

Vapormatic starters for slip ring motors type M15



The M15 starter is of heavy duty metal construction suitable for use in dust laden atmospheres or outdoors.

For motors up to 30 kW

Suitable for outdoor or dust laden atmosphere

These starters have numerous advantages:

- Reliability

- No moving parts other than the contactors,
- Unaffected by damp, dusty or corrosive atmospheres.

- Economy

- Cable saving: integral contactors facilitate installation beside motors,
- Minimal electrical and mechanical maintenance,
- Competitive prices.

- Adaptability

Easy adjustment gives "made to measure" starting conditions and conversion to suit different drives.

operating principle

This is based on the difference in resistivity between a liquid electrolyte and its vapour, contained in an electrode chamber.

The passage of the initial rotor current causes immediate partial vaporisation of

the electrolyte and instantaneously adjusts resistance and starting torque to optimum values. During the run-up to speed, the thermal interchanges which occur progressively decrease the resistance.

A timed contactor then short circuits the

low residual resistance.

The starting torque is determined according to the requirements of the driven machine or the current limitation.

specifications

Electrical characteristics

- Rating up to 30 kW (40 HP),
- Rotor voltage between slip rings: 750 V maximum,
- Integral short circuit contactor: 140 A - 175 A,
- Number of electrode assemblies: 1,
- Connection: single stage,
- Cabling via undrilled gland plates,
- Delay time: timing relay.

Electrolyte

- Electrolyte temperature thermostatically controlled,
- Electrolyte level: overflow screw,
- Electrolyte included with each starter in powder or crystal form for mixing with drinking water and anti-evaporation oil.

Tank

- Tank capacity: 15 litres,
- Breathing pipes for mobile and marine applications (standard fitting).

Environment

Protection IP 63.

Presentation

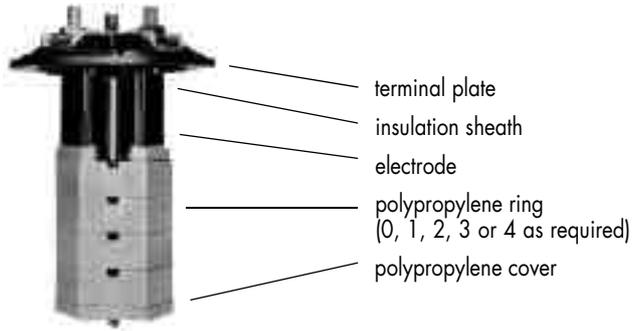
- Resin polyester based textured paint finish.

Thickness: 60 microns minimum. Grey-beige RAL7032.

- Average weight with contactor
 - . without electrolyte: 25 kg,
 - . with electrolyte: 40 kg.

electrode assembly

This is a standard component designed for a unit power of 30 kW.
 The value of resistance is preset at our works according to drive and motor particulars.
 It is always possible to make adjustments on site, either for a change of drive or for a different duty.
 This is easily carried out by changing the electrolyte and/or the size of the electrode chamber.



rotor starter protection system

On request we can supply your starter with an electronic module type DRS. This module allows

- locked rotor detection of your motor

- optimisation of the starting time by measuring the true speed of the motor
- temperature monitoring of the electrolyte
- limitation of the number of starts per

hour.
 Any anomaly in the starting sequence is detected by a fault relay which can be connected to your control circuit.

