

Shift Proto - Hx

Gear Indicator for H type (Manual) gearbox



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Shift Proto - Hx

Gear Indicator for Race Cars with sequential shift gearbox or H (manual) gearbox. This kit is not water proof, the LED display size is 1.5 "(44x30) for Shift Proto - ZS or 2.3" (70x47) for Shift Proto - ZB with Color display. The displays are self lit and not backlit.

The large size of the display gives excellent visibility even in fast driving conditions (race), where the skips are typical, preventing good visibility of the instruments on board. Very easy to install as it evaluates gearshifting using foil contacts (or optional micro switches), to be placed next to the gear lever.

It lends itself well to installation for those prototype cars where a wheel speed signal is absent (this signal is NOT necessary).

The display indicates the value of the ratio according to the lamina touched by the gear lever (or by the microswitches), recognizes the Neutral (no foil or active switch) or reverse simply by connecting the appropriate input (see installation chapter).

No programming is required (programming is only necessary in the case of a model with integrated shift light or in particular cases for which the device has a malfunction, in the latter case go to the programming chapter).

1. Installazione

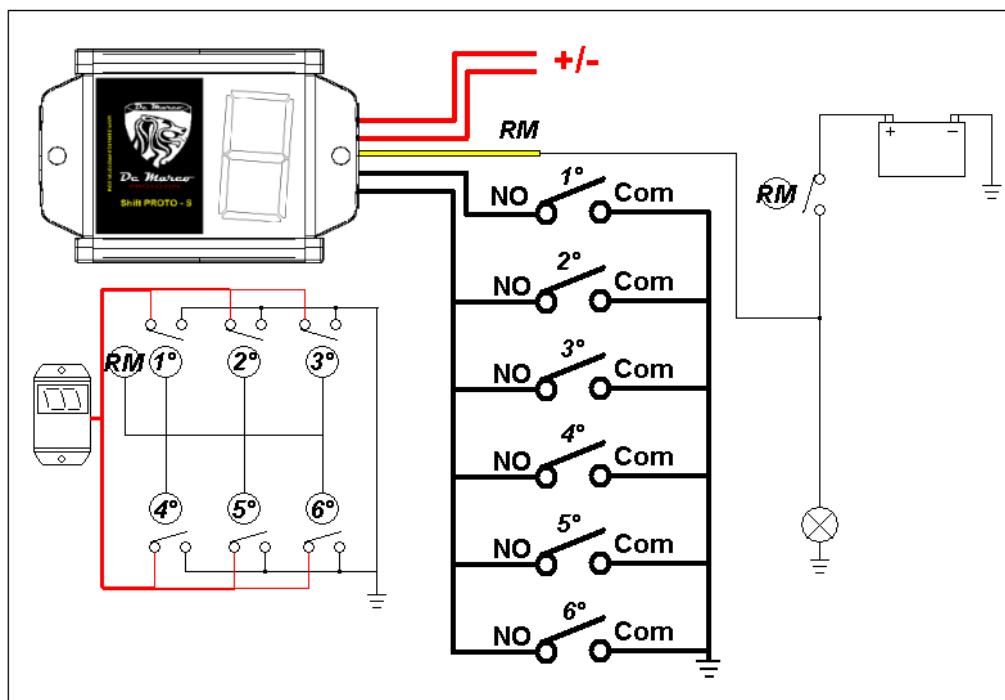


Fig.1 Shift PROTO – HS and Shift PROTO – HB connection scheme

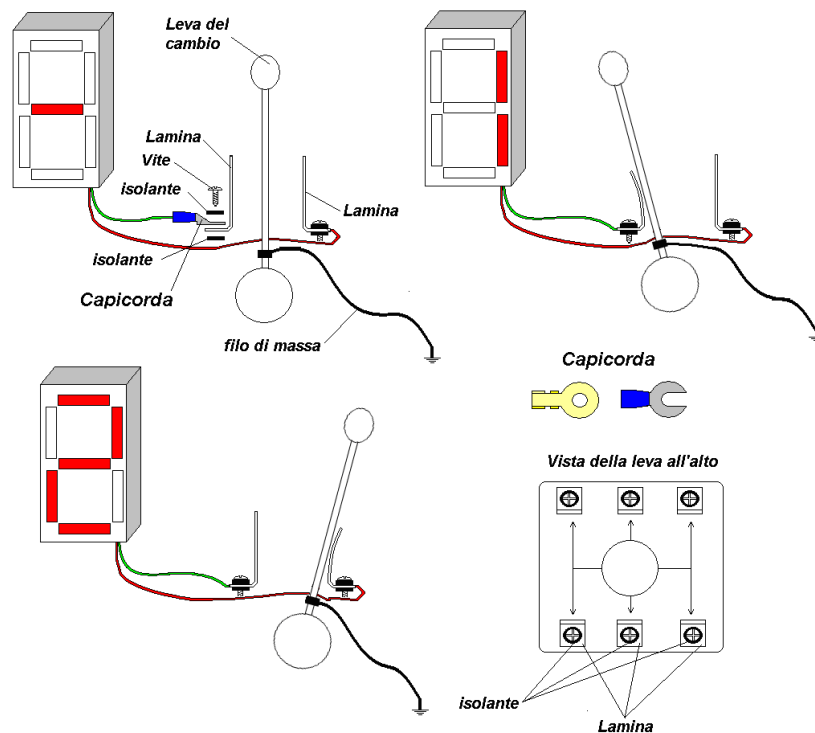


Fig.2 Shift PROTO – HS and Shift PROTO – HB Connection scheme with 6 steel foil ratios

To install Shift PROTO - HX it is sufficient to connect the cables as indicated in the image above.

The power cables (+/- 12V) can be connected indiscriminately to the positive (+ 12V) and the other to the negative, while the other cables (labeled with the gear number) must be connected to the edges (or to the microswitches if choose this option) provided in the kit.

