

SMARTY SERIES

TODAY'S DIGITAL INTELLIGENCE
MOVES YOUR GATE



WHAT WE DO

INNOVATION, TOP NOTCH MECHANICS AND NEVER-ENDING TECHNOLOGICAL RESEARCH ARE THE ELEMENTS THAT MAKE ROGER TECHNOLOGY A UNIQUE AND DIFFERENT COMPANY

Starting from our first day of work we immediately gave priority to the development and production of excellent, completely Italian mechanics, based only on top quality ferrous and non ferrous raw materials and guaranteed by impeccable production and surface treatment processes. It was just a few years later, in the 1990s, that we created the first major step in our history, by implementing a mass production line for completely robotised motors, thus becoming a reference outsourcer for major brands of the gate automation market.

PEOPLE, IDEAS AND PRODUCT EXPERIENCE

From the very beginning Roger Technology has evolved and grown because it's people believe that any bright idea can lead to great change in the future. Our people are passionate and innovative in their approach to every challenge, always pushing the boundaries to develop extraordinary products.

In our language we translate the word "experience" as passion. It is this passion that drives us in the development of revolutionary **new products** that serve the real needs of our customers. We understand that our customers want a product designed around the way that they work.

*Primo Florian
Founding partner
Engineering
and design*

*Dino Florian
Founding President
Development
and design*

*Renato Florian
Founding partner
Assembly
and quality*



OUR PLUSES

EXCELLENT RAW MATERIALS

Steel, ductile cast iron, aluminium, bronze, copper and titanium have always been the main and exclusive raw materials used in the advanced engineering processes of our company.



PRODUCTION TECHNOLOGY

At Roger Technology all internal manufacturing is carried out on optimised production lines making use of very advanced technology. We have invested heavily in robotics and automated all product manufacturing phases. This ensures that all components and semi-finished products are highly reliable and are fully compliant with our exceptionally high quality standards.



INTERNAL ASSEMBLY

Our highly qualified and dedicated staff oversee the fitting and assembly stages. Every piece of equipment is checked by our all italian personnel to ensure that we deliver reliable products to our customers.



MADE IN ITALY

All solutions, products, design and the complete production process of Roger Technology is developed in Italy with the use of materials of primary quality always found in the market trough partner suppliers that share the same passion and professionalism of our company in developing products technologically reliable, efficient and simple in the way that they have been made for being installed and used.



BRUSHLESS MOTOR

A DIGITAL BRUSHLESS MOTOR WITH PERMANENT MAGNETIC FIELD, DIGITAL ELECTRONICS FOR THE COMPLETE MANAGEMENT OF THE AUTOMATION SYSTEM CONTROL. DESIGNED FOR SUPER INTENSIVE USE WITH THE ADDED BENEFIT OF A SUPER LOW POWER CONSUMPTION: THIS IS ROGER BRUSHLESS

We are the creators at the heart of the product!
All of our digital brushless motors are designed and manufactured in our own factories. Using dedicated automated machines the motors are wound with ultimate precision.

DIGITAL BRUSHLESS MOTOR

Revolutionary and innovative digital Brushless motor with permanent magnetic field, three-phase sinusoidal power supply with native encoder that allows super-intensive use of the automation system with extremely low power consumption, not only providing 100% compliance with all the automation system management and safety rules, but setting new standards in gate safety.

