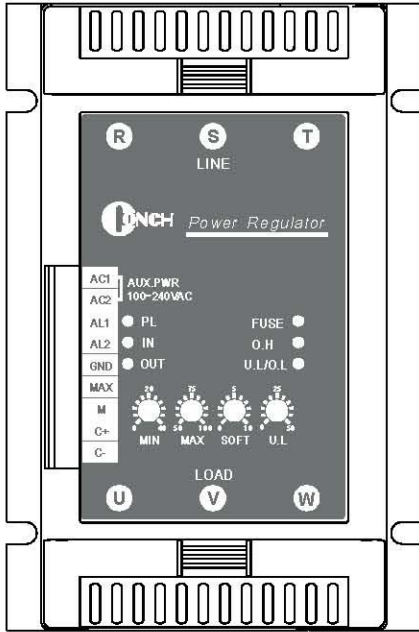
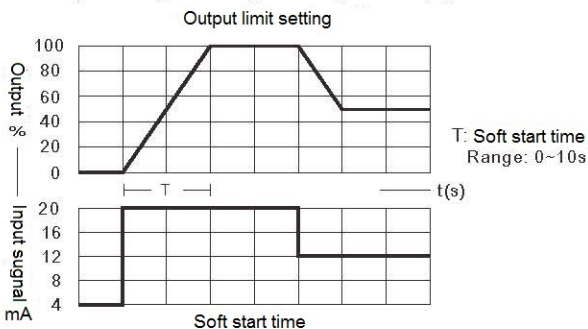
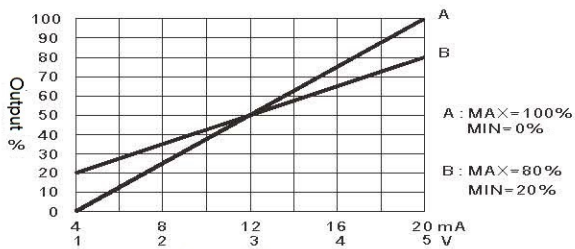
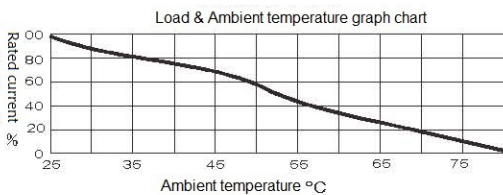




Input Signal	0~5V, 1~5V, 0~10V, 1~10V, 0~20mA, 4~20mA -- 6 options
Indicator	PL – Aux. power indicator (LED turned on when aux. power is connected) IN – Signal input indicator (LED will flash with the intensity of signals) OUT – SCR output indicator (LED will flash with the output rate) FUSE – Fuse breaking indicator (LED will go on if the main power isn't fed, phase failure or broken fuse occurs) O.H. – Heat sink overheat indicator (LED will go on if the temperature of heat sinks is higher than 80° C
Adjustment	MIN Minimum adjustment: 0 ~ 40% (Default = 0) MAX Maximum adjustment: 50% ~ 100% (Default = 100) SOFT Soft-start time: 0~10 sec. (Default = 5 sec.) Maximum output = Panel max. value x External VR max. value
Alarm contact	Contact capacity: 250VAC/3A
Determining Specification	Calculation of current and determination of specifications: $3\Phi \rightarrow 1(\text{Amper}) = P(\text{Watt}) \approx \sqrt{3} \approx 0.85$ (15% safety reservation) Example: $3\Phi 380V 15KW$ heating element (main power supply is 380V) $15000 \approx 380 \approx 1.732 \approx 0.85 = 26.8 \rightarrow$ (select the type of 35A) If temperature inside the cabinet is too high, please use at most 70% of the rated current, or typewith higher current rating.
Note	Before changing the fuses or alter the input mode, please cut off the power supply first and follow the following steps: 1. Dismount the top terminal cover 2. Take off the fixing screws on the both side of the topo cover 3. Lift the top cover about 45° (60° at most less the connecting wire should break)

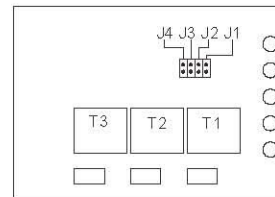
Model Explanation

TRL 4 035 P - L					
①	②	③	④	⑤	
① Model	TRL	3φ3W			
② Main Power	2	AC180~260V			
	4	AC340~480V			
③ Rated Current	030	30A	Fuse Type	40FE	
	035	35A		50FE	
	050	50A		63FE	
	075	75A		80FE	
④ Control Mode	P	Phase Control			
	Z	Zero Crossing Control			
⑤ Loading type		Resistive load			
	L	Inductive load			
Aux. power		AC100V~240V, 50Hz/60Hz, under 6VA			



