Errata corrige
MhouseKit WG2

IS0029A00EN_29-12-2010

- **Replace the model of gearmotor and control unit:**

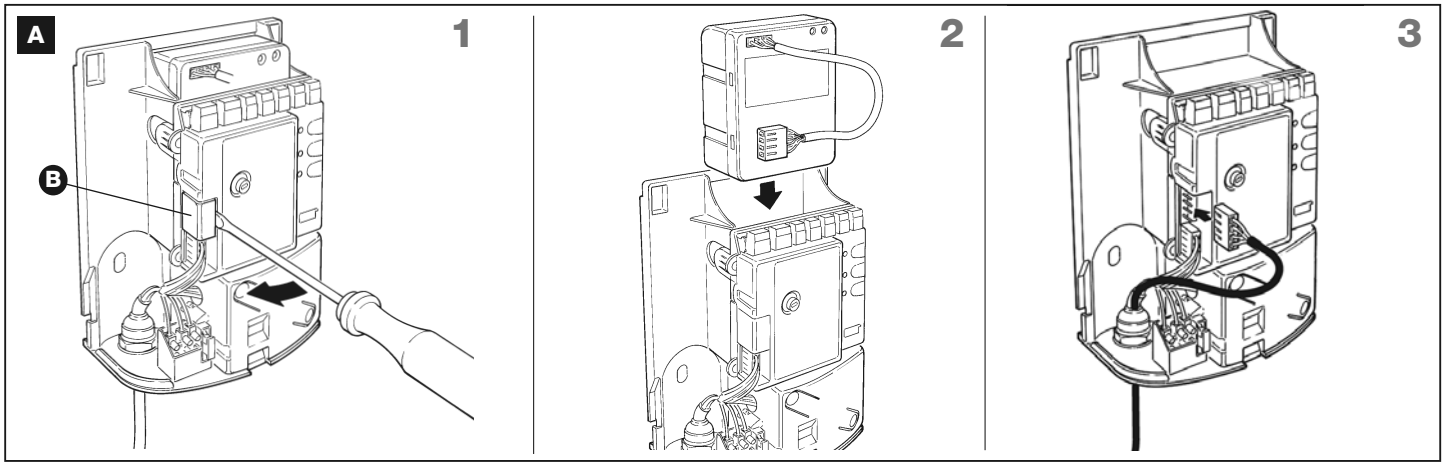
  "WG1" = "**WG1SK**"
  "CL2" = "**CL2S**"

- **Further information:**

1 - INSTALLING THE PR1 BUFFER BATTERY (fig. A)

CAUTION! - The electric connection of the battery to the control unit must only be made after completing all installation and programming phases, as the battery constitutes an emergency power supply.

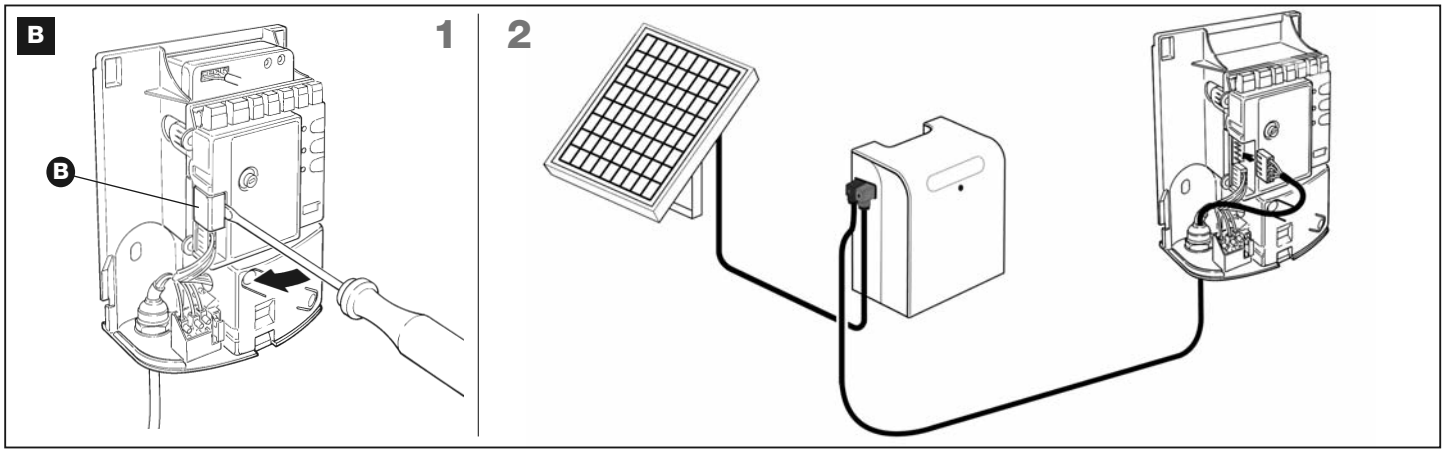
To install and connect the buffer battery PR1 to the control unit, refer to **fig. A** and the PR1 instruction manual.
When the automation is powered by the buffer battery, 60 seconds after a manoeuvre is completed, the control unit automatically switches off the output "ECS-bus" (and all connected devices), output Flash and all leds, with the exception of the ECSbus led, which flashes at slower intervals; this indicates the "Standby" function. When the control unit receives a command, it restores normal operation (with a short delay). This function is used to reduce consumption; an important factor when the unit is powered by battery.



