

APTUS AUTOMATION

Universal Cyclic Timer User Manual

Notice before start-up

Please confirm the specification of instrument is to totally with your requirement before using it, also read this manual in detail.

Danger

Danger! Electric Shock!

DON'T touch AC power wiring terminals when instrument has been powered!

Keep the power off until all of the wirings are completed!

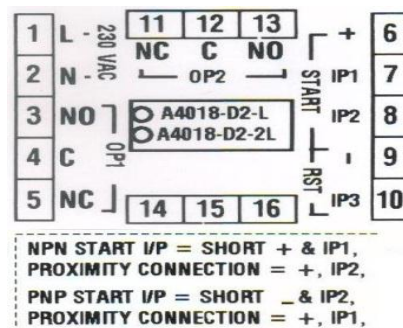
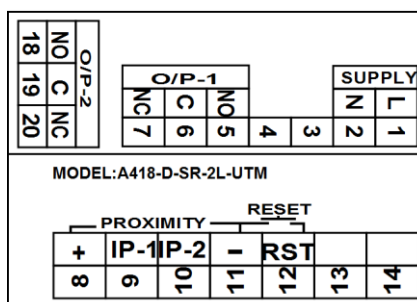
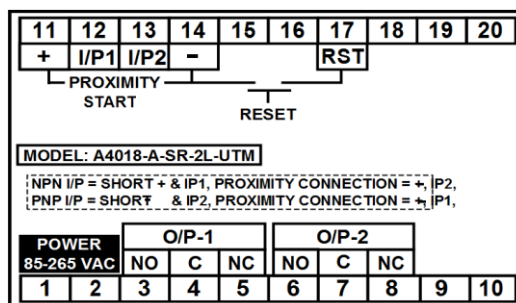
Warning

- 1) Please confirm the AC power wiring to instrument is correct, otherwise it would be caused aggravated damage on instrument.
- 2) Be sure to use the rated power supply, otherwise it would be caused aggravated damage on instrument.
- 3) Please confirm wires are connected with correct terminal (Power, Input and Output).
- 4) Avoid installing instrument in following spaces:
 - I. A place where the ambient temperature may reach beyond the range from 0 to 50°C
 - II. A place where the ambient humidity may reach beyond the range from 20 to 90% RH.
 - III. A place where the instrument likely to come into contact with water, oil, chemicals, steam and vapor.
 - IV. A place where the instrument is subject to interface with static electricity, magnetism and noise.
- 5) For proximity input, use shield compensating lead wire.

TECHNICAL SPECIFICATIONS

Product Name	: 2-Relay Cyclic Timer
Model No.	: A4018-A-SR-2L-UTM / A418-D-PR-2L-UTM / A4018-D2-PR-2L-UTM
Input	: Proxy (selectable)/start, Back reset
Output	: 1 Relay, 5Amp/ Relay-1 (Contacts NO-C-NC)
Display	: A4018-A-SR-2L-UTM: - 4 digits 0.56" RED seven segment display + 4digits 0.39" GREEN seven segment display. A4018-D-SR-2L-UTM: - 4 digits 0.39" RED seven segment display + 4digits 0.39" GREEN seven segment display.
Reset	: Auto Reset, Back Reset, Manual Reset
Output Logic	: Cyclic
Power Supply	: 230VAC $\pm$ 10%

TERMINAL DETAILS



INPUT TYPE	A4018-A-SR-2L- UTM	A418-D-PR-2L- UTM	A4018-D2-PR-2L-UTM
230 V AC Power supply	Terminal 1 & 2	Terminal 1 & 2	Terminal 1 & 2
NPN Pulse Input	Short Terminal 11 & 12, Terminal 11 (+Ve), 13 (NPN Signal) & 14 (-Ve)	Short Terminal 8 & 9, Terminal 8 (+Ve), 10 (NPN Signal) & 11 (-Ve)	Short Terminal 6 & 7, Terminal 6 (+Ve), 8 (NPN Signal) & 9 (-Ve)
PNP Pulse Input	Short Terminal 13 & 14, Terminal 11 (+Ve), 12 (PNP Signal) & 14 (-Ve)	Short Terminal 10 & 11, Terminal 8 (+Ve), 9 (PNP Signal) & 11 (-Ve)	Short Terminal 8 & 9, Terminal 6 (+Ve), 7 (PNP Signal) & 9 (-Ve)
Reset Input	Terminal 14 & 17 (Potential Free Contact)	Terminal 11 & 12 (Potential Free Contact)	Terminal 9 & 10 (Potential Free Contact)
Output 1 (Relay-1)	Terminal 3(NO), 4(C) & 5(NC)	Terminal 5(NO), 6(C) & 7(NC)	Terminal 3(NO), 4(C) & 5(NC)
Output 2 (Relay-2)	Terminal 6(NO), 7(C) & 8(NC)	Terminal 18(NO), 19(C) & 20(NC)	Terminal 13(NO), 12(C) & 11(NC)

