# MPT-10C PULSE TOTALIZING RELAY INSTRUCTION SHEET

*Standard Solid State*

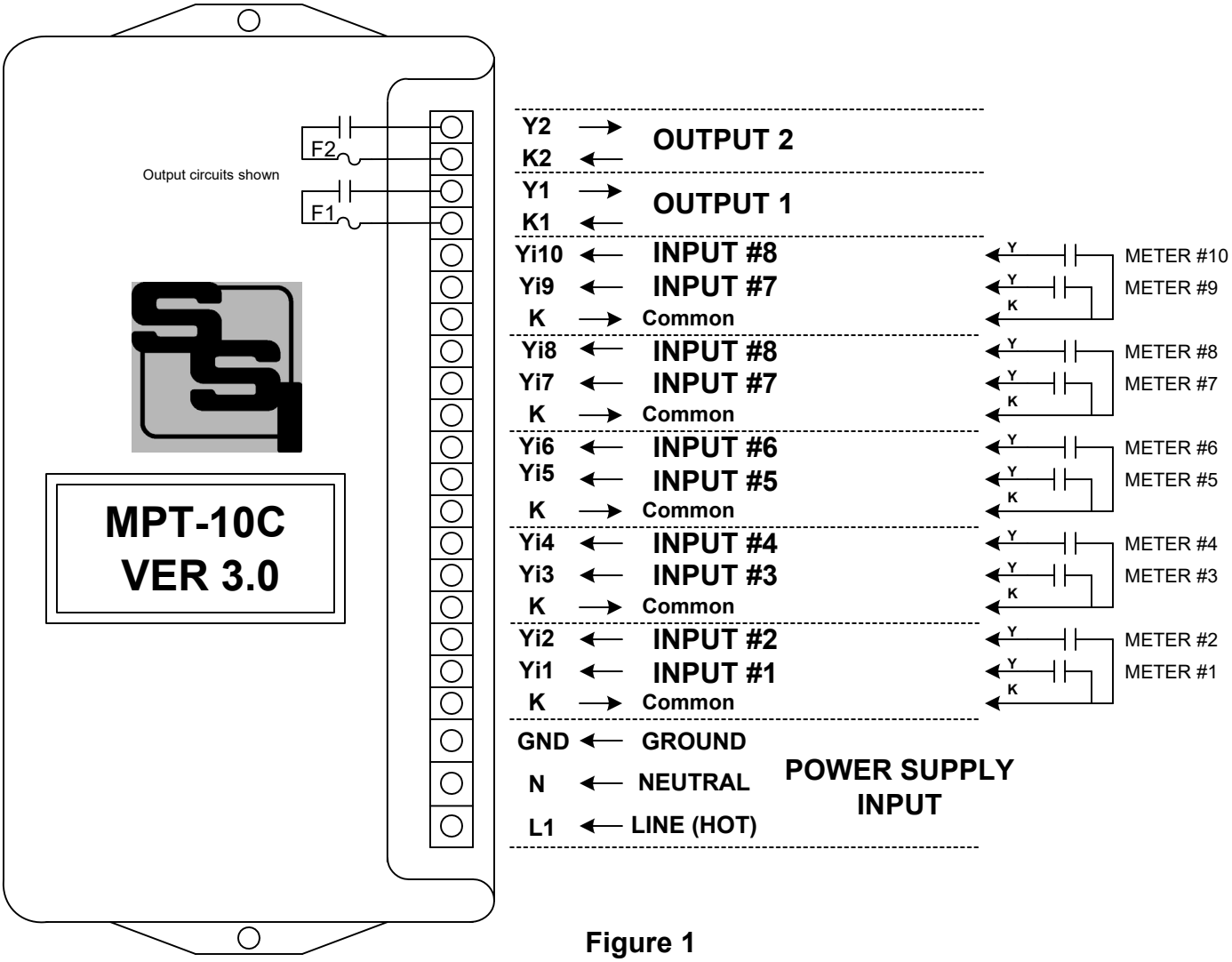


**Figure 1**

**POWER INPUT -** To power the MPT-10C, connect the "hot" lead from a 120VAC to 277VAC source to the **LINE** terminal. Connect the neutral lead to the **N** terminal. Connect the **GND** terminal to the electrical system ground. If a true Neutral does not exist at the mounting location, connect both **N** and **GND** to ground. The GND terminal must be connected.

