polimold
INDUSTRIAL S.A.

Sequential Controller
For
Pneumatic and Hydraulic Valve Gate
Systems
TCP-2G01

USER MANUAL

GENERAL FEATURES

The Dual Sequence Injection TCP-2G01 provides a means of controlling the mould filling sequence when using Valve Gate Hot Runner Systems. TCP-2G01 enables the Valve Gates of a Hot Runner System to be individually controlled to provide the following benefits.

- **Removal or Positioning of Weld Lines**

Quality of the moulded part can be improved by removing or re-positioning of weld lines on visual surfaces, or sections where a weld line would cause a weakness.

- **Regulation of the Injection Quantity by Gate Operation**

Flash occurrence or short moulding is improved by the regulation of the Injection Quantity from each individual gate.

- **Reduction of Clamping Force**

Injection is performed with minimum clamping force because all of the gates are not opened simultaneously.

- **Reduction of Flow Marks**

Flow marks are minimized by being able to raise the injection rate at the gate.

POWER SUPPLY

Mains Power Supply (Timer case)	Single phase AC 220V (50/60 Hz)
	Dual phase AC110V (50/60 Hz)
Injection Signal Input Power Supply	DC 24V, AC 220V
	Select Signal Imput
Solenoid Valve Voltage	DC 24V, AC 220V
Operating Temperature Range	-10°C ~ +50°C

TCP-2G01 CONTROL PANEL LAY-OUT
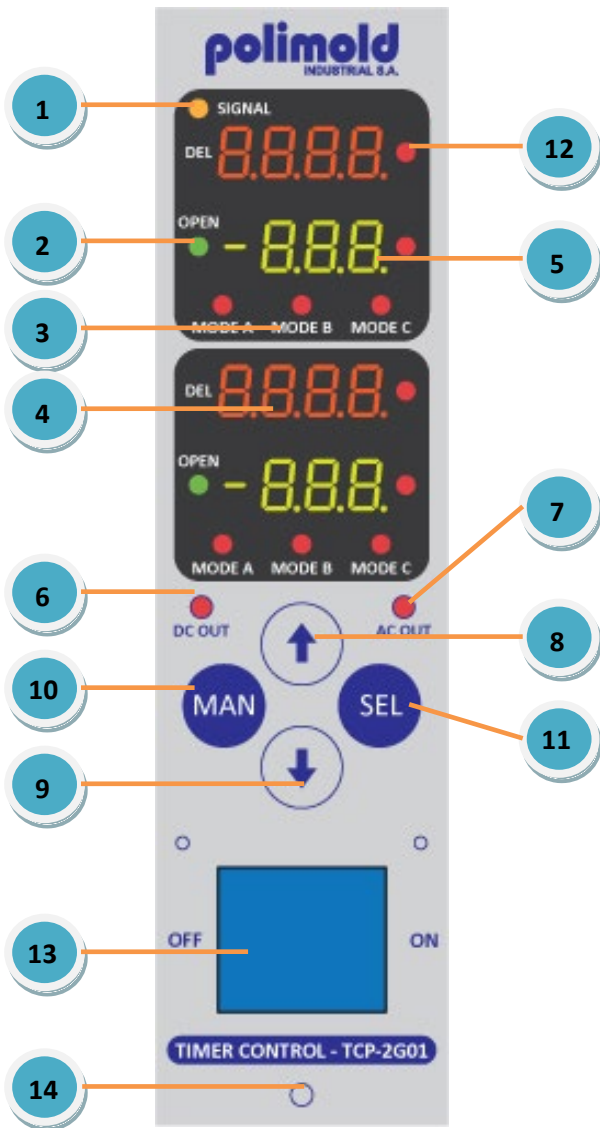
1	SIGNAL LED	If injection signal is entered, lamp is turned on.
2	OPEN LED	If gate is opened, lamp is turned on. When it is manually operated in "10" lamp is also turned on.
3	MODE LED	Lamp is turned on when it is set as A, B or C type.(Refer to mode setting method)
4	DEL	The time until gate is started to be opened after receiving injection signal. Mode A, MODE B, and MODE C operate in the same way.(Basic setting value : 3 seconds)
5	OPEN	The time when gate is being opened. Counting continues in mode A until injection signal ends. Gate opens only during setting time in mode B. (Basic setting value : 3 seconds)
6	DC LED	Signal Imput Power Supply – DC Power
7	AC LED	Signal Imput Power Supply – AC Power
8	UP KEY	A key to set up time. When the configuration is running, this key be able to set-up the mode operation (A, B, C or D)
9	DOWN KEY	A key to turn down time. When the configuration is running, this key be able to set-up the decimal time.
10	MAN	A key to set gate closed time after injection signal. When the configuration is running, this key be able to SAVE all functions changed.
11	SEL	Pressing simultaneously with Power Switch (13) when the device is turned on, the configurations be able to set-up.
12	LED	When the parameter is choose, lamp is turned on
13	POWER SWITCH (ON – OFF)	
14	MODULE SECURING SCREW	

## FUNCTIONS

Operation after power is connected

- When the power is initially connected, the system conducts self-diagnosis

- All LED blinks simultaneously.