Mode Selection

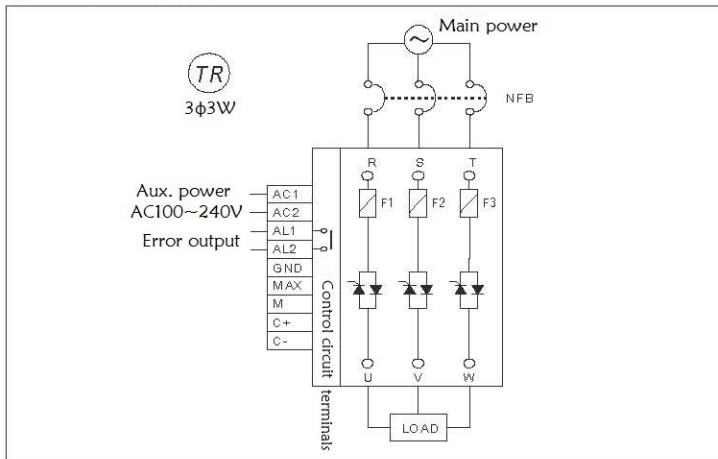
Control mode	Input signal	J4	J3	J2	J1	Marking
Phase control	0~5V	☐	☐	☒	☒	■ : ON □ : OFF
	1~5V	☐	☐	☐	☒	
	0~10V	☐	☒	☒	☒	
	2~10V	☐	☒	☐	☒	
	0~20mA	☒	☐	☒	☒	
	4~20mA	☒	☐	☐	☒	
Zero crossing control	0~5V	☐	☐	☒	☐	
	1~5V	☐	☐	☐	☐	
	0~10V	☐	☒	☒	☐	
	2~10V	☐	☒	☐	☐	
	0~20mA	☒	☐	☒	☐	
	4~20mA	☒	☐	☐	☐	



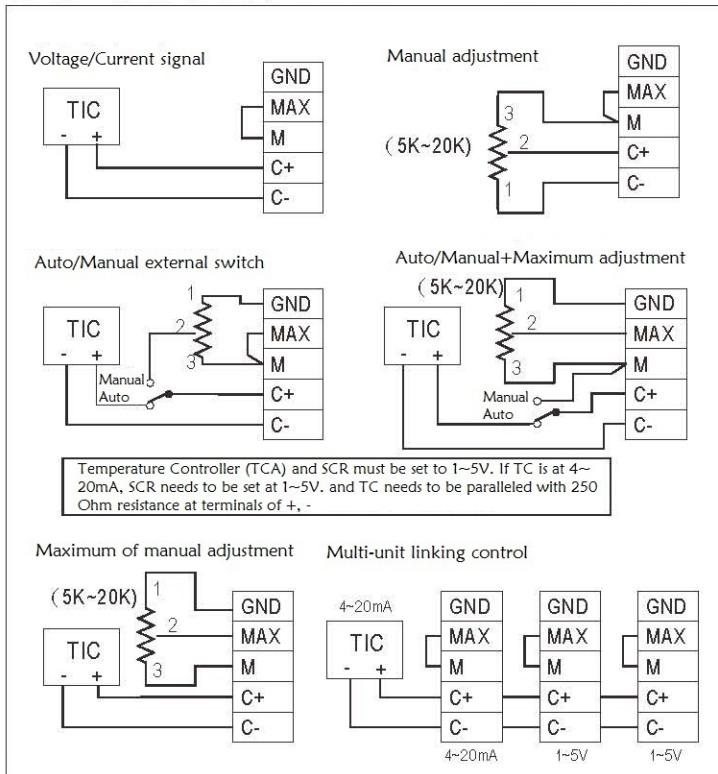
Output Method and Application

Phase Control	10%	50%	90%
Advantages: Can be applied to such load types as fixed resistance, variable resistance and lighting adjusting No interrupted signal in continuous output Disadvantages: May cause harmonic interference when triggered			
Zero Cross Control	10%	50%	90%
Advantages: Won't cause harmonic interference No components of half waves so as to reach the highest power factor Disadvantages: Only applicable to heaters of fixed resistive type When outputting, the current indicator might appear with dithering Likely to cause burn-in to the heating element			

