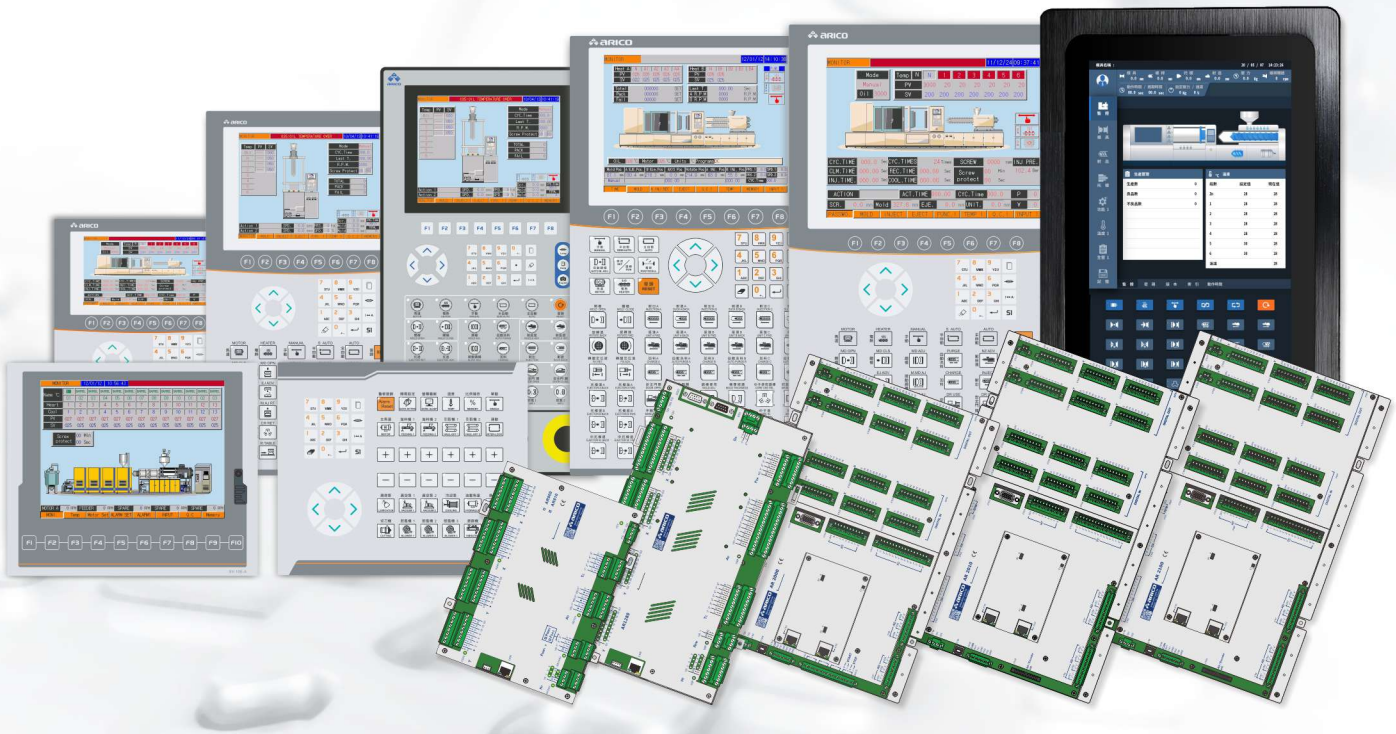
ARICO
長新科技股份有限公司
ARICO TECHNOLOGY CO., LTD.

