

## PRODUCT-DETAILS

# MS132-1.6

## MS132-1.6 Manual Motor Starter



### Información General

|                            |                                |
|----------------------------|--------------------------------|
| Tipo de producto extendido | MS132-1.6                      |
| Código de producto         | 1SAM350000R1006                |
| EAN                        | 4013614400063                  |
| Descripción corta          | MS132-1.6 Manual Motor Starter |

#### Descripción larga

The MS132-1.6 manual motor starter (also known as motor protection circuit breaker or manual motor protector) is a compact 45 mm width device with a rated operational current of  $I_e = 1.60$  A. This device is used to manually switch on and off motors and to protect them reliably and without the need for a fuse from short-circuits, overload and phase failures. The manual motor starter offers a rated service short-circuit breaking capacity  $I_{cs} = 100$  kA at 400 VAC and trip class 10. Further features are the build-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The manual motor starter is suitable for three- and single-phase applications. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signaling contacts, undervoltage releases, shunt trips, 3-phase bus bars, power in-feed blocks and terminal spacers are available as accessory.

### Clasificación

|                           |          |
|---------------------------|----------|
| Cantidad mínima de pedido | 1 piece  |
| Código arancelario        | 85362010 |

### Descargas Populares

|                |                 |
|----------------|-----------------|
| Ficha técnica, | 2CDC131021D0202 |
|----------------|-----------------|

## información técnica

|                                   |                                    |
|-----------------------------------|------------------------------------|
| Instrucciones y manuales          | 2CDC131022M6802                    |
| Instructions and Manuals (Part 2) | 2CDC131060M0202                    |
| Time-Current Characteristic Curve | 1SAM300505F0106                    |
| I <sup>2</sup> t Characteristic   | 1SAM300507F0001<br>1SAM300507F0003 |
| Cut-off Current Characteristic    | 1SAM300508F0001<br>1SAM300508F0003 |
| Dimension Diagram                 | 1SAM300402F0001                    |

## Dimensiones

|                   |          |
|-------------------|----------|
| Ancho del product | 45 mm    |
| Alto del producto | 90 mm    |
| Largo del product | 86.75 mm |
| Peso del product  | 0.265 kg |

## Technical

|                                                                     |                                                                                                                                             |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Rated Service Short-Circuit Breaking Capacity (I <sub>cs</sub> )    | (230 V AC) 100 kA<br>(250 V DC) 3 Poles in Series 10 kA<br>(400 V AC) 100 kA<br>(440 V AC) 100 kA<br>(500 V AC) 100 kA<br>(690 V AC) 100 kA |
| Rated Ultimate Short-Circuit Breaking Capacity (I <sub>cu</sub> )   | (230 V AC) 100 kA<br>(400 V AC) 100 kA<br>(440 V AC) 100 kA<br>(500 V AC) 100 kA<br>(690 V AC) 100 kA                                       |
| Rated Instantaneous Short-Circuit Current Setting (I <sub>i</sub> ) | 20 A                                                                                                                                        |
| Setting Range                                                       | 1.0 ... 1.6 A                                                                                                                               |
| Rated Operational Power AC-3 (P <sub>e</sub> )                      | (400 V) Three Phase 0.55 kW                                                                                                                 |
| Rated Operational Power AC-3e (P <sub>e</sub> )                     | (400 V) Three Phase 0.55 kW                                                                                                                 |
| Rated Operational Voltage                                           | Main Circuit 690 V AC<br>Main Circuit 250 V DC                                                                                              |
| Rated Operational Current (I <sub>e</sub> )                         | 1.6 A                                                                                                                                       |
| Rated Operational Current AC-3 (I <sub>e</sub> )                    | 1.6 A                                                                                                                                       |
| Rated Operational Current AC-3e (I <sub>e</sub> )                   | 1.6 A                                                                                                                                       |
| Rated Operational Current DC-5 (I <sub>e</sub> )                    | 1.6 A                                                                                                                                       |
| Rated Frequency (f)                                                 | Main Circuit 50 Hz<br>Main Circuit 60 Hz                                                                                                    |
| Rated Impulse Withstand Voltage (U <sub>imp</sub> )                 | Main Circuit 6 kV                                                                                                                           |
| Rated Insulation Voltage (U <sub>i</sub> )                          | 690 V                                                                                                                                       |
| Power Loss                                                          | at Rated Operating Conditions per Pole 0.6 W                                                                                                |
| Number of Poles                                                     | 3                                                                                                                                           |
| Conventional Free-air Thermal Current (I <sub>th</sub> )            | Main Circuit 1.6 A                                                                                                                          |
| Grado de protección                                                 | Housing IP20                                                                                                                                |

