CT43P INTELLIGENT WIPER SWITCH
USER MANUAL

Primary switch   **Secondary switch**

CT43P is a microcontroller - based "intelligent switch" for operating three wiper motors; it provides all the functions for a proper windscreen cleaning.

- Voltage supply: 12V - 24V
- Fit for any d.c. motors (see output current) and for any kind of parking switch
- Activates/deactivates each wiper one by one
- **Synchronization in each selected mode**
- Three intermittent settings
- Perfect self parking position due to "dynamic brake"
- Wipe/wash program
- Dimmer input (if request)
- Standard switches size compatible
- Easy to install and to use
- reliable

Packet includes:
- no. 1 Primary switch CT43P
- no. 1 Secondary switch CT43P
- no. 1 Relay box CT43P
- no. 1 Eight poles flat cable L = 1m
- no. 1 Ten poles flat cable L = 10 cm
- no. 3 Four poles connector
- no. 2 Female 9,5 mm fast-on
- no. 1 Female 6,3 mm fast-on
- no. 1 Four poles minifit conn. with female pins (if required)
- no. 1 User manual

2. Primary switch controls and signalings

Push buttons scope

Controls are user friendly.
1. General ON/OFF switch
2. Increase speed / decrease time between strokes
3. Decrease speed / increase time between strokes

By keeping pressed no. 3 button more than one second, wipers will stop in park position.

Signalings

Three leds show wipers operation setting, as in following chart:

MODE	light	Flashing
FAST	▢ ▢ ▢	Fast slight blink
SLOW	▢ ▢ ■	Slow slight blink
2 sec. delay	■ ▢ ▢	2 Slow blink
4 sec. delay	■ ▢ ■	4 Slow blink
8 sec. delay	▢ ■ ■	8 Slow blink
OFF	■ ■ ■	Leds OFF
Wipe/wash	▢ ■ ▢	-----------------
Failure	Asymm.	Continuous

By pressing no. 2 or 3 button, mode will change and the leds:
- will flash as many time as delay time (in seconds) between strokes (4 flash if 4 seconds is the delay time selected between strokes).
- will have a light flash – slowly if SLOW speed is selected, quickly if FAST speed is selected.
NOTE: SLOW speed is the only one possible if one speed motors are used.

3. Wipe / Wash program

By keeping pressed no. 1 or no. 2 button more than one second, washing program will start.

| 3 sec. | 3 sec. | 4 sec. |

|=== Spray ====== Spray =====|
      |====== Wipe ======= Wipe ===|

To increase wash timing or to increase spray/wipe time, keep pressed no. 1 or no. 2 button.
After wipe/wash, wipers will return for operating in the previous selected mode.

4. Secondary switch controls and signalings

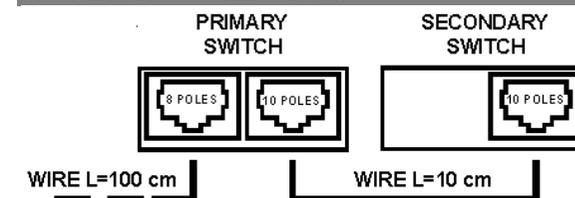This switch contains the buttons to activate/deactivate each wiper one by one (4-5-6).
3. ON/OFF wiper 1.
4. ON/OFF wiper 2.
5. ON/OFF wiper 3.
Buttons light if the respective wipers are on. Each wiper can be activated at any moment, even during the washing program.

5. Power supply

CT43P will operate on a power supply of 10 up to 30 V DC.
It works properly with battery of both 12V and 24V. **Insert connectors (linked to motors) before supply power.** When powered a lamp test is executed. CT43P will stay in stand-by, ready to operate.
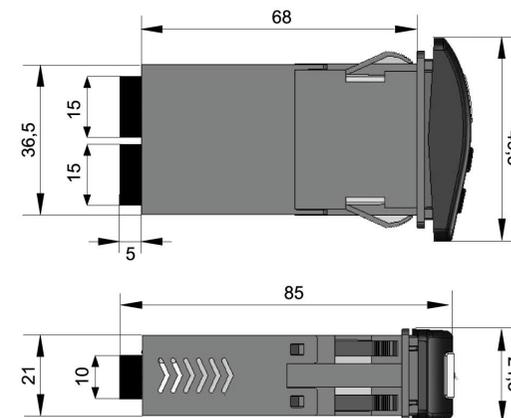
6. Switches connections