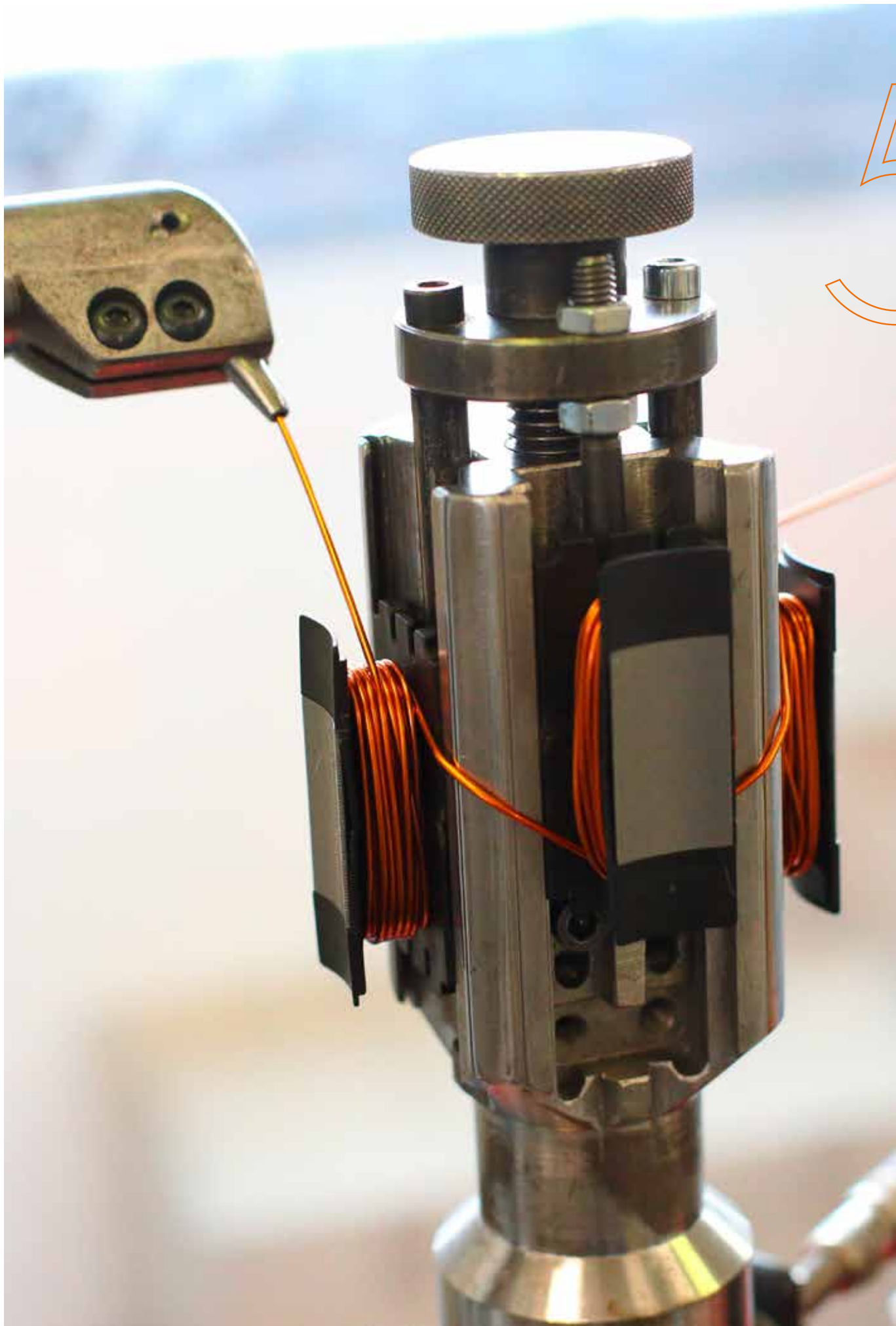
NEW GENERATION OF ELECTRONICS

The new control unit with onboard digital Brushless controller. Without traditional relays and due to the revolutionary MOSFET quadrant system and its control technology entirely based on a DSP (Digital Signal Processor) microcontroller, it represents a new generation of electronic cards created to safely handle all movement phases of the automation system.

ENGINEERING PASSION

All the mechanical components and gears are manufactured in steel, cast iron and bronze. The automation system casings are made from titanium-reinforced die-cast aluminium. All the gears are inspected and assembled on high-quality bearings and inserted on precise seats machined to provide absolute precision between the axes.

**A TECHNOLOGY THAT OFFERS MAXIMUM PERFORMANCE
BUT CONSUMES LESS POWER THAN OTHER MOTORS**



5

COMPLETELY BRUSHLESS

THE REVOLUTIONARY DIGITAL MOTOR WITH 12 UNIQUE FEATURES



3-PHASE DIGITAL BRUSHLESS MOTOR

A very powerful motor with substantial torque. The motor is compact and neat due to the special concentrated coil windings, it is powered by a **three phase sinusoidal system**.



NO PROBLEM IN THE EVENT OF POWER FAILURE

With the help of internal or external batteries and the associated battery charging card, your automation system continues to operate for a considerable time **even during prolonged power cuts**, ensuring many more operations than traditional technologies.