|                                     |                                                                                                                                                                                                                                                                 |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | Main Circuit Terminals IP10                                                                                                                                                                                                                                     |
| Pollution Degree                    | 3                                                                                                                                                                                                                                                               |
| Electrical Durability               | 50000 cycle                                                                                                                                                                                                                                                     |
| Mechanical Durability               | 100000 cycle                                                                                                                                                                                                                                                    |
| Terminal Type                       | Screw Terminals                                                                                                                                                                                                                                                 |
| Connecting Capacity<br>Main Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Rigid 1/2x 1 ... 4 mm <sup>2</sup>                                                |
| Tightening Torque                   | Main Circuit 0.8 ... 1.2 N·m                                                                                                                                                                                                                                    |
| Wire Stripping Length               | Main Circuit 9 mm                                                                                                                                                                                                                                               |
| Recommended Screw<br>Driver         | Pozidriv 2                                                                                                                                                                                                                                                      |
| Mounting Position                   | Position 1 to 6                                                                                                                                                                                                                                                 |
| Mounting on DIN Rail                | TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715<br>TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715                                                                                                                                                  |
| Minimum Mounting<br>Distance        | Electrical Conductive Board, Horizontal - Up to 400 V 0 mm<br>Electrical Conductive Board, Horizontal - Up to 690 V 1.5 mm<br>Electrical Conductive Board, Vertical 75 mm<br>Other Device Same Type, Horizontal 0 mm<br>Other Device Same Type, Vertical 150 mm |
| Actuator Type                       | Rotary Handle                                                                                                                                                                                                                                                   |
| Contact Position<br>Indication      | ON / OFF / TRIP                                                                                                                                                                                                                                                 |
| Standards                           | IEC/EN 60947-1<br>IEC/EN 60947-2<br>IEC/EN 60947-4-1<br>UL 60947-1<br>UL 60947-4-1                                                                                                                                                                              |
| Remarks                             | UL508 Self-Protected Combination Motor Controller (Type E) in<br>combination with feeder block S1-M3-xx                                                                                                                                                         |