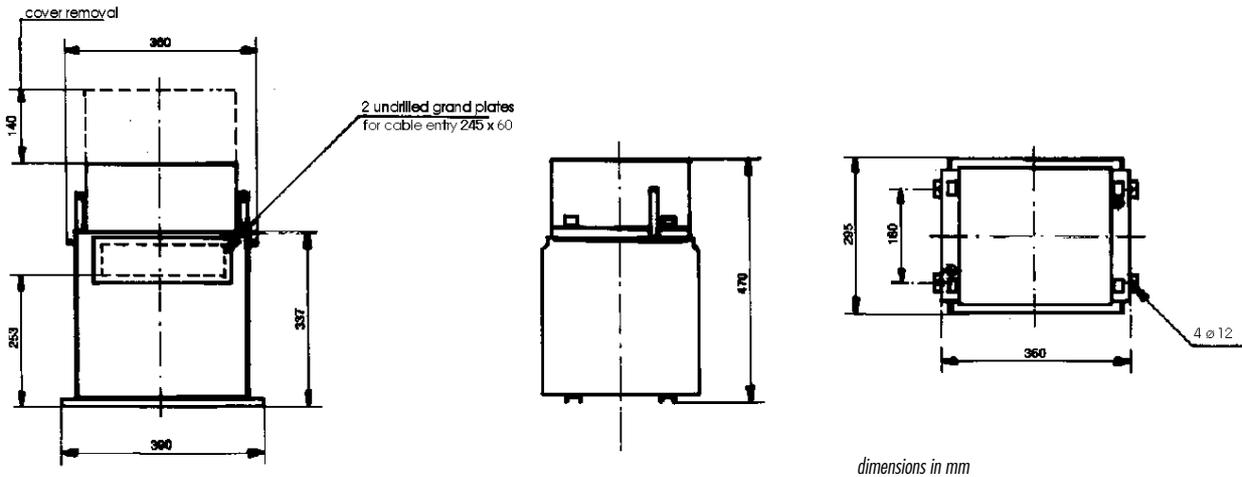
options

Antifreeze
 Antifrost protection down to - 20°C.
 Can be used throughout the year but can-

not be added to existing electrolyte as it alters the value of resistivity.

Tropicalisation.

dimensions



ordering instructions

Starter 30 kW max. M15/1

Consumables and accessories
 Electrolyte On request
 Thermostat ER60102B

Options
 Antifreeze On request
 Tropicalisation On request

The above characteristics are subject to modification without prior notice.



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Vapormatic starters for slip ring motors type M35



The M35 starter is of heavy duty metal construction suitable for use in dust laden atmospheres or outdoors.

For motors up to 120 kW

Suitable for outdoor or dust laden atmosphere

These starters have numerous advantages:

- Reliability
- No moving parts other than the contactors,
- Unaffected by damp, dusty or corrosive atmospheres.

• Economy

- Cable saving: integral contactors facilitate installation beside motors,
- Minimal electrical and mechanical maintenance,
- Competitive prices.

• Adaptability

- Easy adjustment gives "made to measure" starting conditions and conversion to suit different drives.

operating principle

This is based on the difference in resistivity between a liquid electrolyte and its vapour, contained in an electrode chamber.

The passage of the initial rotor current causes immediate partial vaporisation of

the electrolyte and instantaneously adjusts resistance and starting torque to optimum values. During the run-up to speed, the thermal interchanges which occur progressively decrease the resistance.

A timed contactor then short circuits the low residual resistance. The starting torque is determined according to the requirements of the driven machine or the current limitation.

specifications

Electrical characteristics.....

- Rating
- M35/1: up to 30 kW (up to 40 HP),
- M35/2: 30 to 60 kW (40 to 80 HP),
- M35/3: 60 to 90 kW (80 to 125 HP),
- M35/4: 90 to 120 kW (125 to 160 HP).
- Rotor voltage between slip rings: 750 V maximum,
- Integral short circuit contactor: 140 A - 175 A - 280 A,
- Number of electrode assemblies: 1, 2, 3 or 4,
- Connection: 1 or 2 stages (tank divided

- into sections),
- Cabling via undrilled gland plate,
- Delay time: timing relay.

Electrolyte.....

- Electrolyte temperature thermostatically controlled,
- Electrolyte level indication by dipstick,
- Electrolyte included with each starter in powder or crystal form for mixing with drinking water and anti-evaporation oil.

Tank.....

- Tank capacity: 35 litres.

Environment.....

- Protection IP 63.

Presentation.....

- Resin polyester based paint finish. Thickness: 60 microns minimum. Grey-beige RAL7032.
- Average weight with contactor
 - . without electrolyte: 38 kg,
 - . with electrolyte: 73 kg.

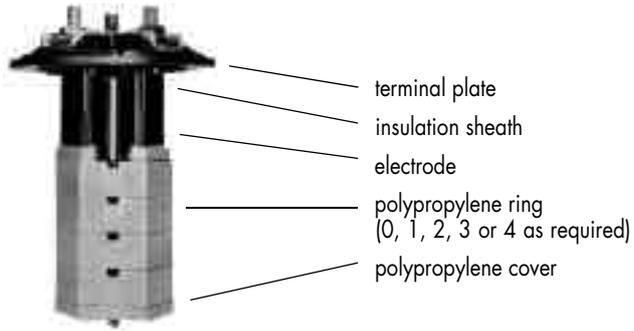
electrode assembly

This is a standard component designed for a unit power of 30 kW.

The value of resistance is preset at our works according to drive and motor particulars.

It is always possible to make adjustments on site, either for a change of drive or for a different duty.

This is easily carried out by changing the electrolyte and/or the size of the electrode chamber.



rotor starter protection system

On request we can supply your starter with an electronic module type DRS.

This module allows

- locked rotor detection of your motor

- optimisation of the starting time by measuring the true speed of the motor
 - temperature monitoring of the electrolyte
 - limitation of the number of starts per

hour.

