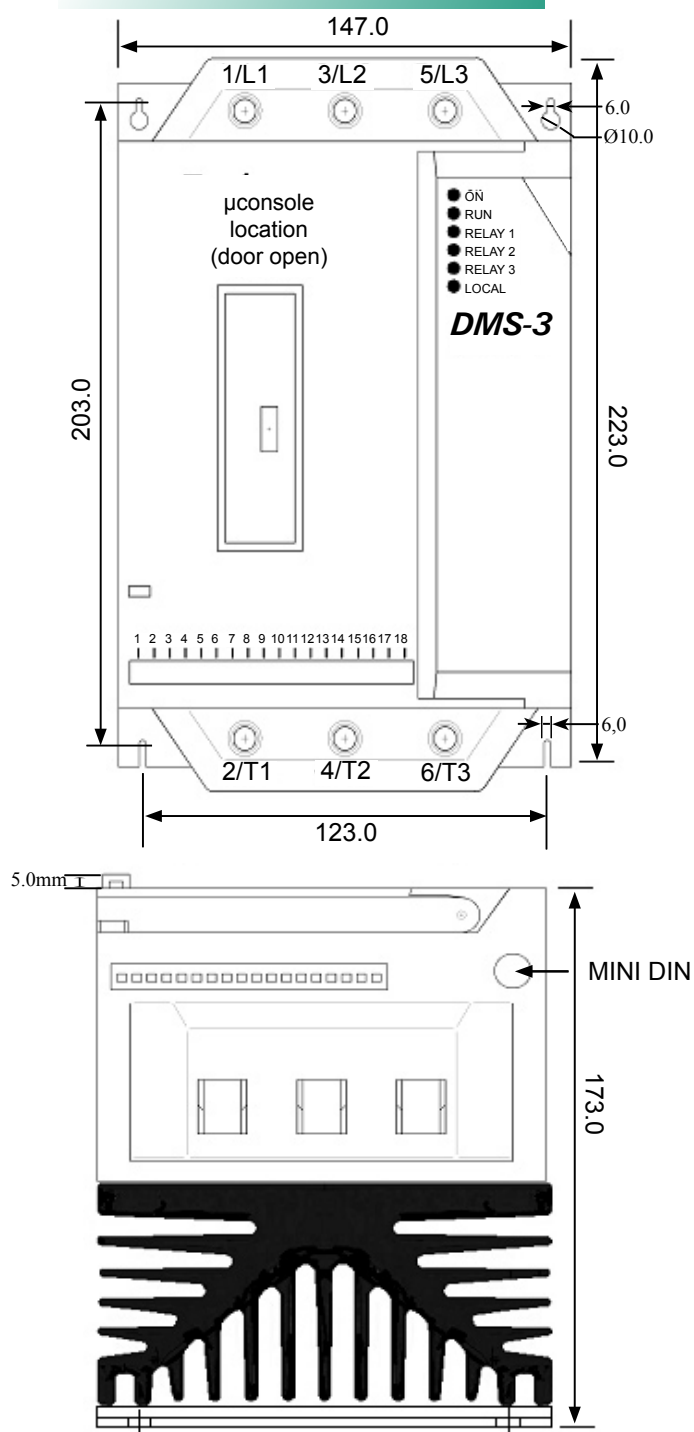
DMS-1 dimensions



DMS-1 wiring

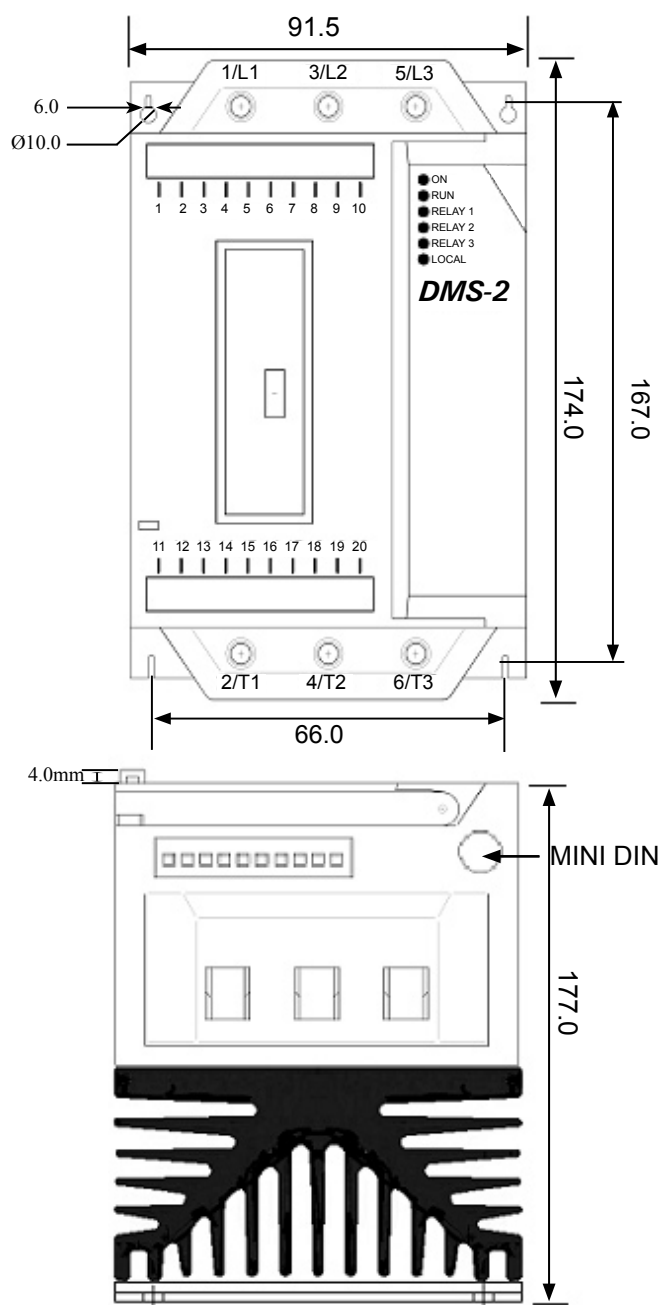


DMS-3 dimensions



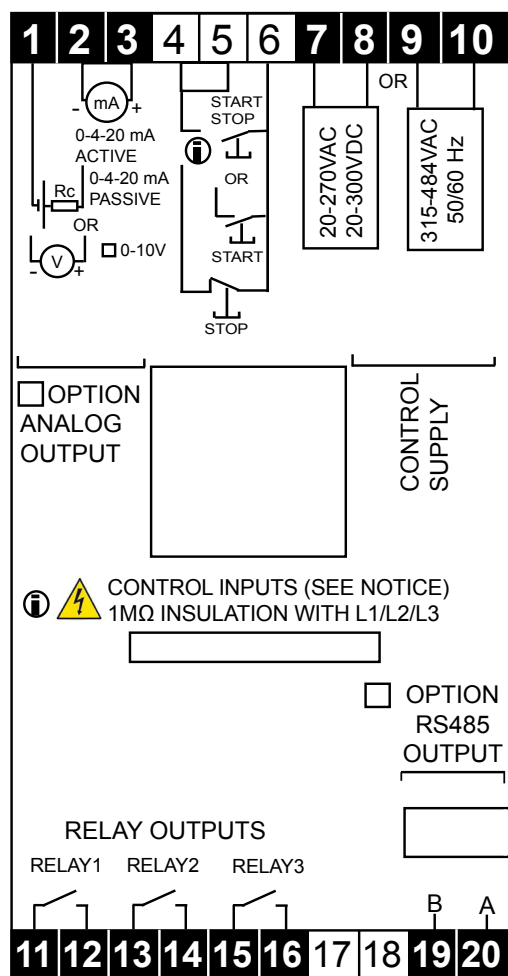
Distance between 2 tightening holes 123x203 mm for Ø 6mm max. screw
Weight: 4450g

DMS-2 dimensions

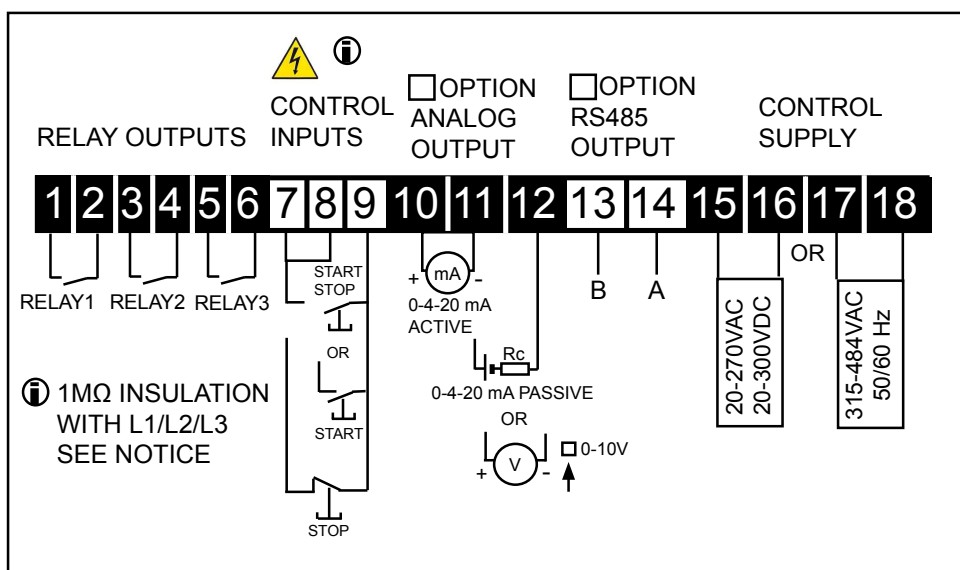


Distance between 2 tightening holes 66x167 mm for Ø 6mm max. screw
Weight: 2160g

DMS-2 wiring



DMS-3 wiring



Coding:

DMS 1-2 (supply network 200 to 240VAC)

DMS 1-4 (supply network 380 to 480 VAC)

DMS2-xxIN - R230 (*) (*) 3-phase supply network by default from 380 to 480 VAC, add - R230 to the designation for use on a 3-phase network from 200 to 240 VAC

Output options:

I: analog output: active/passive current 0-4-20mA

V: analog output: voltage 0-10V

N: digital data link RS485

Power of the motor @400V

7.5 at 30kW for DMS-2

37 at 55kW for DMS-3

DMS2 or DMS3

Type	Power of the motor (kW)	Max. nominal current (A) CA-53b *
DMS1	1,5	3 A: 5-5: 25
DMS2	7,5	18 A: 3-30: 330
	15	34 A: 3-30: 330
	18	42 A: 3-30: 330
	22	48 A: 3-30: 330
	30	60 A: 3-30: 330
DMS3	37	75 A: 3-30: 570
	45	85 A: 3-30: 570
	55	100 A: 3-30: 570

• Example : CA-53b :34 A : 3-30 :330
max. start up current = 3 times the max. nominal current (34A) during 30 seconds
330 seconds minimum between 2 starts



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