AR Series

Plastic Machine Controller

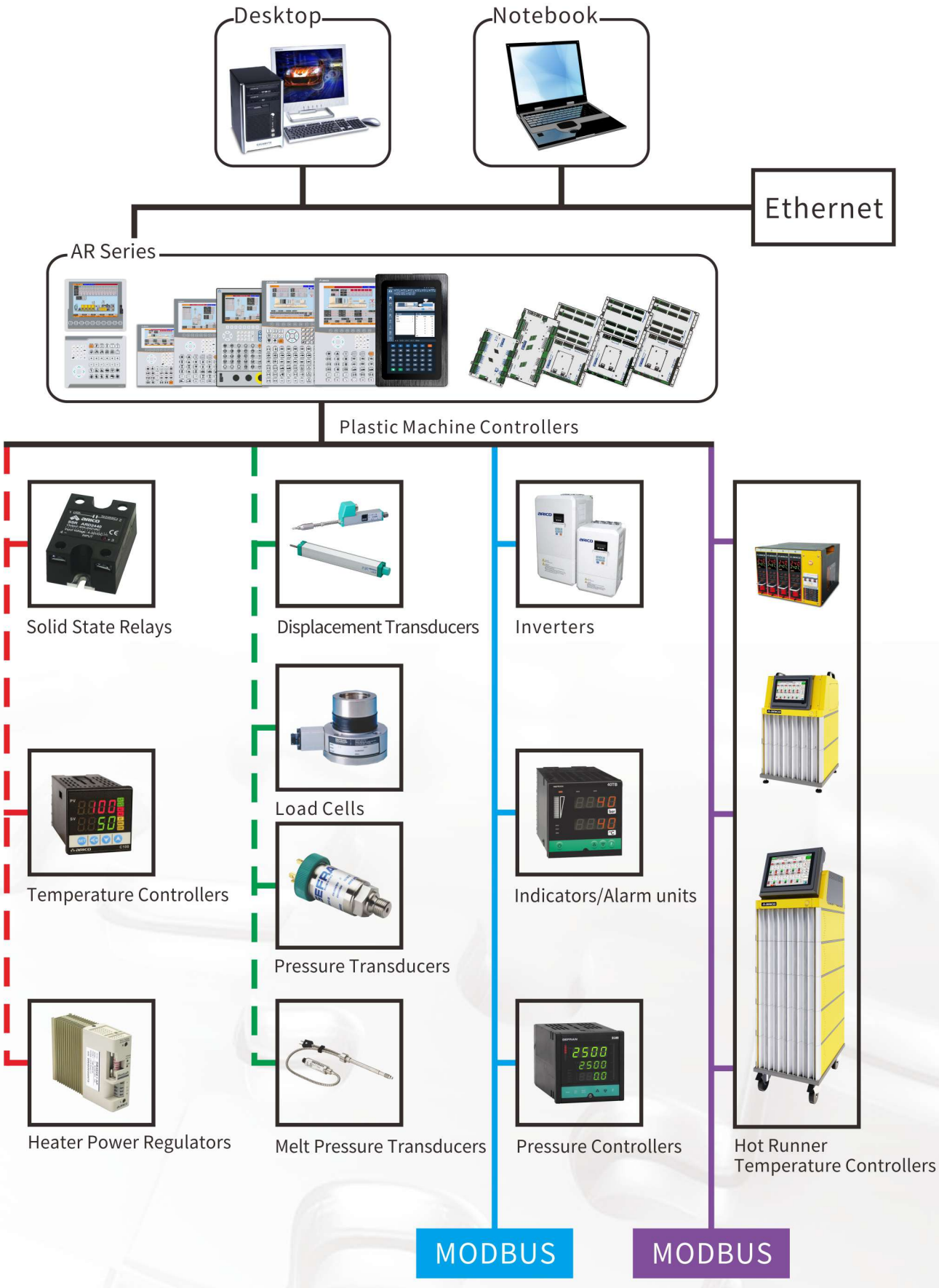


Easy To Link
Good Extensibility
Distributed Control System

Contents

ARICO TECHNOLOGY

Total Solutions for Plastic Machine



Characteristic

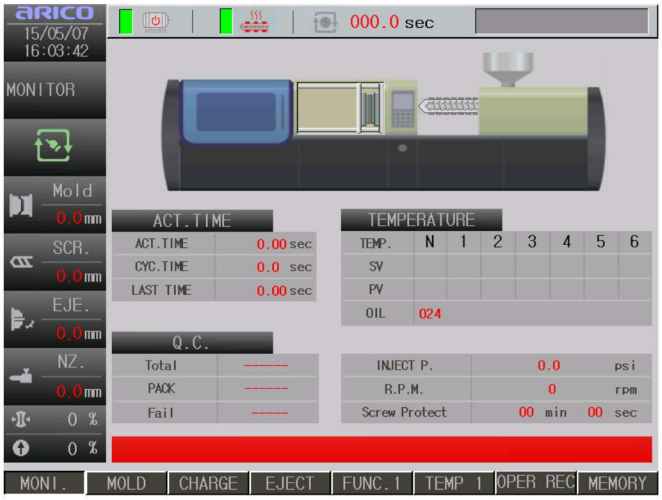
- It is simple to update all of program via USB memory driver.
- DCS control (HMI and Remote I/O module) for easy access of external device and/or controller.
- Various HMI size options: 7", 8", 10.4" and 12.1" or touch panel (10.4" & 12.1").
- High speed Ethernet communication between HMI and Remote I/O module.
- RS485 and Ethernet (Option) Interface.
- State-of-the-art window system HMI Screen Editor design by ARICO.
- PLC ladder editor for process program.
- It is non-industrial personal computer board, because the CPU of PC update very fast, face stop manufacture and version change, software maintain and cost will go high.
- I/O function define self and shift function:

  1. Change the defect I/O to another by setting, to solve problem at once.
  2. For some multi function valve, use program control them, it can use one program to apply the timing of the different hydraulic valve in extent permitted.
  3. For some multi function valve, use program control them, and collect them to front I/O to save the I/O ports.
     (DO have to consider the 2 A/port, 16 ports max. is 10 A)
  4. Define different DI, DO, AI, AO for different model machine, no need to modify the wiring, just setting to suitable hardware.
     (Example: it can be applied at old machine replace new controller, no need re-wire the all wires)

- Flip up icon of screen and alarm message.
- PLC Real-Time control.
- The 10 levels control for user.
- The present screen picture can be saved via USB port to external memory device (USB memory device).

Human Machine Interface

Monitor Page

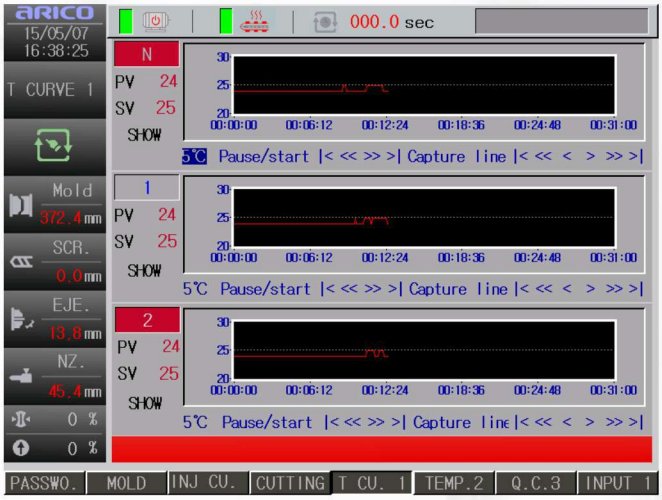


Module Memory Backup

Injection Curve

Operation Record

Temperature Curve



Alarm message record

AR800/AR810 System Block Diagram (NPN)

HMI

AR Series

or

FT Series

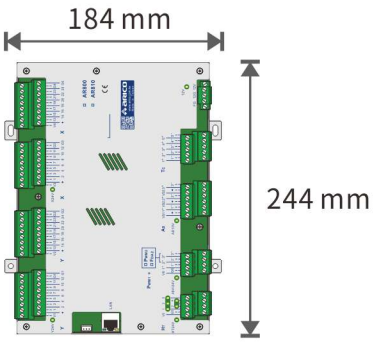
Both of available

Ethernet

Remote I/O Module

Standard

Digital Input	Digital Output
24 ports or 23 ports + 1 RPM	24 ports
AD Analog Input 16 bit, 0 ~ 10 V	PWM Output
3 channels	AR800: 3 ports AR810: 1 port
Temperature Input 12 bit	Tem. Output
5 zones	5 zones
	FDA Analog Output
	2 ports only for AR810



RS-485

Tem. Extended Module

Temperature Input (TC)	Heater Output (HT)
+ 8 zones	+ 8 zones
	Cooling Output (CL)
	+ 8 zones

RS-485

Temperature of 15 groups can be cascaded I/O

AR1280 System Block Diagram (NPN)

HMI

AR Series

or

FT Series

Both of available

Ethernet

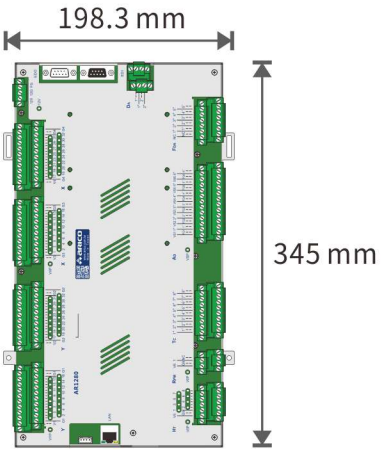
Remote I/O Module

Standard

Digital Input	Digital Output
32 ports	32 ports
AD Analog Input 16 bit 0 ~ 10 V	Temperature I/O
6 channels	8 zones
RPM Input	FDA Analog Output 0 ~ 10 V
1 port	5 channels