## Technical UL/CSA

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Short-Circuit Current<br>Rating (SCCR) | Manual Self-Protected Combination Controllers (Type E), (480Y / 277 V AC)<br>65 kA<br>Manual Self-Protected Combination Controllers (Type E), (600Y / 347 V AC)<br>47 kA<br>Any UL Listed Fuses or Circuit-Breakers, Group Installations (480 V AC) 65<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Group Installations (600 V AC) 47<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (480 V AC) 65<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (600 V AC) 47<br>kA<br>Any UL Listed Fuses or Circuit-Breakers, Tap Conductor Protection in<br>Group Installations (480Y / 277 V AC) 65 kA<br>Any UL Listed Fuses or Circuit-Breakers, Tap Conductor Protection in<br>Group Installations (600Y / 347 V AC) 47 kA |
| Maximum Operating<br>Voltage UL/CSA    | Main Circuit 600 V AC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ampere Rating UL/CSA                   | 1.6 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Horsepower Rating<br>UL/CSA            | (440 ... 480 V AC) Three Phase 0.75 Hp<br>(550 ... 600 V AC) Three Phase 0.75 Hp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Full Load Amps Motor<br>Use            | (200 V AC) Three Phase 1.6 A<br>(208 V AC) Three Phase 1.6 A<br>(220 ... 240 V AC) Three Phase 1.6 A<br>(440 ... 480 V AC) Three Phase 1.6 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Locked Rotor Amps                      | (200 V AC) Three Phase 9.6 A<br>(208 V AC) Three Phase 9.6 A<br>(220 ... 240 V AC) Three Phase 9.6 A<br>(440 ... 480 V AC) Three Phase 9.6 A<br>(550 ... 600 V AC) Three Phase 9.6 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| General Use Rating<br>UL/CSA           | (600 V AC) 1.6 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Connecting Capacity                    | Flexible 1/2x 16-12 AWG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                             |                              |
|-----------------------------|------------------------------|
| Main Circuit UL/CSA         | Stranded 1/2x 16-12 AWG      |
| Tightening Torque<br>UL/CSA | Main Circuit 10 ... 12 in-lb |

## Ambiente

|                                                   |                                                                                                                                             |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Temperatura ambiente                              | Around the Enclosure 0 ... +40 °C<br>Funcionamiento -25 ... +70 °C<br>Operation Compensated -25 ... +60 °C<br>Almacenamiento -50 ... +80 °C |
| Ambient Air<br>Temperature<br>Compensation        | Yes                                                                                                                                         |
| Maximum Operating<br>Altitude Permissible         | 2000 m                                                                                                                                      |
| Resistance to Shock acc.<br>to IEC 60068-2-27     | 11 ms Pulse 25g                                                                                                                             |
| Resistance to Vibrations<br>acc. to IEC 60068-2-6 | 5g / 3 ... 150 Hz                                                                                                                           |
| RoHS Status                                       | Following EU Directive 2011/65/EU                                                                                                           |

## Certificados y Declaraciones (Número de Documento)

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| ABS Certificate                      | 1SAA963001-0101                            |
| ATEX Certificate                     | 1SAA963000-3902                            |
| BV Certificate                       | 1SAA963001-0202                            |
| CB Certificate                       | 1SAA963002-2002                            |
| CQC Certificate                      | CQC2010010307387700<br>CQC2019010307243864 |
| cUL Certificate                      | cUL_E137861<br>cUL_E345003                 |
| cULus Certificate                    | cUL_E137861                                |
| Cut-off Current<br>Characteristic    | 1SAM300508F0001<br>1SAM300508F0003         |
| Declaration of<br>Conformity - CCC   | 2020980307003526<br>2020980307003041       |
| Declaración de<br>conformidad - CE   | 1SAD938516-0125                            |
| DNV GL Certificate                   | 1SAA963001-0304                            |
| EAC Certificate                      | 1SAA963000-2701                            |
| Environmental<br>Information         | 1SAC200049H0009                            |
| GOST Certificate                     | 1SAA963001-2702                            |
| I <sup>2</sup> t Characteristic      | 1SAM300507F0001<br>1SAM300507F0003         |
| Instrucciones y<br>manuales          | 2CDC131022M6802                            |
| Instructions and<br>Manuals (Part 2) | 2CDC131060M0202                            |
| KC Certificate                       | 1SAA963002-1502                            |
| LR Certificate                       | 1SAA963001-0502                            |
| RINA Certificate                     | 1SAA963002-0802                            |
| RMRS Certificate                     | 1SAA918000-0704                            |
| RoHS Information                     | 1SAD938511-0125                            |
| Time-Current<br>Characteristic Curve | 1SAM300505F0106                            |
| UL Certificate                       | UL_E137861<br>UL_E345003                   |