Power Wiring Diagram



Input Signal Diagram



Error Display & Troubleshooting

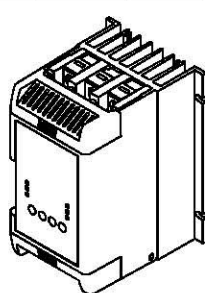
PL Power Indicator Off	- Aux power is not connected or the voltage is abnormal – check if the power at AC 1, 2 terminal is normal - Over-voltage or abnormally surge will burn the power protection circuit of the control board
Fuse Indicator On	- Main power disconnected, under phase with the power, supply voltage or phase sequence abnormal - Fuse breaks
O.H Indicator On	- Ambient temperature too high or bad air circulation in the cabinet - Fan is not start – failure or jammed by a foreign body - Error specification or loading current too big - If the terminals are not fastened tight, which will cause contact resistance too big, and generate high temperature at the contacts
Output voltage cannot correspond with input command	- Check if the VRs of min. and max. on the panel are adjusted - External input signal is not corresponding to mode setting
SCR none output	- Aux. power is disconnected – PL power indicator is off. - Input signal is disconnected – IN indicator is off - Main power is disconnected or under phase – Fuse indicator is on - Heatsink overheated – O.H indicator is on - IN indicator is on, OUT indicator is off and no error message – M & Max signal is not short-circuited
SCR fails to shut down	- Panel MIN (minimum setting) adjusted, please counterclockwise switch to minimum - External Input signal is not corresponding to mode setting - Check if the loading and house is short-circuited - Check if the load common points and N phase is short-circuited - Harmonics interference (i.e. generator) causes SCR unstable to be shut down - SCR power components is short-circuited or the controlling board fails
3 phase current unbalanced	- Check the loading resistance, impedance 3-phase whether averaged - Three phase voltage un-average – causes by inadequate power capacity or the generator - Harmonic interference (i.e. generator) causes SCR sync signal abnormal

If the trouble cannot be solved after even through the above troubleshooting is completely, please contact our staff for solutions.

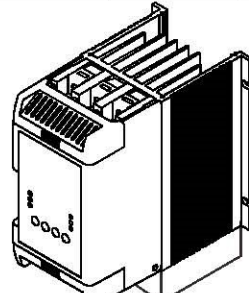
Dimension

Model	Current	Length L(mm)	Width W(mm)	Height H(mm)	Fixed size A & B(mm)	Cooling method	Fig.
TRL 3φ3W	30A	145	96	110	100,88	Self-cooling	1
	35A	175	96	110	100,88	Fan cooling	1
	50A	175	96	152	100,88		2
	75A	175	96	152	100,88		2

①



②



Installing Instruction

- Adopts vertical installing so as to achieve the best radiating effect
- Notice the width of the interspace two heat sinks to assure the best radiating capability
- Keep sufficient space for ventilation as the upper and lower side
- Control cabinet should have vent holes and be mounted with cooling fans so as to make ventilation better
- If the internal temperature is too high, please use the current lower than 70% of the rated current

Instruction of changing the fuse

- Dismount the top terminal cover
- Take down the two M3 screws
- Pull up the cover about 45°

When pull up the cover, don't let the angle exceed 60°, in order to avoid the inside wires be pull break

Safety notice



Caution



Dangerous

- Power wires connection according to National Electrical code to prevent hazard to human and equipment
- To prevent electric shock, please make sure the power system has been closed before changing the fuse
- Please don't use beyond the rated current. If the power is unsteady, please retain sufficient current for safety reservation
- Please tightly lock terminal screws, to prevent components burnt by the surge or overheated contacts
- The internal parts of the device are components with high voltage and high temperature. Do not touch any terminal to prevent hazard if is electrified

Aux. power voltage: 90VAC~240VAC±15%, 50Hz/60Hz
 Main power voltage: 3-phase 220VAC/380VAC/440VAC±15%, 50Hz/60Hz
 Ambient temperature/humidity: -10°C ~ +50°C / under 90% RH
 Compressive strength: AC2000V/1minute (power end、signal terminal & heat sink)
 Resistance to noise: 2KV 5KHz
 Insulation resistance: 200MΩ above / 500V (power end、signal terminal & heat sink)
 Housing material: ABS (UL94V)

CONCH ELECTRONIC CO., LTD.
 Made in Taiwan