SPEED, ACCELERATION AND DECELERATION WITH EXTREME ELEGANCE

The automation system with brushless digital technology creates perfect and elegant movements. With a constant **force and torque** at every point and with the option of varying the speed on deceleration and acceleration the system can be managed with maximum safety.



EXTREMELY LOW ENERGY CONSUMPTION

A motor that can operate at low voltage in super-intensive use and which can operate in environments with extremely demanding weather conditions while maintaining **very low energy consumption and absorption levels**.



DIGITAL AND VECTORIAL AUTOMATION CONTROLLER

The BRUSHLESS digital controller, which operates at low voltage **24V/36V DC**, allows 100% control of the automation system in digital mode. Due to its operation entirely based on a DSP microcontroller the travel and all the movements of your automation system can therefore be programmed and customised easily, precisely and elegantly.



MOTOR AT AMBIENT TEMPERATURE

The brushless motor was created with the main goal of being a motor for super intensive use and **with a 99% efficiency**. Regardless of how many operations the engine performs in a day, it always remains cold or at the most reaches the outside ambient temperature.



THE DIGITAL SILENCE OF THE MOTOR

One great impact is the **silence** or the near absence of noise, generated by the BRUSHLESS motor during all its movements.



MOTOR FOR SUPER-INTENSIVE USE

We wanted to surprise our customers with a product that was fundamentally different to any other product on the market. Fact: our motor remains **permanently cold** even after many days of super intensive use.



IMPACT, OBSTACLE DETECTION AND REVERSAL IN TOTAL SAFETY

Thanks to digital technology we are able to **detect an obstacle** and reverse the motor instantly, by simply specifying the torque of the motor, the sensitivity, the time and the travel of the reversal. All in full compliance with safety requirements.



ONBOARD NATIVE DIGITAL ENCODER

The BRUSHLESS motor has a highly advanced **native digital encoder** that controls management of automation systems in a safe, precise and extremely elegant manner.



SIMPLE INSTALLATION WITH A SINGLE 3-WIRE CABLE

The BRUSHLESS motor can be installed by simply connecting it using three wires! What could be easier? This will provide full digital management of your automation system thanks to the **SENSELESS** and **SENSORED** (absolute encoder) technology incorporated in the BRUSHLESS sliding gate motors.



ADVANCED PRECISION ENGINEERING TO OBTAIN OPTIMAL MOTOR PERFORMANCE

We have created a mechanism that gives you the opportunity to get **the maximum performance out of the motor**. A product which combines the quality of the internal production processes, the mechanical processing and the use of high quality ferrous and non-ferrous materials.

WHY BRUSHLESS?

DIGITAL, SMART, POWERFUL, ELEGANT, ROBUST AND ALL-ITALIAN



1 STURDY, DURABLE FORK AND BALL SCREW

The fork and ball screw rotating on the worm screw are manufactured from superior quality materials. In particular, the bronze nut screw features a completely threaded inner surface and is press-fit onto the steel fork to ensure a precise mechanical connection.

2 HIGH PRECISION ENGINEERING

Dual bevel gear reduction gear unit manufactured entirely from superior quality hardened steel, cast iron and bronze. All gears are assembled with superior quality double shielded (ZZZ) ball bearings to ensure absolute precision between axes.

3 REINFORCED LOCK RELEASE LEVER

The release lever is operated with a practical and sturdy customisable barrel lock and key. The operating principle is based on an extremely robust steel pin which actuates the release mechanism of the main gear, making it possible to unlock the automation system in all conditions, even when subjected to significant mechanical load by the gate leaf.

4 EXTERNAL LOCK RELEASE SYSTEM

The external lock release system is quick and very easy to use, with a steel cable making it possible mechanically release the reduction gear unit directly from the exterior of the unit itself. The extremely sturdy lock release system is operated by a lever connected to a universal joint linkage.

5 STURDY FASTENER BRACKETS

The new SMARTY Brushless digital motor is equipped with weld-on brackets designed and sized specifically for installation on particularly large and heavy condominium or industrial gates. The brackets are manufactured in galvanised carbon steel. The rear bracket is available as long or short versions.