**METER CONNECTIONS -** The MPT-10C accepts 2-Wire inputs only. The MPT-10C's K terminals provide the common return for all of the meters' K terminals. One K terminal is provided for each set of two $Yi_x$ pulse inputs. Connect each meter's Y output to the desired Yi input terminal. Each Yi input provides its own wetting (sense) voltage to the meter's Y terminal. The meters' pulse outputs must be dry-contact type, either solid-state or electro-mechanical.


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REV. 01/01/2025 P/N: 05610-97006A

**OUTPUTS** - Two 2-Wire Form A isolated dry-contact outputs are provided on the MPT-10C. MOV Transient suppression for the contacts of the solid-state relays is provided internally. The output loads should be limited to 1/ 10 Amp by F1 & F2. Two 1/10 Amp fuses are supplied standard with the unit unless otherwise specified. The fuse is a 3AG (AGC) fast blow type.

**OUTPUT CONFIGURATION** - The MPT-10's outputs can be configured in the OUT MODE display as either "Toggle" or "Fixed" outputs. The Toggle mode changes to the opposite state Open-to-Close or Close-to-Open upon a pulse being generated, emulating half of a Form C pulse. In Fixed mode the outputs close for a "fixed pulse width as set in the AOUTx MS displays.

**2-WIRE (FORM A) OUTPUTS** -
The MPT-10C's two K-Y outputs contain two solid-state, Form A, dry-contacts and may be used independently. These outputs can operate in the toggle mode to simulate one side of a 3-Wire Form C KYZ output, or in the fixed or momentary mode, where the outputs close for a fixed period of time then reset to an open state. The pulse value does not change, thus the closure is the pulse and the opening or reset does not have a value.

When the Output Mode display OUT MODE is set to "T", the outputs operate in the Toggle mode. When OUT MODE is set to "F" the outputs operate in the Fixed mode. The Fixed mode's output timing is controlled by the AOUT1_MS and AOUT2_MS settings which allows the output pulse width to be varied from 20 to 1000 mS in 10mS increments.

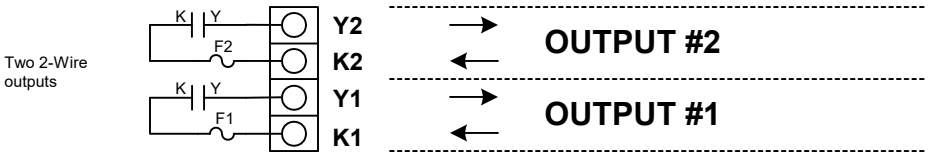


**Figure 2**

The MPT-10C has two output "Channels" that operate the hardware outputs individually. Each output channel is independently configurable.

Toggle Setting: In Toggle Output mode, output is toggled or switched to the opposite state each time a pulse s generated. This results in an approximate 50/50 duty cycle, given a square wave output where On time and Off Time are approximately equal. This emulates one side or half of a Form C (3-Wire) output. Therefore, the receiving device may have to double its pulse value for the correct equivalent value of energy.

Normal (Fixed) Pulse Width Setting: In Fixed Output mode, each output's "dwell" or closure time is controlled by the AOUT1_MS and AOUT2_MS settings. See the MPT-10C programming manual for more information on these settings. These settings range from 10mS to 1000mS in 100mS increments. It is important to know the minimum pulse width specification of the receiving equipment. The output pulse width time must be set so that pulses will be reliably "seen" by the pulse receiving equipment. If pulses are too short, they will either not be counted at all or may be intermittently received. Most equipment will see pulses down to 50 mS, so 100 mS is a good default value. This value should be kept as short as possible (so as not to skew demand information in the event that pulses are outputted rapidly) but long enough to be reliable. In the event that output pulses cannot be outputted fast enough with the pulse width time selected, a buffer will hold up to 1024 un-outputted pulses. The pulses in the buffer will be outputted as soon as timing allows.

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