Due to their added functions the SLR408 and 416 are especially suitable for operating solar lighting systems such as battery operated street and parking lighting but also for alarm and surveying systems.

Battery control :
- Automatic overcharge protection using the shunt principle (regulator).
- Optimal charge and charge maintenance via pulse charging (PWM) at charging frequency of 20 Hz.
- High efficiency up to 98 %.
- The shunt charge regulator allows charging even deep discharged batteries.
- The load is switched off by an intelligent High-Side Power Switch if the charge level falls below the discharge threshold. This power switch is short-circuit and overtemperatur protected.
- Red LED for displaying "*load off*".
- A blocking diode (Schottky diode) prevents the battery being discharged the by the solar module at night.

Lighting control :
- Brightness control via the solar module. Potentiometer P 3 adjusts level of brightness. Additional sensors are not necessary.
- The on-times of the lighting device during darkness are adjustable via a 24h/7d electronic clock with automatic summertime setting due to a calendar function.
- Up to 44 program steps for time and day of week programming.
- Green LED for "*lamp on*".

Options :
- **IRS 1007 :** Infrared motion detectors like the IRS1007 or LBP120 can limit the time of lighting to reduce current consumption. A model for two sensors is optionally available
- **KTY :** The temperature sensor KTY 881-8 adjusts the final voltage to the battery temperature by -4,5 mV/C/ cell.

Technical Data at 25°C		SLR 408		SLR 416	
Nominal system voltage	U_{sys}	12V	24V	12V	24V
full charge voltage	U_{ct}	14.1V	28.2V	14.1V	28.2V
maximum solar generator power	P_{max}	130W	260W	260W	520W
Load disconnect voltage	$U_{load\ off}$	11.0V	22.0V	11.0V	22.0V
load reconnect voltage	$U_{load\ on}$	12.5V	25.0V	12.5V	25.0V
maximum input voltage	U_{INmax}	50V			
maximum solar module current	I_{Kmax}	8 A		16 A	
maximum continuous load current	$I_{load\ max}$	8A		12A	
internal blade fuse		10A		15A	
quiescent current (UBatt=12V, LED off)	IV	$\leq$ 3mA			
operating temperature range	TA	-15...50°C			
max. admissable humidity		75 %			
ingress protection of enclosure		IP 65, splash proof			
case bottom		plastic		aluminium	
case cover		clear plastic cover			
terminals		4 mm²		10 mm²	
cable glands		1x PG9, 3x PG16		1x PG9, 3x M25x1,5	
overall dimensions		160 x 110 x 60mm		175 x 115 x 60mm	
weight incl. accessories		470g		670g	

Two-year warranty with proper use within the recommended ranges of operation.

Connection and installation:
- The system voltage has to agree with the rated voltage of the regulator. Check the 12/24V switch position on the board.
- To avoid voltage loss due to long wires, the solar regulator is to be set up close to the battery.
- Use heavy wires if possible (at least 2.5 mm²).
- It is essential to respect the correct polarity with all connecting wires.
- Do not expose the regulator to direct sunlight and high temperatures.
- When connecting the sensor KTY 881-8 to the terminals T/T the attached substitute resistor R19 (2KΩ) is omitted. To measure the battery temperature the sensor is fastened underneath a pole clamp.

brightness control :
- The brightness switch setting at potentiometer #3 has to be done at the appropriate daylight. Turn P3 to the left (factory setting) to switch on regardless of darkness. Switch on channel A at the clock with key [-]. The green LED and the output will go on. Now turn Poti 3 to the right until the LED goes off and slowly turn rigth again to the left until the LED burns again.

The load will switch on when:
- brightness level is below predefined level at potentiometer 3
- the clock is during a programmed ON time or manualy turned on (channel A = On, channel B is not used)
- the battery voltage is under 14.1V liegt (overload protection)
- the battery voltage is over 11.0V liegt (deep discharge protection) (an active discharge protection [red LED] reconnects > 12.5V)
- if an IR-sensor is connected it has to be activated

setting the clock :
- the time is preset in the factory and runs >1 year with an internal lithium cell. During solar operation this cell is cut off. To readjust the time press [M], [+], [ok] and set date and time with [−]/ [+]. Press [ok] each time to confirm.
- Up to 46 settings can be programmed. Each setting can be combined with 1..7 days of week. Summer/Wintertime change will be automatically depending of the internal calendar. No wireless time signal is necessary. There are several worldwide summertime definitions predefined

Programming is easy following the menu with the keys [M], [−], [+], [ok].
A new menu language can be set by pressing the keys:
    [M], [+], [ok], [+], [+], [ok], select language with [−] & [+]: German. Englisch, French, Italian, Netherland, Sweden and Denmark.

New time settings will be programmed like this:
press [M], >> menu: 'program'
    [ok] >> 'new time'
        [ok] >> 'channel A' (B not used)
            ON time:
            [ok] >> 'on'   [+] / [−] >> select 'on' / 'off'
                [ok] >> 'yes monday' [+] / [−] >> 'yes' / 'no'
                    ⋮   ⋮
                [ok] >> 'yes sunday' [+] / [−] >> 'yes' / 'no'
                [ok] >> 'time h'   [+] / [−] >> set 'h'
                [ok] >> 'time m'   [+] / [−] >> set 'minute'
                [ok] : confirm time
            OFF time:
            [ok] >> 'off'   [+] / [−] >> select 'off' / 'on'
            [ok] : and so on as above...
        press [M] after last time setting to leave this menu.

additional functions:
- change/delete time settings: [M], [ok], [+]/[−]
- manual settings: - press [-]shortly switch once until next programmed time switch.
-                          - press [-] 3 seconds for permanent switch, (**P**) lights up.
- vacation: switch on or off for several days.
- options :   [M], [+], [ok]
-                          - ON time counter
-                          - PIN code definition
- factory reset   deletes programmed times and time
- complete reset   press all 4 keys together and hold them