Any anomaly in the starting sequence is detected by a fault relay which can be connected to your control circuit.

options

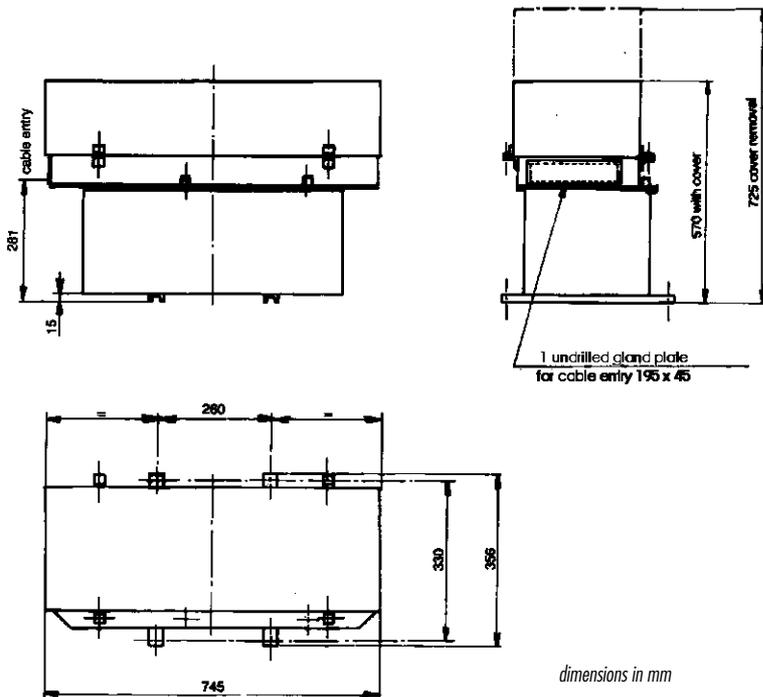
Antifreeze

Antifrost protection down to - 20°C.
 Can be used throughout the year but can-

not be added to existing electrolyte as it alters the value of resistivity.

Tropicalisation.

dimensions



ordering instructions

Starter up to 30 kW	M35/1
Starter from 30 to 60 kW	M35/2
Starter from 60 to 90 kW	M35/3
Starter from 90 to 120 kW	M35/4

Consumables and accessories

Electrolyte	On request
Thermostat	ER60102B

Options

Antifreeze	On request
Tropicalisation	On request

The above characteristics are subject to modification without prior notice.



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Vapormatic starters for slip ring motors type M70



The M70 starter is of heavy duty metal construction suitable for use in dust laden atmospheres or outdoors.

For motors from 90 to 200 kW

Suitable for outdoor or dust laden atmosphere

These starters have numerous advantages:

- Reliability
- No moving parts other than the contactors,
- Unaffected by damp, dusty or corrosive atmospheres.

- Economy
- Cable saving: integral contactors facilitate installation beside motors,
- Minimal electrical and mechanical maintenance,
- Competitive prices.

- Adaptability
- Easy adjustment gives "made to measure" starting conditions and conversion to suit different drives.

operating principle

This is based on the difference in resistivity between a liquid electrolyte and its vapour, contained in an electrode chamber.

The passage of the initial rotor current causes immediate partial vaporisation of

the electrolyte and instantaneously adjusts resistance and starting torque to optimum values. During the run-up to speed, the thermal interchanges which occur progressively decrease the resistance.

A timed contactor then short circuits the

low residual resistance. The starting torque is determined according to the requirements of the driven machine or the current limitation.

specifications

Electrical characteristics.....

- Rating
- M70/4: 90 to 120 kW (125 to 160 HP),
- M70/6: 120 to 200 kW (160 to 270 HP),
- Rotor voltage between slip rings: 750 V maximum,
- Integral short circuit contactor: 140 A - 175 A - 280 A - 420 A - 630 A - 700 A,
- Number of electrode assemblies: 4 or 6,
- Connection: 1 or 2 stages (tank divided into two sections),
- Cabling via undrilled gland plate,

- Delay time: timing relay.

Electrolyte.....

- Electrolyte temperature thermostatically controlled,
- Electrolyte level indication by filler pipe,
- Electrolyte included with each starter in powder or crystal form for mixing with drinking water and anti-evaporation oil.

Tank.....

- Tank capacity: 70 litres.

Environment.....

- Protection IP 63.

Presentation.....

- Resin polyester based textured paint finish.
- Thickness: 60 microns minimum.
- Grey-beige RAL7032.
- Average weight with contactor
 - . without electrolyte: 115 kg,
 - . with electrolyte: 185 kg.

Vapormatic starters for slip ring motors M 350



The M350 starter is of heavy duty metal construction suitable for use in dust laden atmospheres or outdoors.