Option

DA Output 12 bit, ± 10 V
2 channels



RS-485

Digital I/O Extended Module

Digital Input
+ 8 ports
Digital Output
+ 8 ports

Tem. Extended Module

Temperature Input (TC)	Heater Output (HT)
+ 8 zones	+ 8 zones
	Cooling Output (CL)
	+ 8 zones

RS-485

Temperature of 15 groups can be cascaded I/O

AR2000 System Block Diagram (NPN)

HMI

AR Series

or

FT Series

Both of available

Ethernet

Remote I/O Module

Standard

Digital Input	Digital Output
32 ports	32 ports
AD Input 16 bit, 0 ~ 10 V	FDA Output 0 ~ 10 V
6 channels	4 channels
PWM Output	RPM Input
1 port	1 port
Temperature Input 12 bit	Temperature Output
8 zones	8 zones

Option

Digital Input	Digital Output
16 ports	16 ports
DA Output 12 bit, ± 10 V	S/S Interface
4 channels	4 sets

MagBridge

Digital Input/Output Extended Module

- Digital Input/Output Module #1 ~ #4
  (+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports
- Digital Input/Output Module #5 ~ #8
  (+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports
- Digital Input/Output Module #9 ~ #11
  (+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports

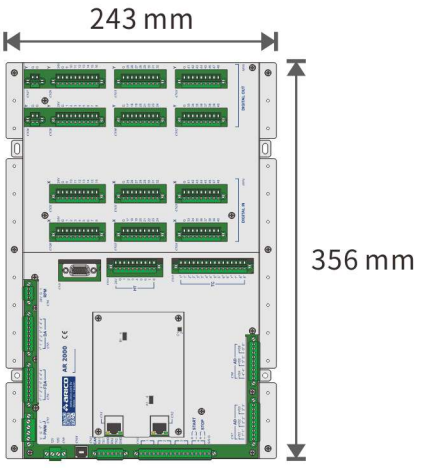
Tem. Extended Module

Temperature Input (TC)	Heater Output (HT)
+ 8 zones	+ 8 zones
	Cooling Output (CL)
	+ 8 zones

RS-485

RS-485

Temperature of 15 groups can be cascaded I/O



AR2010 System Block Diagram (NPN)

HMI

AR Series

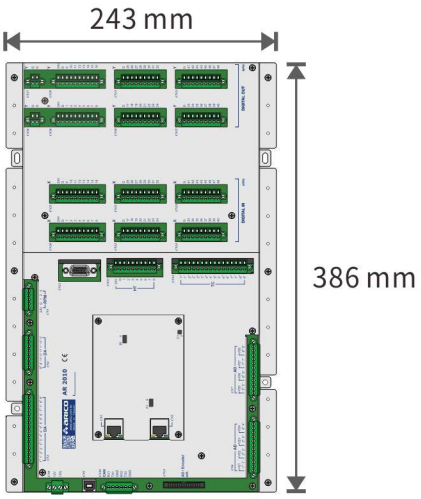
or

FT Series

Both of available

Ethernet

Remote I/O Module



Standard

Digital Input	Digital Output
32 ports	32 ports
AD Input 16 bit, 0 ~ 10 V	DA Output 12 bit, ± 10 V
8 channels	8 channels
Temperature Input (TC)	Temperature Output (HT)
8 zones	8 zones
RPM Input	
3 port	

Option

Digital Input	Digital Output
16 ports	16 ports
DA Output 12 bit, ± 10 V	
4 channels	

Extended Module

Select only one

- Encoder Input (Single mode): + 4 ports
- Encoder Input (Differential mode): + 4 ports
- AD Input 16 bit, 0 ~ 10 V: + 8 ports

MagBridge

Digital Input/Output Extended Module

- Digital Input/Output Module #1 ~ #4: (+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports
- Digital Input/Output Module #5 ~ #8: (+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports
- Digital Input/Output Module #9 ~ #11: (+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports

Tem. Extended Module

Temperature Input (TC)	Heater Output (HT)
+ 8 zones	+ 8 zones
	Cooling Output (CL)
	+ 8 zones

RS-485

RS-485

Temperature of 15 groups can be cascaded I/O

AR2100 System Block Diagram (PNP)

HMI

AR Series

or

FT Series

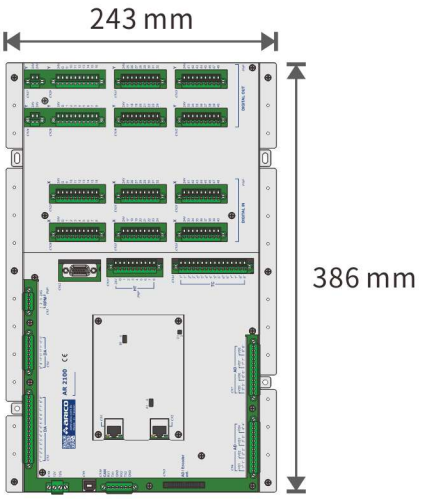
Both of available

Ethernet

Remote I/O Module

Standard

Digital Input	Digital Output
32 ports	32 ports
AD Input 16 bit, 0 ~ 10 V	DA Output 12 bit, ± 10 V
8 channels	8 channels
Temperature Input (TC)	Temperature Output (HT)
8 zones	8 zones
RPM Input	
3 port	



Option

Digital Input	Digital Output
16 ports	16 ports
DA Output 12 bit, ± 10 V	
4 channels	

Extended Module

Select only one

Encoder Input (Single mode)
+ 4 ports
Encoder Input (Differential mode)
+ 4 ports
AD Input 16 bit, 0 ~ 10 V
+ 8 ports

MagBridge

Digital Input/Output Extended Module

Digital Input/Output Module #1 ~ #4
(+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports
Digital Input/Output Module #5 ~ #8
(+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports
Digital Input/Output Module #9 ~ #11
(+ 16/+ 16) or (+ 32/+ 32) or (+ 48/+ 48) or (+ 64/+ 64) ports

Extended Module

Temperature Input (TC)	Heater Output (HT)
+ 8 zones	+ 8 zones
	Cooling Output (CL)
	+ 8 zones