PRIMARY SWITCH   SECONDARY SWITCH

8 POLES   10 POLES   10 POLES

WIRE L=100 cm   WIRE L=10 cm

TO RELAY BOX

ATTENTION: inserting the 8 poles plug into the 10 poles connector will irreparably damage the connector and will be necessary to replace it.
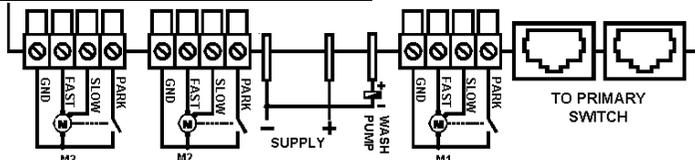
7. Switches dimensions
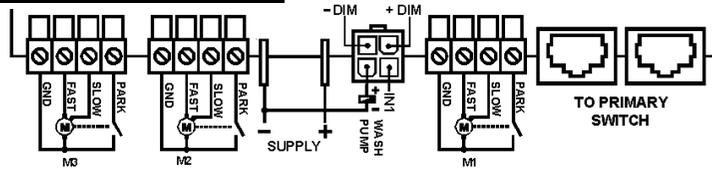
68
36,5
15
15
5
49,5

85
21
10
24,5

8. Relay box connections

Relay box has two telephone sockets to give the user the possibility to connect two different primary switches to the same relay box.
Follows the relay box wiring scheme:

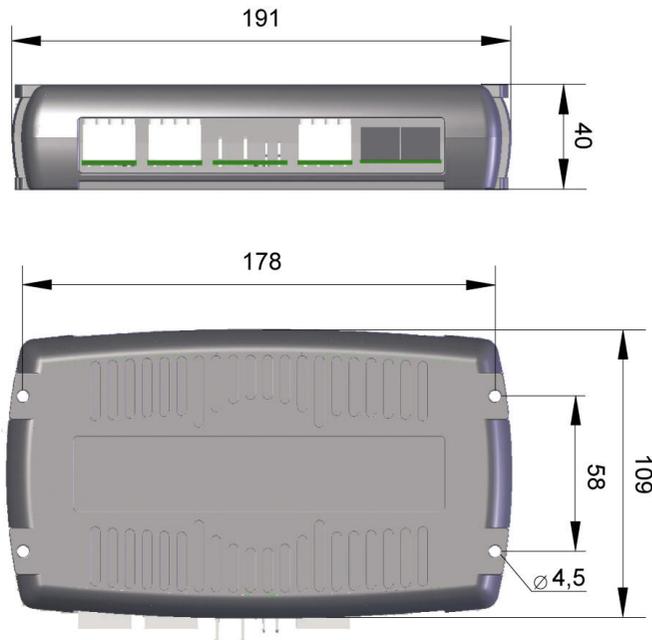**Version with fast-on connector for wash-pump:**

Version with minifit 4 pole connector:

Measure wires according to maximum motors current.

If one speed motors are used, connect only SLOW output.

9. Relay box dimensions

10. Failure

A continuous asymmetrical flashing indicates that CT43P doesn' receive one or more parking switch signal or that it is not possibile to reach synchronism.
This may happen if:

- one (or more) parking switch is demaged or unconnected
- one (or more) motor doesn't run (demaged or unconnected)
- one (or more) motor doesn't run in FAST or in SLOW speed
- motors run at to much different speeds and it is not possible to reach synchronism.
- One of the connectors to motors has been inserted after supply power.

A shifting effect of leds indicates that CT43P relay box can't communicate with the primary switch; this may happen if the eight poles flat cable is damaged or improperly connected.

11. Technical specifications

	CT43P	
Voltage supply	10V to 30V DC	
Internal fuses	12A PTC for each motor	
Stand-by current	Less than 20 mA	
Protections	Polarity inversion	
Motors- output currents	Single or double speed – each motor 12 Amps max.	
Inputs	3 parking switches (open in park position) Dimmer (see relay box connections paragraph)	
Outputs	3 slow speed – SLOW 3 high speed – FAST (if present) 1 wash pump (positive pole)	
Functions	3 intermittent settings 2 continuous speeds, slow and high speed Wash / wipe program Switches leds brightness regulation (if present)	
Connections	**Relay box**	**Primary switch**
	no.3 4 poles connectors no.2 male 9,5 mm fast-on 2 no.1 8 poles teleph. conn. no.1 4 poles Minifit conn.	no.1 8 poles teleph. conn. no.1 10 poles teleph. conn.
		Secondary switch
		no.1 10 poles teleph. conn.
Case	Grey ABS	Black ABS
Working temperature	-25 °C / +55 °C	
Storage temperature	-30 °C / +80 °C	

CE