6 BRUSHLESS DIGITAL MOTOR

Digital brushless motor based on a permanent magnetic field which uses neodymium iron-boron magnets inside the rotor. With innovative high density coil windings powered by a sinusoid three-phase power system, SMARTY series motors operate at low voltage (36V DC). The motor is extremely compact and operates at normal ambient temperature, making it suitable for extremely intense use and extraordinarily energy efficient.

7 ADJUSTABLE ALUMINIUM TRAVEL LIMITS

The SMARTY swing gate motor is factory-fitted with two titanium-reinforced aluminium travel limits in the gate open and gate closed positions. These travel limits are adjustable feature a completely threaded inner surface to form a solid mechanical connection with the worm gear during contact with the fork in both directions of movement of the motor. The travel limits can be adjusted easily adjustable, even with the motor already installed, by simply removing the aluminium cover.

8 REMOVABLE PROTECTION BRUSHES

The extruded aluminium casing includes two specific guides for brushes preventing accidental contact and protecting and cleaning the worm gear and the relative fork. The brushes are removable and can even be replaced with the motor installed.

9 ELEGANT REINFORCED ALUMINIUM CASING

The casing enclosing the gear motor and the relative worm screw is made entirely from aluminium, while all parts of the casing subject to mechanical wear and friction are generously reinforced. The worm screw cover casing, made completely from anodised aluminium, is fastened to the motor casing with through screws passing through the entire width of the casing itself.

10 DSP TECHNOLOGY MICRO-CONTROLLER

The BRUSHLESS motor is controlled via a single 3-core cable between the motor itself and the 36 V DC digital controller. The new digital control unit is based on a 70 Mips micro-controller which calculates and estimates the position of the magnetic field completely digitally to permit SENSORLESS control of your automation system, or uses EMA technology to ensure absolute gate leaf position precision.

11 4 QUADRANT MOSFET DIGITAL INVERTER








Equipped with an extremely potent and revolutionary 12 Mosfet, 4 quadrant sinusoidal control digital inverter, the digital controller of the digital three-phase sinusoidal motor with field oriented control uses vector frequency modulation to control the two motors and, as a result, the two gate leaves independently.

12 MECHANICAL ABSOLUTE POSITIONER

The EMA (magnetic absolute encoder) is a digital mechanical encoder which measures and determines the positions of the gate leaves with absolute precision, during both opening and closing operation. This system communicates the absolute mechanical position of the gate leaves to the digital controller directly via a three-phase connection to the motor, making it unnecessary to repeat the self-acquisition procedures after prolonged power outages or manual release.