RS-485

RS-485

Temperature of 15 groups can be cascaded I/O

Industrial Controller Comparison Table

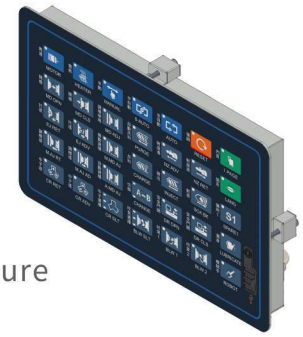
HMI Specifications Comparison Table			
Categories	AR series		FT series
HMI	7"/8"/10.4"/12.1"		15.6"/17.3"/21.5"
HMI CPU	Vesper/266 MHz	Vela/1 GHz	2 GHz
Internet	Yes (Optional)	Yes	Yes
RS-485/Can	RS-485*1	RS-485*1+Can*1 or RS-485*2	RS-485*1
Wi-Fi	×	Yes (Optional)	Yes
Touch Panel	Yes (Optional) , Able to expand with a Touch Panel (10.4"/12.1")		Yes

Controller Specifications Comparison Table					
Categories	AR800/AR810	AR1280	AR2000	AR2010	AR2100
PLC CPU	528 MHz	528 MHz	520 MHz		
Control CPU	72 MHz	528 MHz Time base = 0.25 ms	520 MHz Time base = 0.25 ms		
I/O Connection	NPN	NPN	NPN	NPN	PNP
Temperature PID Control	5	8	8	8	8
DI Digital Input	24 or 23 + 1 RPM	32	32/48	32/48	32/48
DO Digital Output	24	32	32/48	32/48	32/48
AD Analog Input	16 bit * 3	16 bit * 6	16 bit * 6	16 bit * 8	16 bit * 8
Start/Stop Input	×	×	×/4	×	×
FDA Analog Output	×/2	12 bit * 5 (0 ~ +10 V)	12 bit * 4 (0 ~ +10 V)	×	×
DA Analog Output	×	12 bit * 0/2 (0 ~ ± 10 V)	12 bit * 0/4 (0 ~ ± 10 V)	12 bit * 8/12 (0 ~ ± 10 V)	12 bit * 8/12 (0 ~ ± 10 V)
PWM Output	3/1	×	1	×	×
RPM Input	×	1	1	3	3
FPGA	×	PLC CPU & Control CPU data transmitted through a parallel FPGA connection; allows more precise control accuracy			

Hardware Expansion Specifications Comparison Table					
Temperature Module	Man-machine communication allows 15 sets of temperature module expansions; each module includes 8-zones temperature control				
I/O Expansion Module	×	Able to expand 1 module; each module DI/DO*8 (Max = 8)	Able to expand 12 modules; each module DI/DO * 16 (Max = 192)		
AD Expansion Module	×	×	×	16 bit * 8	16 bit * 8
Encoder Expansion Module	×	×	×	32 bit * 4	32 bit * 4

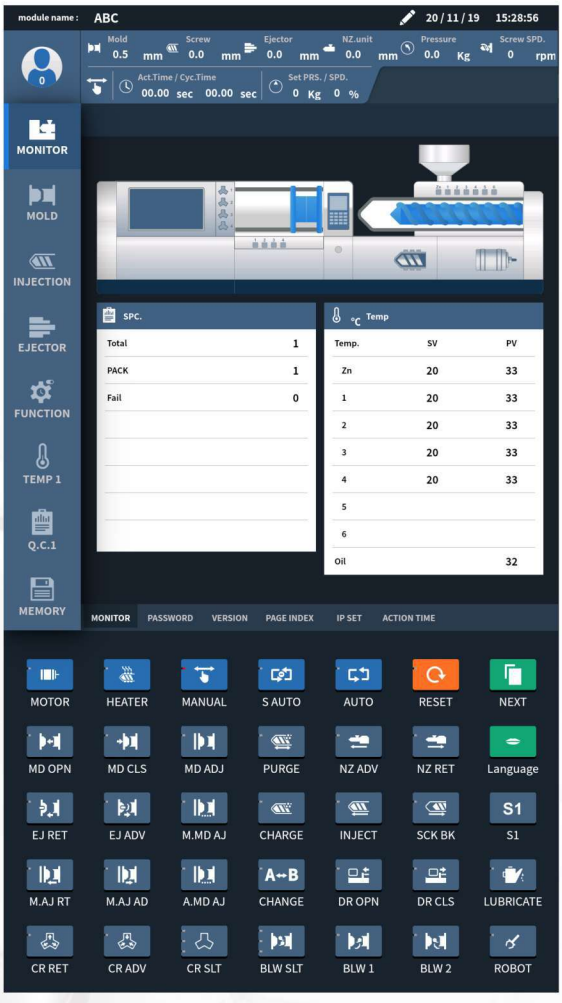
Industrial HMI

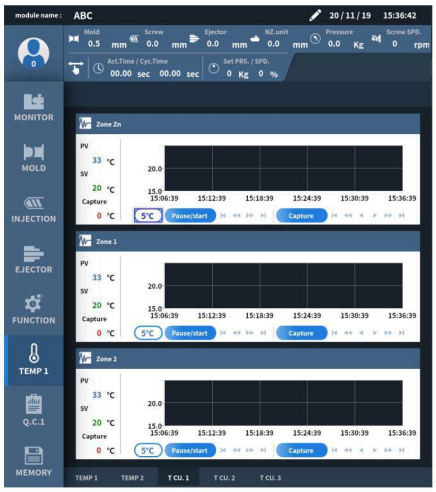
1. Full touch-capacitive HMI can use VNC viewer to monitor the HMI screen and remote to update the program.
2. FT HMI can display the screen of auxiliary equipment.
3. Connectable with all AR series controllers.
4. Optional independent operation panel.
5. Full touch operation, action keys can be programmed by software.
6. Suitable for injection Molding Machine, Extruder Machine, Blow Molding Machine.