2 - INSTALLING THE PF SOLAR POWER SUPPLY SYSTEM (fig. B)

CAUTION! - When the automation is powered exclusively by the solar power system "PF", IT MUST NEVER BE POWERED at the same time by the mains.

To connect the PF solar power system to the control unit, refer to **fig. B** and the PF instruction manual.
When the automation is powered by the solar panel, 60 seconds after a manoeuvre is completed, the control unit automatically switches off the output "ECSbus" (and all connected devices), output Flash and all leds, with the exception of the ECSbus led, which flashes at slower intervals; this indicates the "Standby" function. When the control unit receives a command, it restores normal operation (with a short delay). This function is used to reduce consumption; an important factor when the unit is powered by photovoltaic panels.



3 - CALCULATING THE MAXIMUM NUMBER OF CYCLES PER DAY

This product is specifically designed to operate also with the PF solar power supply system. Special provisions have been envisaged to minimise energy consumption when the automation is stationary, by turning off all devices not essential to operation (for example photocells and the key-operated selector switch). In this way all energy available and stored in the battery is used to move the gate.

Caution! - When the automation is powered by the solar power system "PF", IT MUST NEVER BE POWERED at the same time by the mains.

Application limits: maximum possible number of cycles per day within a set period of the year

The PF solar power system enables complete power autonomy of the automation, until the energy produced by the photovoltaic panel and stored in the battery remains above the amount consumed during gate manoeuvres. A simple calculation enables an estimate of the maximum number of cycles per day performed

by the automation in a certain period of the year, provided that a positive energy balance is maintained.
The first step in **calculating the energy available**, is dealt with in the PF instruction manual; the second step in **calculating the energy consumed** and therefore the maximum number of cycles per day, is dealt with in this chapter.

Method for calculating the maximum number of cycles per day

Calculating the energy available

To calculate the energy available (refer also to the PF instruction manual) proceed as follows:

01. On the terrestrial map supplied in the PF kit instruction manual, locate the point of system installation; then read the value **Ea** and the degrees of **latitude** of this location (E.g. Ea = 14 and degrees = 45°N)

02. On the graphs (North or South) supplied in the PF kit instruction manual, locate the curve for the location's **latitude** (e.g. 45°N)

03. Choose the **period of the year** on which to base the calculation, or select **the lowest point** of the curve to calculate **the worst period** of the year; then read the corresponding value Am (e.g. December, January: Am= 200)

04. Calculate the value of energy available **Ed** (produced by the panel) multiplying: Ea x Am = Ad (e.g. Ea = 14; Am = 200 then Ed = 2800)

Calculating the energy consumed

To calculate the energy consumed by the automation, proceed as follows:

05. On the table below, select the box corresponding to the intersection between the line with the **weight** and the column with the **opening angle** of the gate leaf. The box contains the value of the **severity index** (K) for each manoeuvre (e.g. WG2S with a leaf of 180 Kg and opening of 95°; K = 105)