It is possible to insert a fuse in-line at the gear counter (it is also supplied in the kit) on one of the two power cables, preferably on the positive.

The cables marked with the run number (1st, 2nd,..., 6th), display that same number of gear if connected to the negative, while the cable marked with RM works if connected to the positive (for example on the cable of the rear light bulb).

If you mount the sheets (considered by most users to be simpler and more functional to install) follow these simple steps:

- you must place the cable lugs (supplied in the KIT) at the end of each wire marked with the run number (obviously after shortening the wire) and the cable terminal must be placed in contact with the corresponding foil (see figure 2).
- Place the insulating washers so as to prevent the foil and the cable terminal from being isolated from the negative when the gear lever does not touch the foil (screws and insulating washers are supplied in the KIT).
- Fold and shorten the foil at will in order to adapt it to your needs.

- Make sure that the gear lever closes the contact towards the negative when the lever comes into contact with the sheet (see figure 2).
- If the gear lever is isolated from the negative, you must affix a cable that allows contact (see figure 2).

If you mount the microswitches (OPTIONAL) the NO contacts of the microswitch must be connected to the cables with labels indicating the Shift PROTO ratio while the Com contact (c) must be connected to the negative (frame) using the black cable (supplied in the KIT).



Fig.2 Micro Switch

The metal lever of the button must be in contact with the gear lever during the engagement phase.

It is advisable to adjust the microswitch so that it is closed only when the gear is actually engaged, in this way an error event will not occur.

2. Programming

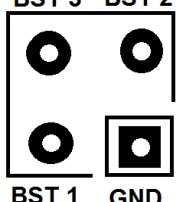
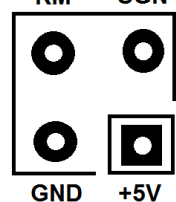
Normally the device is supplied already programmed by the manufacturer.

In case you need to reprogram the device, you need to follow the steps below.