## Información de Embalaje

|                                |                 |
|--------------------------------|-----------------|
| Embalaje Nivel 1               | box 1 piece     |
| Unidades                       |                 |
| Embalaje Nivel 1 Ancho         | 92 mm           |
| Embalaje Nivel 1 Largo         | 95 mm           |
| Embalaje Nivel 1 Alto          | 50 mm           |
| Embalaje Nivel 1 Peso          | 0.28 kg         |
| Embalaje Nivel 1 EAN           | 4013614400063   |
| Package Level 2 Units          | carton 40 piece |
| Package Level 2 Width          | 280 mm          |
| Package Level 2 Depth / Length | 395 mm          |
| Package Level 2 Height         | 210 mm          |
| Package Level 2 Gross Weight   | 11.586 kg       |
| Package Level 2 EAN            | 4013614408960   |

## Clasificaciones

|                                    |                                                         |
|------------------------------------|---------------------------------------------------------|
| Object Classification Code         | F                                                       |
| ETIM 4                             | EC000074 - Motor protective circuit-breaker             |
| ETIM 5                             | EC000074 - Motor protective circuit-breaker             |
| ETIM 6                             | EC000074 - Motor protection circuit-breaker             |
| ETIM 7                             | EC000074 - Motor protection circuit-breaker             |
| eClass                             | V11.0 : 27370401                                        |
| UNSPSC                             | 39121521                                                |
| IDEA Granular Category Code (IGCC) | 4845 >> 3 Pole Motor Circuit Protector Circuit Breakers |
| E-Number (Finland)                 | 3705990                                                 |
| E-Number (Sweden)                  | 3112122                                                 |

## Accessories

| Identifier      | Description                            | Type     | Quantity | Unit Of Measure |
|-----------------|----------------------------------------|----------|----------|-----------------|
| 1SAM201901R1001 | HKF1-11 Auxiliary Contact              | HKF1-11  | 1        | piece           |
| 1SAM201901R1201 | HKF1-11K Auxiliary Contact             | HKF1-11K | 1        | piece           |
| 1SAM201901R1002 | HKF1-20 Auxiliary Contact              | HKF1-20  | 1        | piece           |
| 1SAM201901R1202 | HKF1-20K Auxiliary Contact             | HKF1-20K | 1        | piece           |
| 1SAM201901R1004 | HKF1-01 Auxiliary Contact              | HKF1-01  | 1        | piece           |
| 1SAM201901R1003 | HKF1-10 Auxiliary Contact              | HKF1-10  | 1        | piece           |
| 1SAM201902R1002 | HK1-20 Auxiliary Contact               | HK1-20   | 1        | piece           |
| 1SAM201902R1202 | HK1-20K Auxiliary Contact              | HK1-20K  | 1        | piece           |
| 1SAM201902R1001 | HK1-11 Auxiliary Contact               | HK1-11   | 1        | piece           |
| 1SAM201902R1201 | HK1-11K Auxiliary Contact              | HK1-11K  | 1        | piece           |
| 1SAM201902R1003 | HK1-02 Auxiliary Contact               | HK1-02   | 1        | piece           |
| 1SAM201902R1203 | HK1-02K Auxiliary Contact              | HK1-02K  | 1        | piece           |
| 1SAM201902R1004 | HK1-20L Auxiliary Contact              | HK1-20L  | 1        | piece           |
| 1SAM201902R1204 | HK1-20LK Auxiliary Contact             | HK1-20LK | 1        | piece           |
| 1SAM201903R1002 | SK1-20 Signaling Contact               | SK1-20   | 1        | piece           |
| 1SAM201903R1202 | SK1-20K Signaling Contact              | SK1-20K  | 1        | piece           |
| 1SAM201903R1001 | SK1-11 Signaling Contact               | SK1-11   | 1        | piece           |
| 1SAM201903R1201 | SK1-11K Signaling Contact              | SK1-11K  | 1        | piece           |
| 1SAM201903R1003 | SK1-02 Signaling Contact               | SK1-02   | 1        | piece           |
| 1SAM201903R1203 | SK1-02K Signaling Contact              | SK1-02K  | 1        | piece           |
| 1SAM301901R1002 | CK1-20 Short Circuit Signaling Contact | CK1-20   | 1        | piece           |
| 1SAM301901R1001 | CK1-11 Short Circuit Signaling Contact | CK1-11   | 1        | piece           |