CONFIGURATION MENU

To enter in configuration menu, press SET+UP Key till 1 second. Configure all parameter as per your requirement.

KEY	LOWER DISPLAY	UPPER DISPLAY	FUNCTION	RANGE
SET	Unt 1	SEC	Unit 1: Set Unit for first time. It may be Hour/Minute/second Press UP key to change.	HOUr/mIn/ SEC
SET	Unt 2	SEC	Unit 2: Set Unit for second time. It may be Hour/Minute/second This is available if timer is selected as Cyclic timer. Press UP key to change.	HOUr/mIn/ SEC
SET	rAg1	9999	Range 1: Select Range 1 for time 1. Press SHIFT key to change. 99.59 range is not available if Unit-1 is selected as second.	9999/99.99/ 99.59/999.9
SET	rAg2	9999	Range 2: Select Range 2 for time 2. This is available if timer is selected as Cyclic timer. Press SHIFT key to change. 99.59 range is not available if Unit-2 is selected as second.	9999/99.99/ 99.59/999.9
SET	U-d	UP	Count Direction: Set direction for counting a running time. UP – Running time is increase from 0(zero) to set value. Down – Running time decrease from set value to 0 (zero).	UP/dOvn
SET	Str	YES	Start selection: Select the start input is required or not. YES – Cycle will start with input. NO – Cycle will start with power ON.	YES/nO
SET	InPt	PLSE	Input type: Select Input type. PLSE (Pulse to start) – This type start input, cycle will start with pulse. And pulse has no effect in running cycle. PLSr (Pulse to restart) – This type start input, cycle will restart with pulse. And pulse will restart the running cycle. LtCE (Latch to start) – Cycle will run till input is applied, with remove input, cycle will pause, if input is applied again, the cycle will resume. LtCr (Latch to restart) – Cycle will run till input is applied, with remove input, cycle will pause, if input is applied again, the cycle will restart (This will work only if the Start selection is set to YES)	PLSE/PLSr/ LtCE/LtCr
SET	FrSt	EnbL	Front reset: Select front reset type enable or disable. Enable – Timer can be reset by Front RST key. Disable – Timer cannot be reset by Front RST key.	EnbL/dIs
SET	mEm	YES	Memory selection: select the cycle saving at power off. YES – running cycle will save in memory at power off. NO – running cycle will not save in memory at power off.	YES/nO
SET	F.Str	dis	Front start: Select start from front Shift key YES or nO. YES – cycle can start by front SHIFT key. NO – cycle cannot start by front SHIFT key. (This will work only if input type PLSE is selected)	YES/nO
SET	t.CYC	0003	Total Cycle: Set total number of cycle. If total number of cycle is 0000, then cycle will run until applied back reset or manual reset. If there is non-zero value, then cycle will finished after set number of cycle.	0000~9999
SET	L.dSP	SET	In run mode Lower display: Set the lower display to indicate the set value or the number of completed cycles	CYC/SET
SET	EP1	YES	EP1: Set the EP1 parameter to control the t.CYC para in Set key menu. YES – Set key menu will show the t.CYC parameter in the list. NO – Set key menu will no show the t.CYC parameter in the list. (This para is applicable if timer is in cyclic mode)	YES/nO
Enter	EP2	YES	EP2: Set the EP2 parameter to control the L.dSP para in Set key menu. YES – Set key menu will show the L.dSP parameter in the list. NO – Set key menu will no show the L.dSP parameter in the list. (This para is applicable if timer is in cyclic mode)	YES/nO

NOTE:

- To go on next parameter and save current edited value press SET key.
- After last parameter first parameter will be appear, so to exit from menu press Enter key.

