

TC – 4 People Counter

The kit comprises:

- ML20 Photo Electric Sensor complete with TC-4 Counter module,
- 12-volt Switchmode Plug-Pack,
- Reflector and Reflector Bracket,
- Multi-Directional Sensor/Counter Module Bracket,
- 2 Reset Magnets,
- Screws and
- Instruction Sheet.

The workings of the system are simple. As a preliminary, to see the system in action, plug the TC-4 Counter module into a 240-volt power-point. Two LED's will light up – a Green LED which signals that the power is on and an Orange LED – the Orange LED indicates that the sensor cannot see the reflector. Position the reflector 20cm or so in front of the face of the sensor. The Orange LED will turn off when the Sensor is lined up with the Reflector.

The system is now ready to count. Each time something goes between the sensor and the reflector the beam will be broken, this Orange LED will light and the counter will advance one count. Each time the beam is broken there is a one second reset period before the counter is ready to count again. When a person walks past the sensor one count only will register – if the sensor is at leg height the first leg only would be counted, if at waist height arms would not be counted. If people enter and leave by the same doorway the counter will count them as they enter and as they leave so the count needs to be divided by 2 to determine the correct count

For a normal retail shop it is suggested to position the beam **at a height of 1.25 metres**. At this height small children, prams and shopping trolleys are not counted.

To reset the counter to zero – hold one of the magnets against the counter box to the right of the numbers (to the right of LCD).

INSTALLATION INSTRUCTIONS:

STEP 1

The TC-4 is positioned on one side of the space to be detected across and the reflector is positioned on the other side. The distance between the TC-4 Sensor (ML 20) and the reflector should not exceed 4 metres. The TC-4 comes with a multidirectional bracket. The top face of the bracket has holes for mounting the ML 20 Sensor. If these do not suit the direction the ML 20 is to face - others can be drilled.

The first thing to do is to decide where to position the ML 20 and its reflector. Moving objects – swinging doors or swaying plants should not interrupt the beam between the ML 20 and its reflector.

The ML 20 has a polarizing filter and will detect through glass. If you want to detect through glass it is suggested to have the beam going through the glass at an angle. This is so the beam doesn't hit the glass at a right angle. Even a 15° tilt of the sensor looking slightly up or down to the reflector will help with the quality of the beam through the glass. The reflector should be at the same angle – so the beam hits the reflector at a right angle. Depending on the thickness of the glass there may be a shortening of the range of the sensor.

Positioning the sensor close to the glass, say 2 cm can aid in achieving distance and then there may be no need to go through the glass at an angle.

Another consideration on location is the proximity of a power-point. The unit has 2 metres of cable from the counter to the 12-volt plug-pack. If this is insufficient use an extension cord or cut the cable and lengthen it using figure 8 speaker cable – be careful to match the colours correctly and using electricians tape to cover the joins – also soldering the joins is suggested.

STEP 2

Make sure that the sensor/counter module bracket can be screwed to the mounting surface and that it is clear of obstruction to where the reflector is to be mounted. Screw the bracket to the mounting surface and lightly bolt the ML 20 to this bracket. When lightly bolted to its bracket there is some movement from left to right – this "play" is used to direct the sensor towards the Reflector. **Do not** affix the Counter Module to the bracket at this stage.

STEP 3

Plug the 12-volt plug-pack into the power-point. The Green (Power) and Orange LED will light up on the ML 20. When the Orange LED is On it means the sensor can't see the reflector. It is best if the reflector is in the centre of the beam from the ML 20 - so watching the Orange LED on the ML 20 position the Reflector approximately where it is to be installed. Move the reflector by hand to ascertain where the centre point is. You may need to swivel the sensor slightly on its bracket to position both detector and reflector where you want them. Mark the position where the reflector is to be fixed.

STEP 4

Once you are satisfied with this lining up, carefully tighten the bolts connecting the ML 20 to its bracket. Use a #2 Phillips screwdriver. At this point you could again check your reflector positioning to ensure that you haven't moved the detector as you tightened it.

Affix the reflector to the position you have marked. A bracket is provided which may be of use. If this Bracket is used either affix the Reflector to it using the Double-Sided Tape already on the Reflector or remove this tape and bolt the Reflector to the Bracket using the 4 mm bolts and nuts provided – this will get the reflector out 50mm or so from the wall – ideal to allow the sensor to see passed auto-doors or roller door guides.

STEP 5

Remove the cover from the double-sided tape on the rear of the Counter Module and position it below the ML 20 Sensor on the bracket.

STEP 6

As you walk past the beam the LED will flash ON on the ML 20.

STEP 7

The TC-4 People Counter is now installed.

STEP 8

By this time there will be a count on the People Counter – clear this by touching one of the magnets supplied - to the right of the LCD. The count will clear to zero. Walk past the TC-4 – and the counter will register one count*.

*With Auto-Halve feature the unit will advance one count for every second time the beam is broken.