|                 |                                           |             |   |       |
|-----------------|-------------------------------------------|-------------|---|-------|
| 1SAM301901R1003 | CK1-02 Short Circuit Signaling Contact    | CK1-02      | 1 | piece |
| 1SAM201910R1001 | AA1-24 Shunt Trip                         | AA1-24      | 1 | piece |
| 1SAM201910R1002 | AA1-110 Shunt Trip                        | AA1-110     | 1 | piece |
| 1SAM201910R1003 | AA1-230 Shunt Trip                        | AA1-230     | 1 | piece |
| 1SAM201910R1004 | AA1-400 Shunt Trip                        | AA1-400     | 1 | piece |
| 1SAM201904R1010 | UA1-20 Undervoltage Release               | UA1-20      | 1 | piece |
| 1SAM201904R1001 | UA1-24 Undervoltage Release               | UA1-24      | 1 | piece |
| 1SAM201904R1002 | UA1-48 Undervoltage Release               | UA1-48      | 1 | piece |
| 1SAM201904R1003 | UA1-60 Undervoltage Release               | UA1-60      | 1 | piece |
| 1SAM201904R1004 | UA1-110 Undervoltage Release              | UA1-110     | 1 | piece |
| 1SAM201904R1008 | UA1-208 Undervoltage Release              | UA1-208     | 1 | piece |
| 1SAM201904R1005 | UA1-230 Undervoltage Release              | UA1-230     | 1 | piece |
| 1SAM201904R1006 | UA1-400 Undervoltage Release              | UA1-400     | 1 | piece |
| 1SAM201904R1007 | UA1-415 Undervoltage Release              | UA1-415     | 1 | piece |
| 1SAM201904R1009 | UA1-575 Undervoltage Release              | UA1-575     | 1 | piece |
| 1SAM201906R1102 | PS1-2-0-65 Busbar                         | PS1-2-0-65  | 1 | piece |
| 1SAM201906R1112 | PS1-2-1-65 Busbar                         | PS1-2-1-65  | 1 | piece |
| 1SAM201906R1122 | PS1-2-2-65 Busbar                         | PS1-2-2-65  | 1 | piece |
| 1SAM201916R1103 | PS1-3-0-100 Busbar                        | PS1-3-0-100 | 1 | piece |
| 1SAM201906R1103 | PS1-3-0-65 Busbar                         | PS1-3-0-65  | 1 | piece |
| 1SAM201916R1113 | PS1-3-1-100 Busbar                        | PS1-3-1-100 | 1 | piece |
| 1SAM201906R1113 | PS1-3-1-65 Busbar                         | PS1-3-1-65  | 1 | piece |
| 1SAM201916R1123 | PS1-3-2-100 Busbar                        | PS1-3-2-100 | 1 | piece |
| 1SAM201906R1123 | PS1-3-2-65 Busbar                         | PS1-3-2-65  | 1 | piece |
| 1SAM201916R1104 | PS1-4-0-100 Busbar                        | PS1-4-0-100 | 1 | piece |
| 1SAM201906R1104 | PS1-4-0-65 Busbar                         | PS1-4-0-65  | 1 | piece |
| 1SAM201916R1114 | PS1-4-1-100 Busbar                        | PS1-4-1-100 | 1 | piece |
| 1SAM201906R1114 | PS1-4-1-65 Busbar                         | PS1-4-1-65  | 1 | piece |
| 1SAM201906R1124 | PS1-4-2-65 Busbar                         | PS1-4-2-65  | 1 | piece |
| 1SAM201916R1105 | PS1-5-0-100 Busbar                        | PS1-5-0-100 | 1 | piece |
| 1SAM201906R1105 | PS1-5-0-65 Busbar                         | PS1-5-0-65  | 1 | piece |