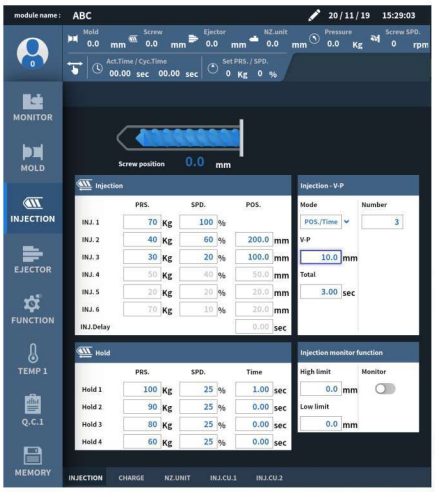


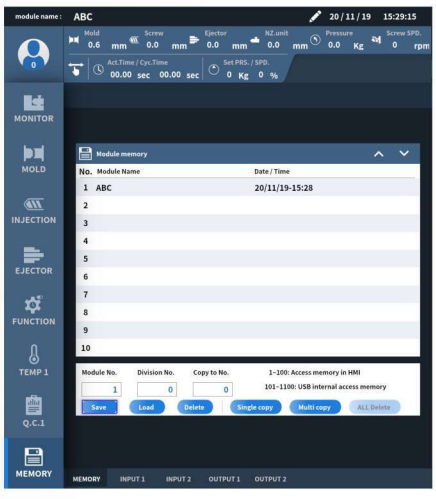
- 15.6"/17.3"/21.5" LCD
- 16:9 aspect ratio
- Fanless design
- In-built Wi-Fi
- Front panel IP65 protection class
- 2G DDR3 RAM, 32G SSD ROM
- Industrial grade aluminum alloy structure
- Capacitive touch panel

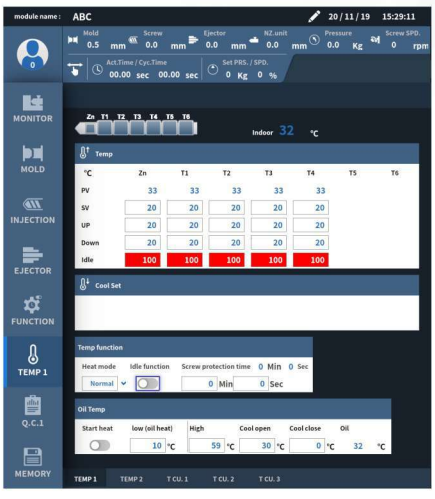
HMI





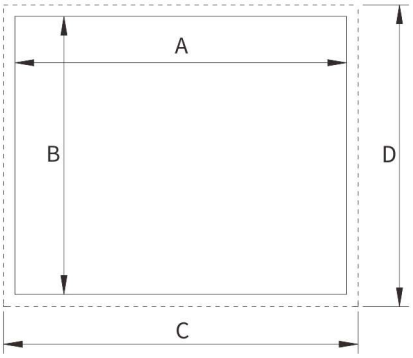


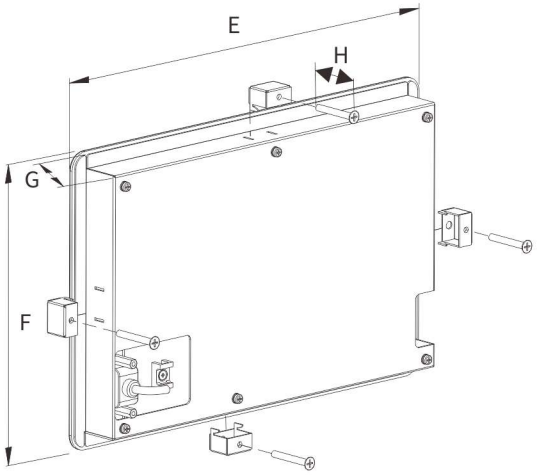




35 Keys Operation Panel

Installation dimension drawing



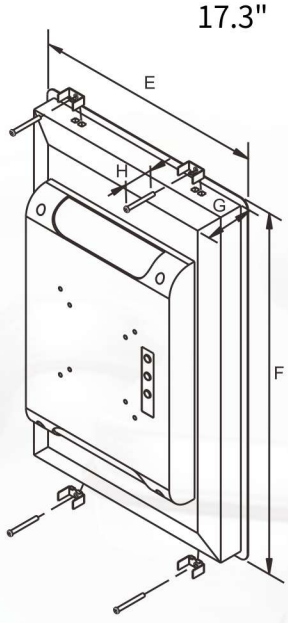


Unit: mm

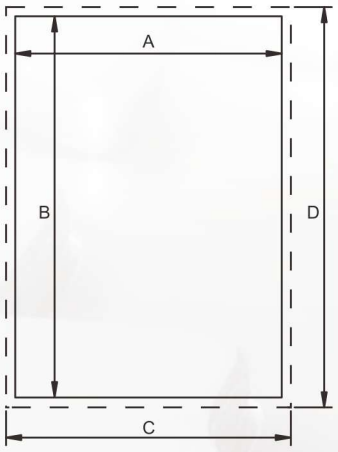
Operation Panel	Dimensions of installation opening		Recommended margin dimensions (Chassis interior diameter)		Width	Height	Depth	Length of screw	Recommended chassis depth
	A	B	C	D	E	F	G	H	
35 Keys	251	157	331	237	269	175	25	30	80

HMI Dimension

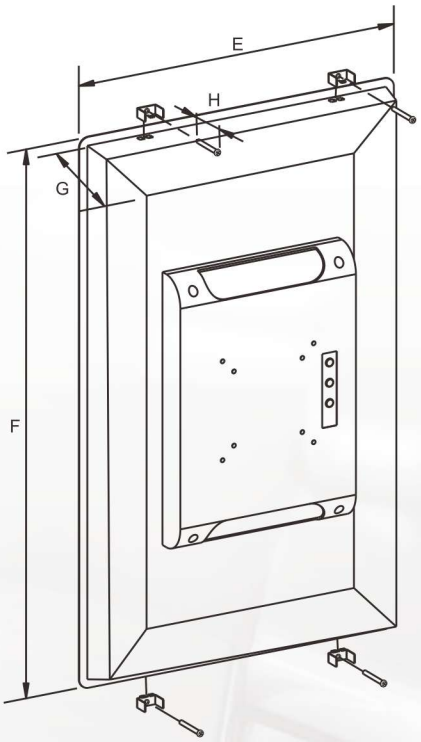
15.6"
17.3"



Installation dimension drawing



21.5"



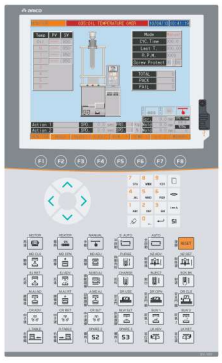
Unit: mm

LCD Size	Dimensions of installation opening		Recommended margin dimensions (Chassis interior diameter)		Width	Height	Depth	Length of screw	Recommended chassis depth
	A	B	C	D	E	F	G	H	
15.6"	253	404	333	484	269	420	70	35	80
17.3"	274	441	354	521	291	458	62		
21.5"	329.5	541.5	409.5	621.5	345	557	63		

