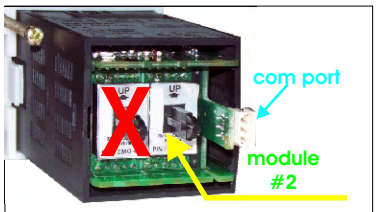
Z-TRAUQ INC.

EZM Recipes

The EZM series, just like the process/temperature controllers and indicators, is very versatile.

They can be fitted with outputs. If only one output is required, remember to insert it into slot #2. This output works in conjunction with SET 2 which is the default screen. The operator must press SET 1 in order to see that screen. This configuration assures that the operator has taken notice of the unit's features.



when only one output is necessary, slip it into the slot closest the com port

These outputs can be programmed to de-energize when the set value is reached. Parameters 14 and 15 (pro-14 & pro-15) would have a value of 1 to achieve this.

The time the outputs are energised or de-energized when their respective set points are reached is adjustable from 0.01 to 99.99 seconds. If left in the default 00.00 setting, the outputs remain in their triggered state until reset either manually or automatically depending on the output function chosen in pro-6.

The only parameters which can be scrolled through are those relevant to the function chosen via the dip switches mounted on the top of the unit behind a small door covered by dip switch symbols. The first three dictate the function and the fourth allows the user to select the type of input the unit will see. Select the NPN position if a dry contact input is the source of the signal. Such an input can produce undesirable results due to contact bounce. This can be eliminated by adjusting pro-04. Usually 5 to 10 ms is enough to stop the unit from registering multiple counts on a single contact closure. The default value for pro-04 is 0 because the vast majority of the time, the input will be from a proximity switch, photoelectric sensor, incremental encoder or similar device capable of high speed sensing. The EZM series can handle 10,000 counts per second. Now, that's fast!

Dip switches located behind door.

The EZM's have on board 12vdc sensor power supplies and since the input devices require a supply voltage from 10 to 30vdc, an external power supply is rarely necessary.

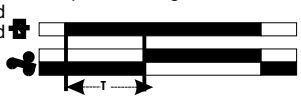
There are many applications where the EZM can be used. The following are examples of some of the most common:

Timer Mode

Delay On Energization - Supply Initiated:

This is the most common time delay function and is typically used to stagger the starting pattern of two motors.

Timing begins when the supply voltage is applied and output 2 is energized when the set value(SET2) is reached. Timing stops and output remains energized until power is removed or Reset is pressed. Reconnecting the supply voltage will also start a new sequence. If two outputs, then output 1 reacts to SET1 value.

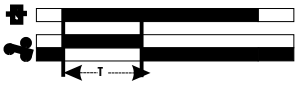


Pro 06=1, Pro 14, 15, 16 and 17=0, Pro 21=1.

Interval or One Shot - Supply Initiated:

When an action must be limited by time, an Interval or One-Shot timer is used.

The output is energized and the timing begins as soon as the supply voltage is applied. The output is deenergized at the end of the set interval (SET2). Timing stops and output remain energized until power is removed or reset is pressed. Reconnecting the supply voltage will also start a new sequence.If two outputs, then output 1 reacts to SET1 value.

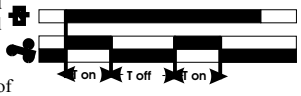


Pro 06=1, Pro 14 and 15=1, 16 and 17=0, Pro 21=1.

Applications where a beacon flashes or a defrosting period is required every few hours require an asymmetrical recycler.

Asymmetrical Recycler:

Outputs 1 and 2 are alternately energized for their respectively selected intervals. Example: output 1 for 6 seconds and output 2 for 10 seconds.



Pro 05=2, Pro 6=6, Pro 14=1,15=0, Pro 16=0.00 and Pro17 =10.00. Set Value 1(SET1)=6.000 and SET2=6.00.

Upon connecting the supply voltage, output 1 is energized for the set interval of 6.00 seconds at the end of which output 2 is energized for 10.00 seconds. The cycle is repeated until the supply voltage is removed.

There are many other timer recipes in the owner's manual.

Frequency Meter/Tachometer

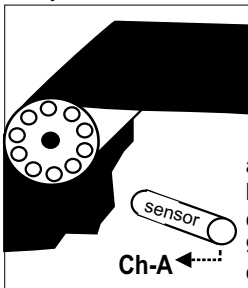
From the default COUNTER mode, all you need do is slide the second dip switch to the OFF position and the EZM is ready to monitor speed or rate. Receiving pulses from a NPN/PNP/DRY CONTACT sensor, measurement can be either counts over a period of time or pulses per revolution.

Displaying the speed of a motor (RPM) is straight forward. Point the sensor at a raised part on the shaft then use the following values:

pro-03 = 0, pro-29 = 60 and pro-30 = 1.00. Change pro-29 to 3600 to indicate revs per hour.

The *Time Out* feature can be set in pro-07 so that if the EZM doesn't receive a pulse within the time set in this parameter, the display will return a reading of 000000.

Some processes require other than RPM readings. These EZM's set up easily as rate meters.



Pulses from a proximity switch or incremental encoder can be easily scaled to read meters/sec; feet/min or gal/hr, etc. The EZM can accept pulses per revolution or pulses per length of time. Then, two separate coefficients, one adjustable from 1 to 9999 the other 1 to 99.9999 make scaling child's play.

When pro-30 = X, the length of the cloth being produced is 80 cm in one revolution and the display reads 20, the formula to determine this parameter is:

$$X = \frac{\text{Cloth length in one revolution}}{\text{Pro 29 x value on the display}} = \frac{80}{1 \times 20} = 4$$

If pro-30 was left with the default value of 01.0000, the display would read 20 because this is the number of pulses sensed during one revolution. Changing this parameter to 4 will have the display read 80.

With the dip switches in the same position, the EZM can be used as an under and over speed monitor. Select the value 1 for pro-03. This enables parameter 08 which is programmable up to 99.9 seconds. There are 50 impulses counted during 5 seconds giving us an average of 10 cycles per second given that pro-29 and pro-30 are at their default value of 1.

$$\frac{\text{Number of Pulses}}{\text{Pro 08}} = \frac{50}{5} = 10$$

To display cycles per minute, change Pro 29=60. This parameter should be 3600 if the display is to indicate cycles per hour.

If outputs are installed, they can be energized or deenergized if the actual value is exceeded or falls below the set point(s).