| 1SAM201916R1115 | PS1-5-1-100 Busbar                        | PS1-5-1-100 | 1 | piece |
| 1SAM201906R1115 | PS1-5-1-65 Busbar                         | PS1-5-1-65  | 1 | piece |
| 1SAM201906R1125 | PS1-5-2-65 Busbar                         | PS1-5-2-65  | 1 | piece |
| 1SAM201907R1101 | S1-M1-25 Power Infeed Block               | S1-M1-25    | 1 | piece |
| 1SAM201907R1102 | S1-M2-25 Power Infeed Block               | S1-M2-25    | 1 | piece |
| 1SAM201907R1103 | S1-M3-25 Power Infeed Block               | S1-M3-25    | 1 | piece |
| 1SAM201913R1103 | S1-M3-35 Power Infeed Block               | S1-M3-35    | 1 | piece |
| 1SAM201914R1002 | S1-PB1-25 Power Infeed Block              | S1-PB1-25   | 1 | piece |
| 1SAM301911R1001 | TS1-M3-S1 Terminal Spacer                 | TS1-M3-S1   | 1 | piece |
| 1SAM301912R1001 | TS1-M3-S2 Terminal Spacer                 | S1-M3-S2    | 1 | piece |
| 1SAM201908R1001 | BS1-3 Protection Cover                    | BS1-3       | 1 | piece |
| 1SAM201909R1001 | FS116 Screw Fixing Kit                    | FS116       | 1 | piece |
| 1SAM201914R1001 | PB1-1-32 Connecting Link                  | PB1-1-32    | 1 | piece |
| GJF1101903R0002 | SA2 - Terminals and Installation Material | SA2         | 1 | piece |
| 1SAM201911R1012 | IB132-F Enclosure                         | IB132-F     | 1 | piece |
| 1SAM201911R1010 | IB132-G Enclosure                         | IB132-G     | 1 | piece |
| 1SAM201911R1011 | IB132-Y Enclosure                         | IB132-Y     | 1 | piece |
| 1SAM201912R1010 | DMS132-G Door Mounting Kit                | DMS132-G    | 1 | piece |
| 1SAM201912R1011 | DMS132-Y Door Mounting Kit                | DMS132-Y    | 1 | piece |
| 1SAM201909R1021 | MSAH1 Shaft Supporter                     | MSAH1       | 1 | piece |
| 1SAM201920R1011 | MSHD-LTB Handles                          | MSHD-LTB    | 1 | piece |
| 1SAM201920R1012 | MSHD-LTY Handles                          | MSHD-LTY    | 1 | piece |
| 1SAM101923R0002 | MSMN Driver                               | MSMN        | 1 | piece |
| 1SAM101923R0012 | MSMNO Driver                              | MSMNO       | 1 | piece |
| 1SAM101924R0013 | MSOX-30 Driver Shaft                      | MSOX-30     | 1 | piece |
| 1SAM101924R0003 | MSOX-32 Driver Shaft                      | MSOX-32     | 1 | piece |

|                 |                |          |   |       |
|-----------------|----------------|----------|---|-------|
| 1SCA101647R1001 | OXS6X85 SHAFT  | OXS6X85  | 1 | piece |
| 1SCA108043R1001 | OXS6X105 SHAFT | OXS6X105 | 1 | piece |
| 1SCA101655R1001 | OXS6X130 SHAFT | OXS6X130 | 1 | piece |
| 1SCA101659R1001 | OXS6X180 SHAFT | OXS6X180 | 1 | piece |

Categorías

Productos y sistemas de baja tensión → Aparatos de control → Guardamotores → Guardamotores

Productos y sistemas de baja tensión → Interruptores automáticos → Guardamotores