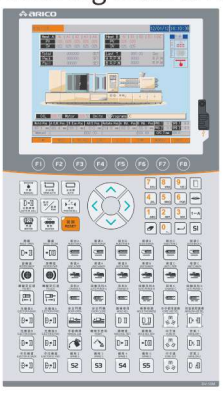
AR HMI

8" HMI

10.4" HMI

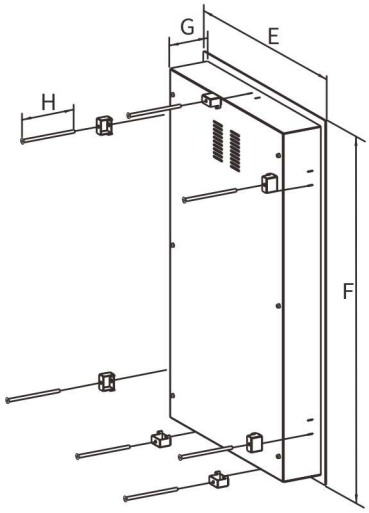


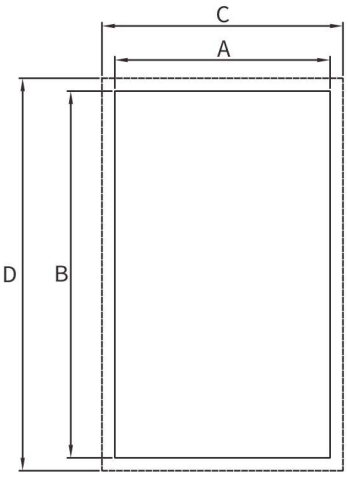
10.4" HMI
Multi Color
molding machine

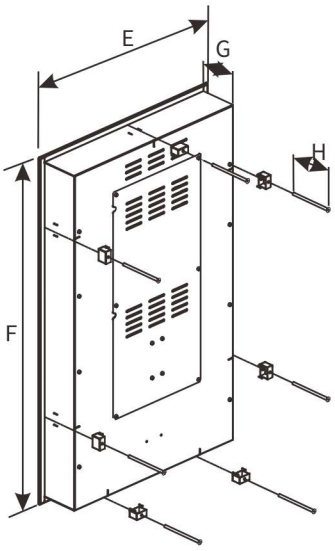


12.1" HMI

12.1" HMI
Multi Color
molding machine







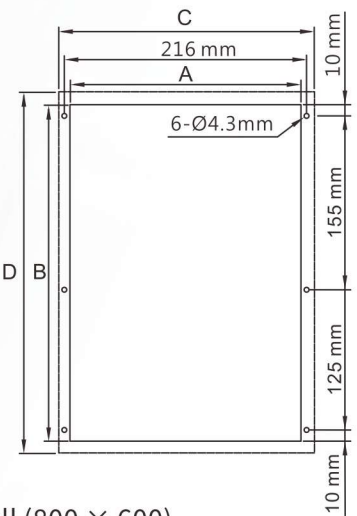
Unit: mm

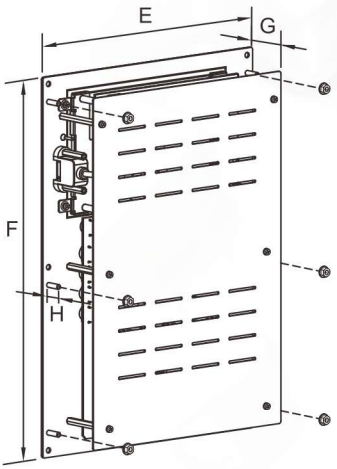
LCD Size	Dimensions of installation opening		Recommended margin dimensions (Chassis interior diameter)		Width	Height	Depth	Length of screw	Recommended chassis depth
	A	B	C	D	E	F	G	H	
8"	219	400	299	480	237.5	417.8	61	70	80
10.4"	267	451	347	531	285	469.1			
10.4" Multi Color molding machine	271	487	351	567	288.9	505.3	64		
12.1"	314	500	394	580	332	517.5	61		
12.1" Multi Color molding machine	314	531	394	611	332	548.5			

7" HMI

Unit: mm

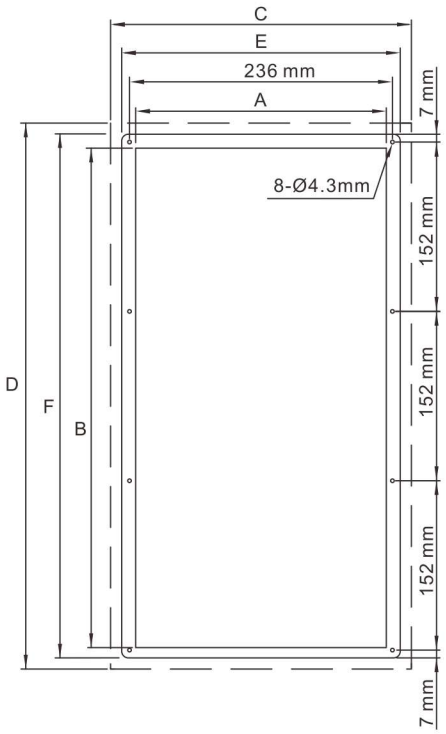
LCD Size		7"
Dimensions of installation opening	A	206
	B	300
Recommended margin dimensions (Chassis interior diameter)	C	286
	D	380
Width	E	228
Height	F	322
Depth	G	51
Length of screw	H	10
Recommended chassis depth		80

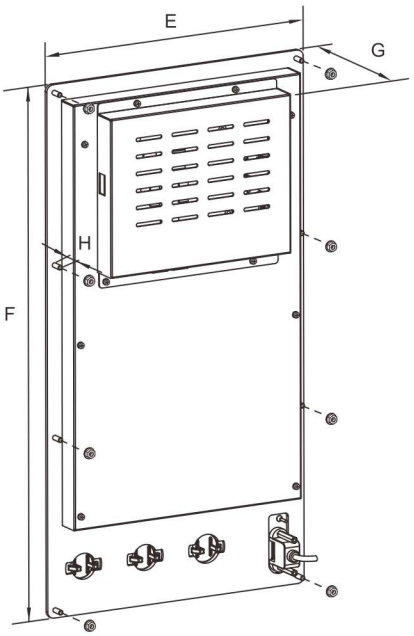




Note: 7" is (800 × 480), other LCD modules are all (800 × 600)