- After the 1st self-diagnosis, the memory comes back the last parameter

Mode and time unit setting

- Press POWER SWITCH simultaneously and connect power to convert to mode setting.

- All default parameter are showed on the display

- "Set" starts blinking in the delay time display segment 'SET'.

- The superior module can be configurated

- Pressing the UP KEY is possible to change MODE OPERATION "A", "B", "C" or "D"

- Pressing the DOWN KEY to set-up de the time. The time set time unit saved in the open time display segment starts blinking (999, 9,99, 9,99)

- Press SEL and config the module 2

- Press MAN to salve the parameters

SETTING OUTPUT VOLTAGE

- Pull a Power Unit.

- Insert the OUT_V1, OUT_V2 cables of the MAINFRAME into desired voltage DC 24V or AC (Refer to the following figure).

- Match the selected voltage with the Solenoid Valve voltage specifications. (Basic Setting AC 220V)
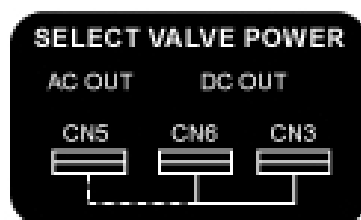
MODE SPECIFICATION

TCP-2G01 may be set in three modes. The opening/closing operation of the gate differs according to the setting mode as illustrated below.

MODE A

Selecting mode A - After the injection signal has been received, the gate remains Closed during the DEL time (t1). After the DEL time has elapsed, the gate Opens and remains open until the end of the injection signal.

- ex) Injection time 10 sec/ DEL Time (t1):3 sec
- ➢ Gate opens 3 sec after receiving the injection signal, and remains open for 7 sec, and then closes.

A MODE
T3 t1
T2 t1
T1 t1
Signal ON   Signal OFF
T1 : Delay Time
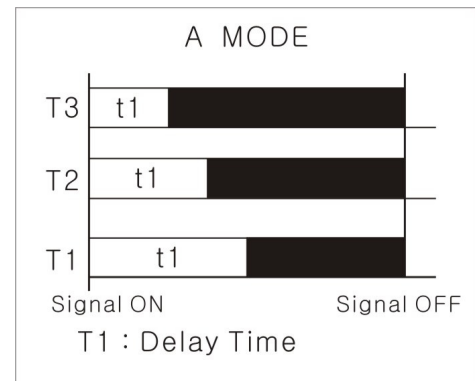
MODE B

Selecting mode B - After the injection signal has been received, the gate remains Closed during the DEL time (t1). After the DEL time has elapsed, the gate Opens for the OPEN time setting (t2). After the OPEN time has elapsed, the gate closes and remains closed.

- ex) Injection time 10 sec/ DEL Time 3 sec/ OPEN time 4 sec
- Gate opens 3 sec after receiving the injection signal, and remains in the open condition for 4 sec, and then closes.

B MODE
T3 t1 t2
T2 t1 t2
T1 t1 t2
Signal ON   Signal OFF
T1 : Delay Time
T2 : Injection Time
(Gate Open Time)
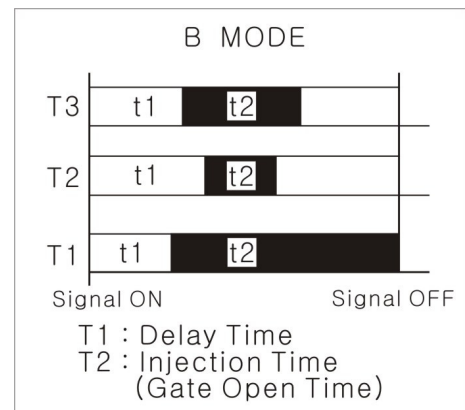
MODE C

Selecting mode C- After the injection signal has been received, the gate remains Closed during the DEL time (t1). And then if OPEN time is set 0~999(or 99.9 or 9.99), Gate Open operation is the same as in "MODE B" . If OPEN time is set -999(or -99.9 or 9.99), Gate opens after DEL Time and remains opened continuously during set OPEN Time.

B MODE
T3 t1 t2
T2 t1 t2
T1 t1 t2
Signal ON   Signal OFF
T1 : Delay Time
T2 : Injection Time
(Gate Open Time)

MODE D

DISABLE FULLY THE MODULE
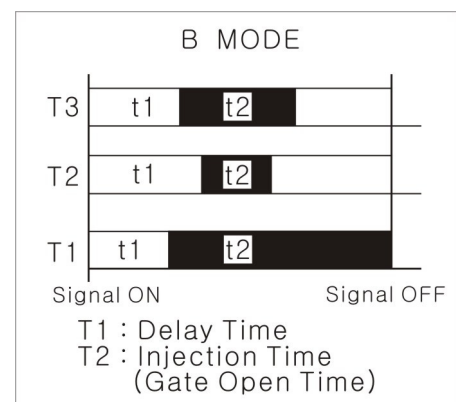
Gate Opening by Mode Type Selection.

It is possible to set various conditions by selecting the DEL and OPEN timer settings as below.

INJECTION
SIGNAL

DELAY

OPEN

MODE A

INJECTION
SIGNAL

DELAY

OPEN

MODE B

INJECTION
SIGNAL

DELAY

OPEN

Delayed
Time

MODE C