- **For motors from 200 to 750 kW**
- **Suitable for outdoor or dust laden atmosphere**

These starters have numerous advantages:

- **Reliability**

- No moving parts other than the contactors,
- Unaffected by damp, dusty or corrosive atmospheres.

- **Economy**

- Cable saving: integral contactors facilitate installation beside the motor,
- Minimal electrical and mechanical maintenance,
- Competitive prices.

- **Adaptability**

Easy adjustment gives "made to measure" starting conditions and conversion to suit different drives.

operating principle

This is based on the difference in resistivity between a liquid electrolyte and its vapour, contained in an electrode chamber.

The passage of the initial rotor current causes immediate partial vaporisation of

the electrolyte and instantaneously adjusts resistance and starting torque to optimum values. During the run-up to speed, the thermal interchanges which occur progressively decrease the resistance. A timed contactor then short circuits the

low residual resistance. The starting torque is determined according to the requirements of the driven machine or the current limitation.

specifications

Electrical characteristics

- Rating

M350/2A: 200 to 300 kW (270 to 400 HP),

M350/2B: 300 to 440 kW (400 to 600 HP),

M350/3: 440 to 750 kW (600 to

1000 HP).

Above these ratings, and up to 20,000 kW, see starters EPM.

- Rotor voltage between slip rings: 1500 V maximum,

- Integral short circuit contactor: 1300 A maximum,

- Number of electrode assemblies: 2 or 3,
- Connection: 2 or 3 stages (tank divided into two sections),
- Cabling via undrilled gland plates,
- Delay time: timing relay.

Electrolyte.....

- Electrolyte temperature thermostatically controlled,
- Electrolyte level indication by magnetically operated float switch (250 V - 60 VA) in each compartment,
- Electrolyte included with each starter in powder or crystal form for mixing with drinking water and anti-evaporation oil.

Tank.....

- Tank capacity: 350 litres,
- Filling via tubes,
- Emptying via drain taps.

Environment.....

Protection IP 54.

Presentation.....

- Paint finish.
- Thickness: 60 microns minimum. Grey-beige RAL7032.
- Average weight with contactor
 - . without electrolyte: 170 kg,
 - . with electrolyte: 530 kg.

rotor starter protection system

On request we can supply your starter with an electronic module type DRS. This module allows

- locked rotor detection of your motor

- optimisation of the starting time by measuring the true speed of the motor
- temperature monitoring of the electrolyte
- limitation of the number of starts per

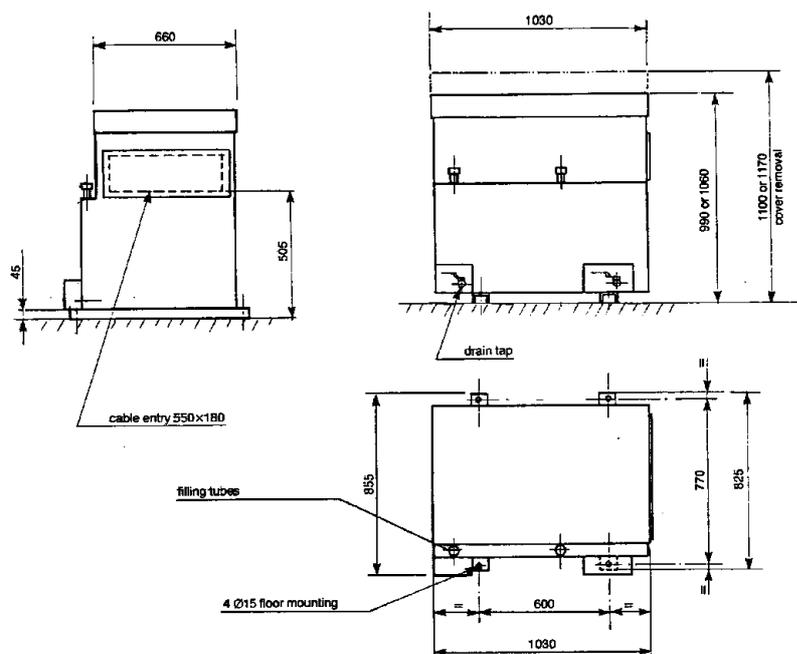
hour.

Any anomaly in the starting sequence is detected by a fault relay which can be connected to your control circuit.

options

- Antifrost protection,
- Tropicalisation,
- Level detector.

dimensions



Dimensions in mm

ordering instructions

Starter from 200 to 300 kW M350-2A
Starter from 300 to 440 kW M350-2B
Starter from 440 to 750 kW M350-3

Consumables and accessories.....

Electrolyte On request
Thermostat SR00140

Options.....

Heater with thermostat On request
Level detector ER60136-000
Antifreeze On request

The above characteristics are subject to modification without prior notice



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