TECHNICAL SPECIFICATIONS

	SMARTY5	SMARTY5R5	SMARTY7	SMARTY7R	SMARTY4/HS
DESCRIPTION	Low voltage BRUSHLESS electromechanical gear motor for extremely heavy duty. Irreversible. For swing gates with gate leaf up to 5 m.	Low voltage BRUSHLESS electromechanical gear motor for extremely heavy duty. Reversible. For swing gates with gate leaf up to 5 m.	Low voltage BRUSHLESS electromechanical gear motor for extremely heavy duty. Irreversible. For swing gates with gate leaf up to 7 m.	Low voltage BRUSHLESS electromechanical gear motor for extremely heavy duty. Reversible. For swing gates with gate leaf up to 7 m.	Low voltage HIGH SPEED Irreversible BRUSHLESS electromechanical gear motor for extremely heavy duty. For swing gates with gate leaf up to 4 m.
POWER LINE SUPPLY	230V AC - 50Hz	230V AC - 50Hz	230V AC - 50Hz	230V AC - 50Hz	230V AC - 50Hz
MOTOR POWER SUPPLY	36V	36V	36V	36V	36V
POWER RATING	200W	200W	200W	200W	200W
FREQUENCY OF USE	Intensive use 	Intensive use 	Intensive use 	Intensive use 	Intensive use 
THRUST	600 - 7000N	600 - 6500N	600 - 7000N	600 - 6500N	600 - 4500N
OPERATING TEMPERATURE	-20 C° +55 C°	-20 C° +55 C°	-20 C° +55 C°	-20 C° +55 C°	-20 C° +55 C°
PROTECTION LEVEL	IP44	IP44	IP44	IP44	IP44
REDUCTOR TYPE	Irreversible	Reversible 	Irreversible	Reversible 	Irreversible
MANOEUVRE SPEED	1,6 cm/s	1,8 cm/s	1,6 cm/s	1,6 cm/s	2 - 1 cm/s
OPENING TIME AT 90°	25-40 s	20-40 s	35-50 s	35-50 s	15-25 s
STROKE	370 mm	370 mm	520 mm	520 mm	370 mm
LIMIT SWITCH	Mechanical stopper in opening and closing	Mechanical stopper in opening and closing	Mechanical stopper in opening and closing	Mechanical stopper in opening and closing	Mechanical stopper in opening and closing
RECOMMENDED DIGITAL CONTROLLERS	230V: EDGE1/BOX - 115V: EDGE1/BOX/115	230V: EDGE1/BOX - 115V: EDGE1/BOX/115	230V: EDGE1/BOX - 115V: EDGE1/BOX/115	230V: EDGE1/BOX - 115V: EDGE1/BOX/115	230V: EDGE1/BOX - 115V: EDGE1/BOX/115
ENCODER	Digital native encoder SENSORLESS 48 PPR	Digital native encoder SENSORLESS 48 PPR + EMA	Digital native encoder SENSORLESS 48 PPR	Digital native encoder SENSORLESS 48 PPR + EMA	Digital native encoder SENSORLESS 48 PPR
OPERATING CYCLES PER DAY (OPENING/ CLOSING - 24 HOURS NO STOP)	1000	1000	1000	1000	1000
MAXIMUM DIMENSION PRODUCT IN MM (L X W X H)	1162 x 116 x 165	1162 x 116 x 165	1312 x 116 x 165	1312 x 116 x 165	1162 x 116 x 165
PRODUCT WEIGHT PACKED (KG)	16,5	16,7	17,2	17,4	16,5