- a) Make sure the gearbox sensor is connected to the device
- b) Power the device.
- c) Remove the cable side cover.
- d) Inside the device you will find a button at the top left, press it for the one time. the letter "P" (programming) will appear.
- e) Release the button, the symbol "-" (or "F") will appear on the display
- f) Place the gear lever in the "neutral" position
- g) Press the button again, the letter "P" will appear
- h) Release the button, the symbol "1" will appear
- i) Place the gear lever in such a position as to activate the 1st gear (First).
- j) Press the button again, the letter "P" will appear
- k) Release the button, the symbol "2" will appear
- l) Place the gear lever in such a position to activate the 2nd gear (second).
- m) Press the button again, the letter "P" will appear
- n) Release the button, the symbol "3" will appear
- o) Place the gear lever in such a position to activate the 3rd gear (third).
- p) Press the button again, the letter "P" will appear
- q) Release the button, the symbol "4" will appear
- r) Place the gear lever in such a position to activate the 4th gear (fourth).
- s) Press the button again, the letter "P" will appear
- t) Release the button, the symbol "5" will appear
- u) Place the gear lever in such a position as to activate the 5th gear (fifth).
- v) Press the button again, the letter "P" will appear
- w) Release the button, the symbol "6" will appear
- x) Place the gear lever in such a position to activate the 6th gear (sixth). If the 6th report is not present, place the lever in the same position as the last report (eg 5^o)
- y) Press the button again, the letter "P" will appear
- z) Release the button, the symbol "r" will appear
- aa) Place the gear lever in such a position to activate the inverting ratio (reverse).
- bb) Press the button again, the letter "P" will appear

The device is now programmed, you can close the top cover

3. PIN OUT

| Shift PROTO ZB/ Shift PROTO XL | | |
|--------------------------------|---|---|
| PIN N° | Funzione / Descrizione | |
| 1 | Ingresso verso GND 1° Rapporto (abilitare con Jumper) cambio H | |
| 2 | Ingresso verso GND 2° Rapporto (abilitare con Jumper) cambio H | |
| 3 | Ingresso verso GND 3° Rapporto (abilitare con Jumper) cambio H | |
| 4 | Ingresso verso GND 4° Rapporto (abilitare con Jumper) cambio H | |
| 5 | Ingresso verso GND 5° Rapporto (abilitare con Jumper) cambio H | |
| 6 | Ingresso verso GND 6° Rapporto (abilitare con Jumper) cambio H | |
| 7 | Ingresso RM (+12V) | |
| 8 | Ingresso Neutral +12V o GND (Vedi Fig.XXX) | |
| 9 | Funzioni Speciali (0) | |
| 10 | Funzioni Speciali (4) | |
| 11 | Paddle Shift Up (incremento cambio elettronico - ingresso negativo) | |
| 12 | Paddle Shift Down (decremento cambio elettronico - ingresso negativo) | |
| 13 | Overboost (0)/Funzioni Speciali (4) | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>BOOST</p> <p>BST 3 BST 2</p>  <p>BST 1 GND</p> </div> <div style="text-align: center;"> <p>Sens W</p> <p>RM SGN</p>  <p>GND +5V</p> </div> </div> |
| 14 | Overboost (1)/Funzioni Speciali (3) | |
| 15 | Overboost (2)/Funzioni Speciali (2) | |
| 16 | GND (Massa) - sensore resistivo 2/3 fili | |
| 17 | + 12V o GND (Massa) alimentazione | |
| 18 | + 12V o GND (Massa) alimentazione | |

*(N.A.) = non attivato

| Shift PROTO ZS | |
|----------------|---|
| PIN N° | Funzione / Descrizione |
| 1 | + 12V o GND (Massa) alimentazione |
| 2 | Ingresso verso GND 1° Rapporto (abilitare con Jumper) cambio H |
| 3 | + 12V o GND (Massa) alimentazione |
| 4 | Ingresso verso GND 2° Rapporto (abilitare con Jumper) cambio H |
| 5 | Ingresso RM (+12V) o Ingresso Neutral +12V (Vedi Fig.XXX) |
| 6 | Ingresso verso GND 3° Rapporto (abilitare con Jumper) cambio H |
| 7 | GND (Massa) - sensore resistivo 2/3 fili |
| 8 | Ingresso verso GND 4° Rapporto (abilitare con Jumper) cambio H |
| 9 | +5V - Uscita 5V sensore resistivo 3 fili (abilitare con Jumper) |
| 10 | Ingresso verso GND 5° Rapporto (abilitare con Jumper) cambio H |
| 11 | SGN - Uscita 5V sensore resistivo 2 fili |
| 12 | Ingresso verso GND 6° Rapporto (abilitare con Jumper) cambio H |
| 13 | Uscita controlla mappature per dispositivo MR Hide XX (N.A.) |
| 14 | Ingresso Neutral GND (Vedi Fig.XXX) |
| 15 | Uscita controlla partenza assistita per dispositivo Hot GRID (N.A.) |
| 16 | Ingresso RPM +12V (N.A.) |