	Opening angle		
Leaf weight	≤90°	90÷105°	105÷120°
< 100 Kg	61	76	105
100-150 Kg	72	92	138
150-200 Kg	84	105	200
200-250 Kg	110	144	336

06. On the table below, select the box corresponding to the intersection between the line with the value Ad and the column with the value K. The box contains the maximum possible number of cycles per day (e.g. Ad = 2800 and K= 105; cycles per day ≈ 22)

Maximum possible number of cycles per day											
Ad	**K≤75**	**K=100**	**K=125**	**K=150**	**K=175**	**K=200**	**K=225**	**K=250**	**K=275**	**K=300**	**K≥325**
9500	123	92	74	61	53	46	41	37	33	31	28
9000	116	87	70	58	50	44	39	35	32	29	27
8500	109	82	66	55	47	41	36	33	30	27	25
8000	103	77	62	51	44	39	34	31	28	26	24
7500	96	72	58	48	41	36	32	29	26	24	22
7000	89	67	54	45	38	34	30	27	24	22	21
6500	83	62	50	41	35	31	28	25	23	21	19
6000	76	57	46	38	33	29	25	23	21	19	18
5500	69	52	42	35	30	26	23	21	19	17	16
5000	63	47	38	31	27	24	21	19	17	16	14
4500	56	42	34	28	24	21	19	17	15	14	13
4000	49	37	30	25	21	19	16	15	13	12	11
3500	43	32	26	21	18	16	14	13	12	11	10
3000	36	27	22	18	15	14	12	11	10	9	8
2500	29	22	18	15	13	11	10	9	8	7	7
2000	23	17	14	11	10	9	8	7	6	6	5
1500	16	12	10	8	7	6	5	**Area of use not recommended**			
1000	9	7	6								

If the number obtained is too low for the envisaged use or is located in the "area not recommended for use", the use of 2 or more photovoltaic panels may be considered, or the use of a photovoltaic panel with a higher power. Contact the Mhouse technical assistance service for further information.

The method described enables the calculation of the maximum possible number of cycles **per day** that can be completed by the automation while running on solar power. The calculated value is considered an average value and the same for all days of the week. Considering the presence of the battery, which acts as an energy "storage depot", and the fact that the battery enables automation autonomy also for long periods of bad weather (when the photovoltaic panel produces very little energy) it may be possible to exceed the calculated maximum possible number of cycles per day, provided that the average of 10-15 days remains within the envisaged limits.

The table below specifies the maximum possible number of cycles, according to the manoeuvre's **severity index** (K), using exclusively **the energy stored** by the battery. It is considered that initially the battery is completely charged (e.g. after a prolonged period of good weather or recharging via the optional PCB power supply unit) and that the manoeuvres are performed within a period of 30 days.

Maximum number of cycles using exclusively battery power										
K≤75	**K=100**	**K=125**	**K=150**	**K=175**	**K=200**	**K=225**	**K=250**	**K=275**	**K=300**	**K≥325**
741	556	445	371	318	278	247	222	202	185	171

When the battery runs out of the stored energy, the led starts to indicate the battery low signal by flashing briefly every 5 seconds, accompanied by a "beep".

• Technical specifications of WG1SK and CL2S; replace the following items:

– WG1SK

Nominal thrust	460 N
No-load speed	21 mm/s
Speed at nominal torque	17 mm/s
Maximum frequency of cycles	30 cycle/hour
Rated current absorption	1,1 A; on start-up the maximum absorbed current is 3.5 A for a maximum interval of 2 s

– CL2S

Maximum frequency of cycles	30 cycle/hour
Mains power supply	230 Vac (+10% -10%) 50/60 Hz
Nominal absorbed power	120 W; on start-up power is 310 W for a maximum interval of 2 s
Motor outputs	2, for 24 Vdc motors with nominal current of 1.1A, on start-up, maximum current is 3.5 A for a maximum interval of 2 s
Radio Aerial input	50 Ω for RG58 or similar type cable
Protection rating	IP44
Dimensions / weight	180 x 240 h 110mm / 2,8 kg