8" HMI

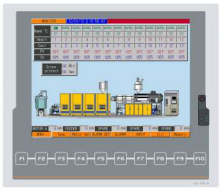


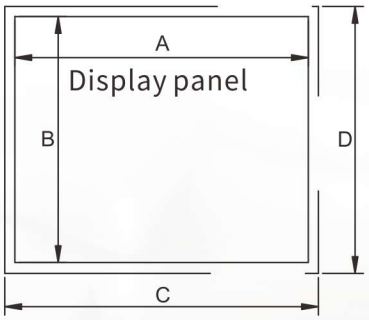


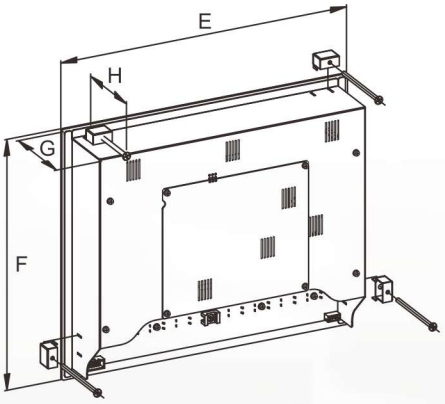
Unit: mm

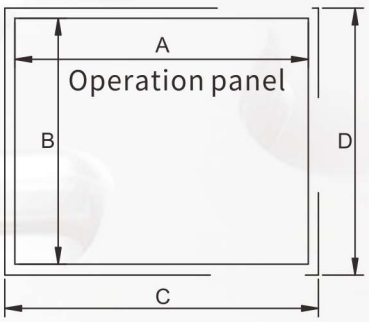
LCD Size	Dimensions of installation opening		Recommended margin dimensions (Chassis interior diameter)		Width	Height	Depth	Length of screw	Recommended chassis depth
	A	B	C	D	E	F	G	H	
8"	224	446	304	526	250	470	51	10	80