PARAMETER SETTING MENU:

- To set parameters which are required to change frequently, go in parameter setting menu.
- Press SET Key till 1 sec to enter in this menu.
- Use UP and SHIFT key to change value, set current parameter and press SET key, to save and goes to next parameter. After last parameter first parameter will be repeated. To exit press Enter Key.

KEY	LOWER DISPLAY	UPPE DISPLAY	FUNCTION	RANGE
SET	SEt1	0010	Set1 time: Set the time for Relay-1 to be ON. For this time Relay-1 will ON.	000.0~9999
SET	HLt1	01.00	Hold1 time: Set a hold1 time. After this time Relay-2 will be ON.	00.00~99.99 sec
SET	SEt2	0010	Set2 time: Set an OFF time for Relay-2. For this time Relay-2 will be ON	000.0~9999
SET	HLt2	01.00	Hold2 time: Set a hold2 time. After this time the Cycle will be repeated.	00.00~99.99 sec
SET	t.CYC	0005	Total Cycle: Set total number of cycle.	0000~9999
Enter	L.dSP	CYC	Set Lower display in run mode: Set the lower display to indicate the Set Value or the number of Completed Cycles. (This will work if "t.CYC>0")	CYC/SET

Display Indication:

Running Time -----=on Upper Display according to Unit (SEC/MIN/HOUR)
Set Value -----=on Lower Display according to Unit (SEC/MIN/HOUR)
Completed Cycle -----=on Upper display by pressing UP Key

Keys & Terminal Function:

External Reset (Back RST) ----- = to reset the Timer
Front Reset Key ----- = to reset the Timer (if it is Enabled)

Input Types:

- **Power-On-Start:-**
 - Cycle will start when the power is applied to the device.
 - After the completion of cycle, external reset/front reset will restart the cycle.
- **Pulse-To-Start:-**
 - Cycle will start when the Pulse is applied to the device.
 - In running cycle, input pulse has no effect.
 - After the cycle complete, if the pulse is applied again then the cycle will repeat.
- **Pulse-To-Restart:-**
 - Cycle will start when the Pulse is applied to the device.
 - In running cycle, input pulse will restart the cycle.
 - After the cycle complete, if the pulse is applied again then the cycle will restart.
- **Latch-To-Start:-**
 - Cycle will start & run only when the Latch is applied to the device.
 - In running cycle, if latch is removed the cycle will paused & it will start to resume if latch is given.
 - After the cycle complete, if the latch is applied again then the cycle will repeat.
- **Latch-To-Restart:-**
 - Cycle will start & run only when the Latch is applied to the device.
 - In running cycle, if latch is removed the cycle will paused & it will restart the cycle if latch is given.
 - After the cycle complete, if the latch is applied again then the cycle will repeat.

WORKING:

- Cycle will start according to the selected input type & display shows the parameters as mentioned above.
- Here, the whole operation of one Cycle takes place in four different steps as shown below...
 - ✓ **STEP-1 (SEt1 Time):-**
 - Relay-1 will be ON initially & when the **[Running Time >= SEt1]**, the **[Relay-1]** will be OFF.
 - ✓ **STEP-2 (HLt1 Time):-**
 - HOLD1 time will start to execute & when **[Running Time >= HLt1]**, the **[Relay-2]** will be ON.
 - ✓ **STEP-3 (SEt2 Time):-**
 - Relay-2 will be ON & when **[Running Time >= SEt2]**, the **[Relay-2]** will be OFF.
 - ✓ **STEP-4 (HLt2 Time):-**
 - HOLD2 time will start to execute & when **[Running Time >= HLt2]**, the Completed Cycle is incremented by one & the Cycle will be repeated from **STEP 1**.
- If the Total Number of Cycle (t.CYC) is set to non-zero value, then cycle will be stop after **[Completed Cycle = Total Number of Cycle (t.CYC)]**.
- If Total Number of Cycle (t.CYC) is set to zero, then cycle will run infinitely.
- For (t.CYC>0), at any instant of time to see the Number of Completed Cycles on upper display, press the UP Key only.
- If (t.CYC=0), then lower display shows only set value of current mode, although you have set the L.dSP to CYC mode.