Brushless Motor



Intensive Use



High Speed Motor



Reversible Motor



PACKAGING

SMARTY 5 - SMARTY 4HS
 L.: 119 cm
 W.: 12,5 cm
 H. 16 cm

SMARTY 7
 L.: 134,5 cm
 W.: 12,5 cm
 H. 16 cm

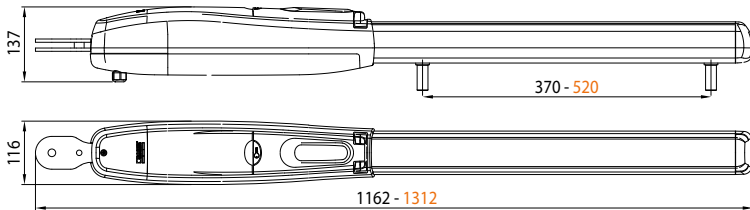
FUNCTIONS

OF AUTOMATED SLIDING GATE MOTOR

DESCRIPTION	SMARTY 5 - SMARTY 5R5	SMARTY 7 - SMARTY 7R	SMARTY 4 HS
MAXIMUM LENGTH OF SINGLE GATE LEAF	UP TO 5 METERS	UP TO 7 METERS	UP TO 4 METERS
DIGITAL CONTROLLER	EDGE1/BOX 36V DC (SMARTY 5R5 since version P3.20)	EDGE1/BOX 36V DC	EDGE1/BOX 36V DC (since version P3.05)
RADIO RECEIVER TYPE	H93/RX20/1 and H93/RX22A/1 with fixed code connection H93/RX2RC/1 with rolling code connection	H93/RX20/1 and H93/RX22A/1 with fixed code connection H93/RX2RC/1 with rolling code connection	H93/RX20/1 and H93/RX22A/1 with fixed code connection H93/RX2RC/1 with rolling code connection
MOTOR POWER	36 V DC, with self-protected inverter	36 V DC, with self-protected inverter	36 V DC, with self-protected inverter
MOTOR POWER CONTROL TECHNOLOGY (ETPC)	Field oriented control (FOC) with SENSORLESS technology	Field oriented control (FOC) with SENSORLESS technology	Field oriented control (FOC) with SENSORLESS technology
ENCODER TYPE	Digital, with 16 bit maximum resolution	Digital, with 16 bit maximum resolution	Digital, with 16 bit maximum resolution
EMA SYSTEM	SMARTY 5 - optional / SMARTY 5R5 Standard	SMARTY 7 - optional / SMARTY 7R Standard	Optional
MAINS POWER SUPPLY	230V 50/60 Hz	230V 50/60 Hz	230V 50/60 Hz
BATTERY OPERATION	(optional) 2 external batteries 12V DC, 4.5 Amp/h	(optional) 2 external batteries 12V DC, 4.5 Amp/h	(optional) 2 external batteries 12V DC, 4.5 Amp/h
ENERGY CONSUMPTION	Very low consumption	Very low consumption	Very low consumption
NUMBER OF MOTORS	1 - 2 motors	1 - 2 motors	1 - 2 motors
POWER SUPPLY FOR ACCESSORIES	24V DC	24V DC	24V DC
FLASHING LIGHT TYPE	24V DC LED	24V DC LED	24V DC LED
OUTPUT FOR GATE OPENING INDICATOR AND AUTOMATION SYSTEM ON WARNING LIGHT	✓	✓	✓
OUTPUT FOR COURTESY LIGHT	40W	40W	40W
TIMED AND GUARANTEED AUTOMATIC CLOSING	✓	✓	✓
GATE EDGE SAFETY MANAGEMENT, 8.2KΩ OR STANDARD	✓	✓	✓
PHOTOCELL TEST AND SAFETY DEVICE MANAGEMENT	✓	✓	✓
LIMIT SWITCH TYPE	Adjustable open and closed position mechanical travel limits	Adjustable open and closed position mechanical travel limits	Adjustable open and closed position mechanical travel limits
SEPARATE MANAGEMENT FOR MOTOR 1 - 2	✓	✓	✓
FORCE ADJUSTMENT IN NOMINAL MOVEMENT	✓	✓	✓
FORCE ADJUSTMENT IN START-UP AND DECELERATION	✓	✓	✓
OBSTACLE DETECTION - MOTOR REVERSAL	✓	✓	✓
ADJUSTMENT IMPACT FORCE SEPARATE MOTOR 2	✓	✓	✓
OPENING AND CLOSING SPEED SETTING	✓	✓	✓
DECELERATION DURING OPENING AND CLOSING	✓	✓	✓
STARTING ACCELERATION (SOFT-START) FOR OPENING AND CLOSING MANOEUVRES	✓	✓	✓
SAFEGUARDED CLOSURE/OPENING FUNCTION	✓	✓	✓
MOTOR STOPPING DISTANCE AND BRAKING DISTANCE	✓	✓	✓
PARTIAL OPENING CONTROL	Pedestrian entry	Pedestrian entry	Pedestrian entry
HUMAN PRESENCE CONTROL	✓	✓	✓
MECHANICAL LOCK AND MECHANICAL ELECTRO-LOCK MANAGEMENT	✓	✓	✓
CONDOMINIUM FUNCTION	✓	✓	✓
SAFETY DEVICE CONFIGURATION	✓	✓	✓
INSTALLATION TEST FUNCTION	(prog button)	(prog button)	(prog button)
OPERATING TEMPERATURE	-20°C / +55°C	-20°C / +55°C	-20°C / +55°C
INVERTER THERMAL PROTECTION	✓	✓	✓
CURRENT ABSORPTION MAPPING SYSTEM	(MCA)	(MCA)	(MCA)
RESTORE FACTORY DEFAULT VALUES	✓	✓	✓
INFORMATION ON USE OF MOTOR	✓	✓	✓
INSTALLER SECURITY PASSWORD MANAGEMENT	✓	✓	✓
MAINTENANCE ALARM MANAGEMENT	✓	✓	✓