4. Dimensions of the device and accessories

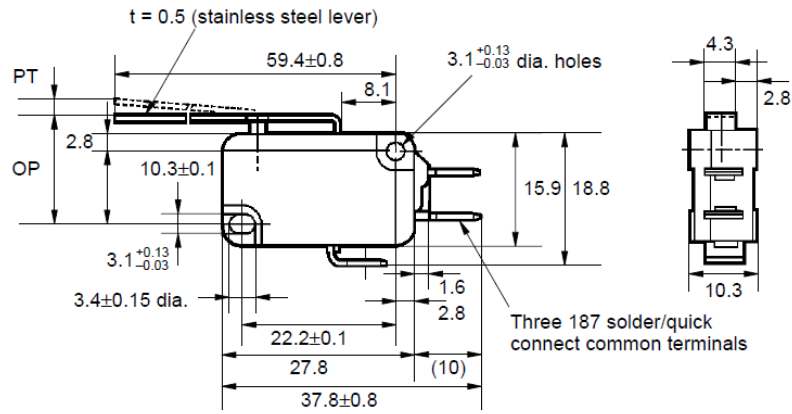
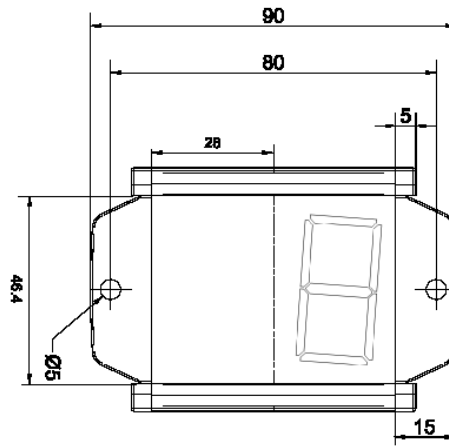
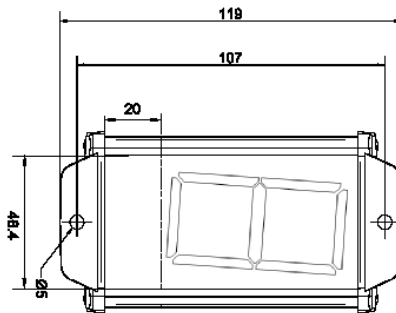


Fig.3 Micro Switch dimension



Shift PROTO - HS



Shift PROTO - HB

Fig.4 Device dimension

5. Package Contents

- 1) N°1 Shift PROTO Hx gear counting device complete with wiring [1.5m]
- 2) 6 Swedish steel plates (or optional buttons)
- 3) Faston type connectors
- 4) Various mounting accessories

Note: the above numbers may vary, depending on the specific needs

6. OVERBOOST solenoid valve management

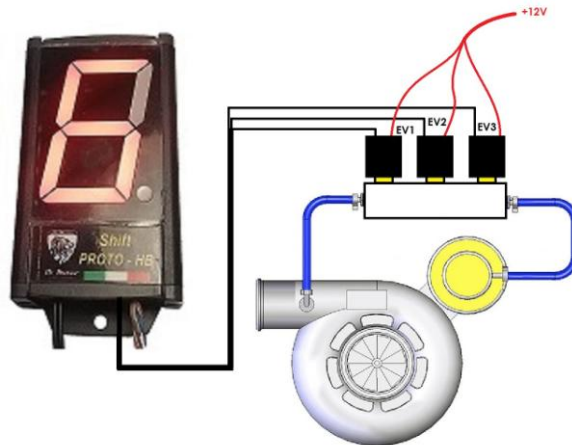


Fig.5 scema OVERBOOST

if your Shift Proto is of the -OB type, it can handle the over boost.

To install the solenoid valves is necessary:

1. Disconnect the conduit connecting the WASTE GATE valve to the turbo auger.
2. Take the Electro-valves unit from the package
3. Connect one side of the Electro-valve unit to the WASTE GATE valve or its actuator via the rubber duct present in the Kit.
4. Then connect the second side of the Electro-valves group to the turbine auger.
5. Connect the red wire of the solenoid valves to the positive ignition
6. Connect the wires EV1, EV2, EV3 to the black cable of the solenoid valves
7. Start the engine and adjust the adjustment screw of the single electro-valve until reaching the desired pressure.

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