INSTALLATION

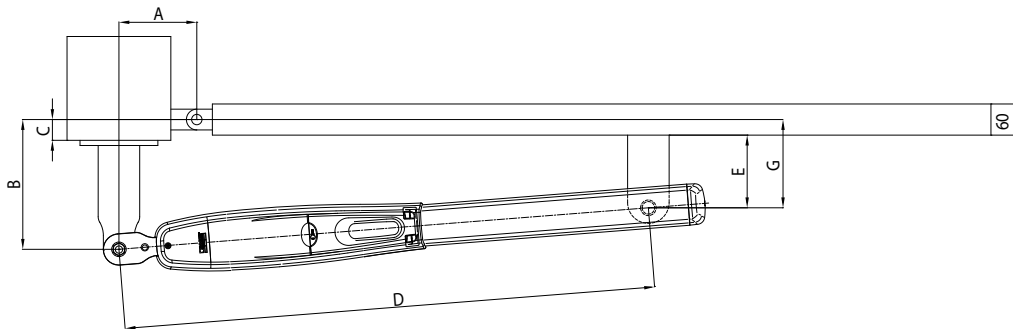
DIMENSIONS



SMARTY4/HS - SMARTY5 - SMARTY5R5
 SMARTY7 - SMARTY7R

Note: all measurements in the drawings are in millimetres

PREPARATIONS FOR STANDARD INSTALLATION



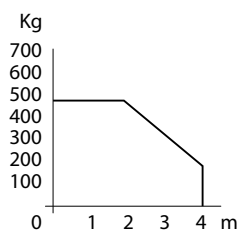
OPERATING LIMITS

SMARTY 5 / 5R5 / 4HS (Max Run = 370 mm)

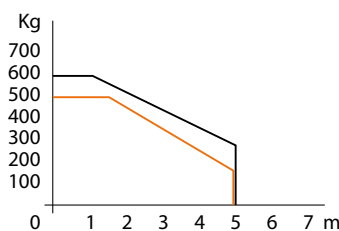
A	B	C (max)	D (max)	E	G	α°
150	150	120	1030	100	130	97°
150	170	120	1030	100	130	96°
150	190	120	1030	100	130	95°
150	200	120	1030	100	130	95°
150	220	120	1030	100	130	90°
170	150	120	1030	100	130	103°
170	170	120	1030	100	130	102°
170	200	120	1030	100	130	90°
185	185	120	1030	100	130	90°
200	160	120	1030	100	130	92°

SMARTY 7 / SMARTY 7R (Max Run = 520 mm)

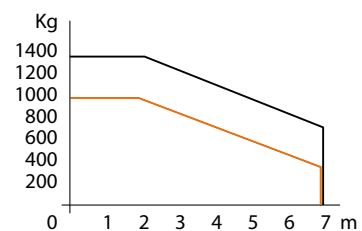
A	B	C (max)	D (max)	E	G	α°
200	200	200	1180	140	170	98°
200	230	200	1180	140	170	97°
200	260	200	1180	140	170	96°
200	280	200	1180	140	170	95°
200	300	200	1180	140	170	93°
220	220	200	1180	140	170	102°
220	250	200	1180	140	170	100°
220	280	200	1180	140	170	93°
250	200	200	1180	140	170	106°
250	250	200	1180	140	170	94°



SMARTY4/HS



SMARTY5 - SMARTY5R5



SMARTY7 - SMARTY7R


OPTIONAL ACCESSORIES

SMARTY: EVERYTHING YOU NEED FOR A COMPLETE, PROFESSIONAL INSTALLATION

	RL669	Kit for release from outside without handle for series SMARTY		RL670	European cylinder key for release system series SMARTY
	RL671	Metallic wire length 3mt for release from outside		R99/C/001	Signboard "Automatic Opening"
	SMARTY/EMA	Module Encoder Magnetic Absolute for SMARTY Series			

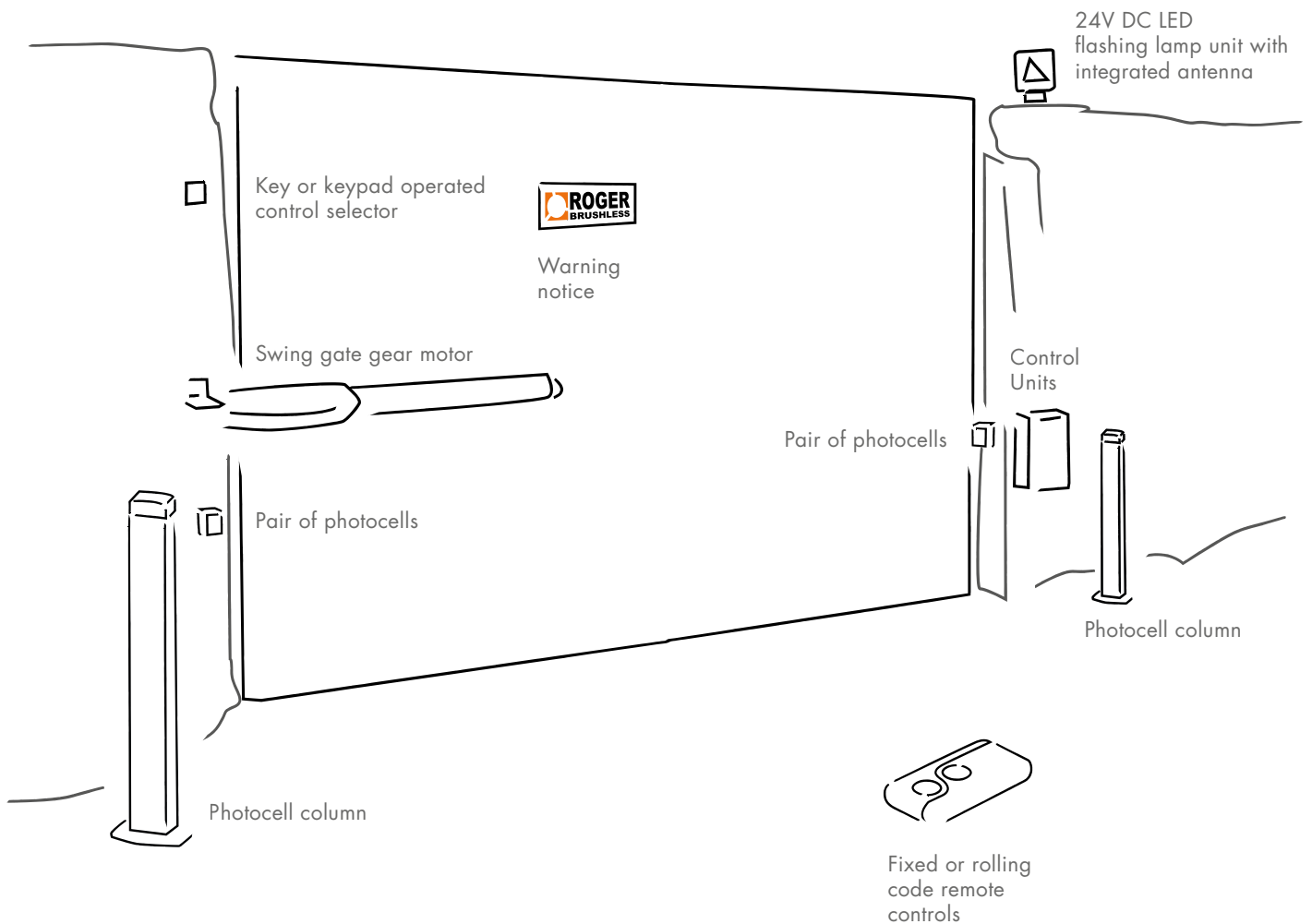
STANDARD ACCESSORIES

Always included in the individual product package or kit

			SMARTY5	SMARTY5R5	SMARTY7	SMARTY7R	SMARTY4/HS
	MC782	Kit 2 mechanical stop	✓	✓	✓	✓	✓
	SMARTY/EMA	Module Encoder Magnetic Absolute		✓		✓	
	KT237	Kit 3 hinge plates short, to weld	✓	✓			✓
	KT238	Kit 3 hinge plates long series, to weld			✓	✓	

STANDARD INSTALLATION

A PRACTICAL EXAMPLE FOR YOUR SUCCESSFUL INSTALLATION





EMA

ABSOLUTE ENCODER NEVER LOSES TRACK OF THE POSITION OF YOUR GATE FOR TOTAL SAFETY, ALWAYS!

The EMA (magnetic absolute encoder) is a digital mechanical encoder which measures and determines the positions of the gate leaves with absolute precision, during both opening and closing operation. This system communicates the absolute mechanical position of the gate leaves to the digital controller directly via a three-phase connection to the motor, making it unnecessary to repeat the self-acquisition procedures after prolonged power outages or manual release.



MEASURES
with millimetre precision



CALCULATES
the absolute position



COMMUNICATES
the exact position
of you gate continuously

15



PREMIUM DEALER / PROFESSIONAL DEALER



100% Made in Italy

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