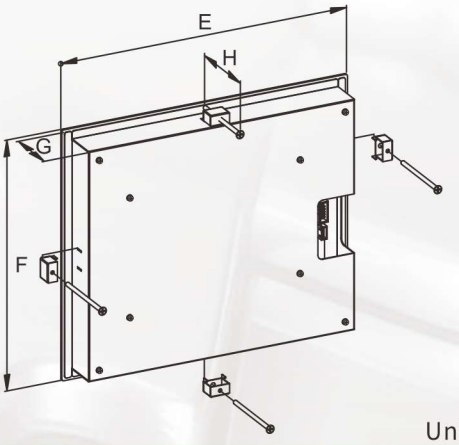
10.4" Extruder Machine









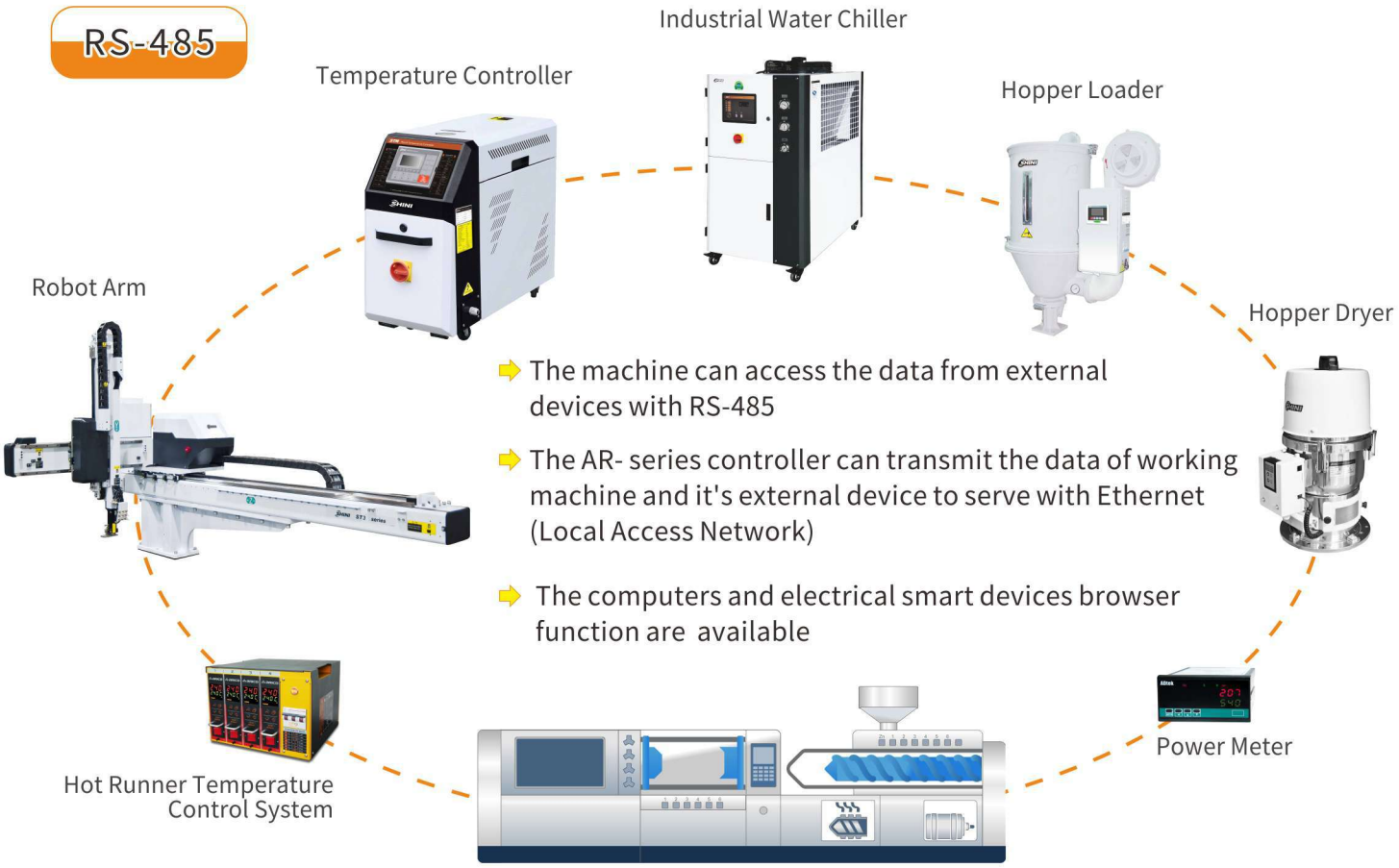


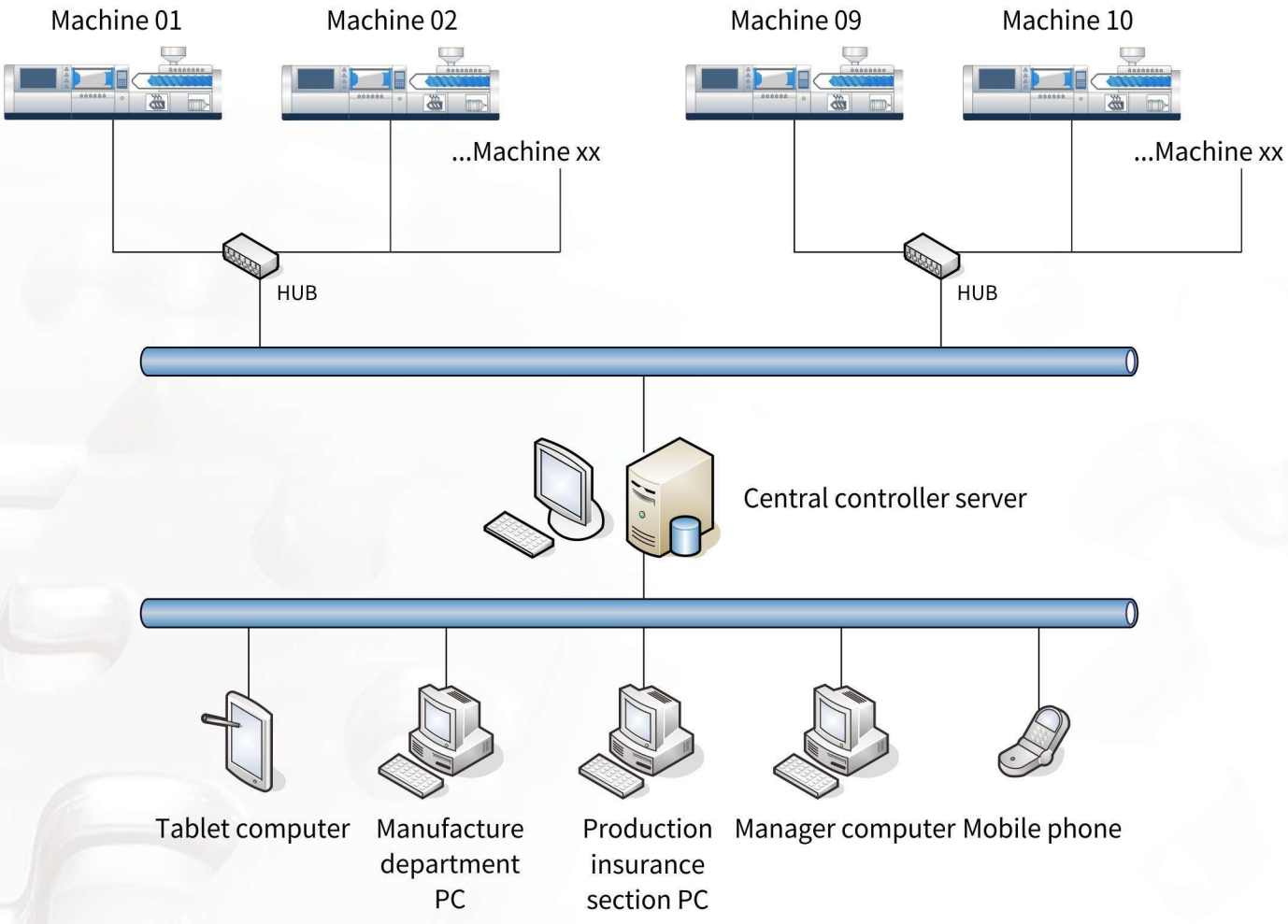
Unit: mm

Panel	Dimensions of installation		Recommended chassis inside margin		Width	Height	Depth	Length of screw	Recommended chassis depth
	A	B	C	D	E	F	G	H	
10.4" Display	270	227	350	307	287.6	244.8	61	70	80
10.4" Operating							34		

Internet of Things System Architecture

Image source: SHINI PLASTICS TECHNOLOGIES, INC.



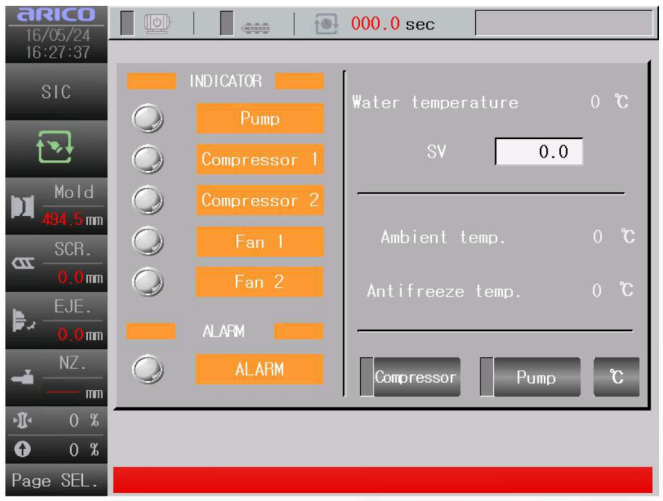


The Connected Page of Controller and External Device

Hopper Dryer

Temperature Controller

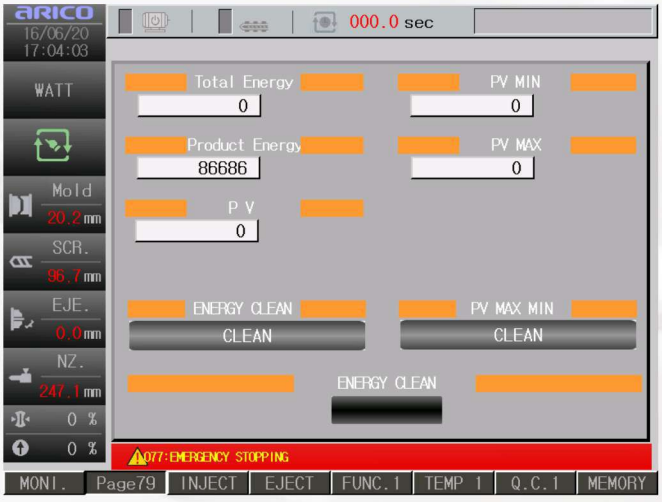
Industrial Water Chiller



Hopper Loader

Hot Runner Setting Quickly

Power Meter

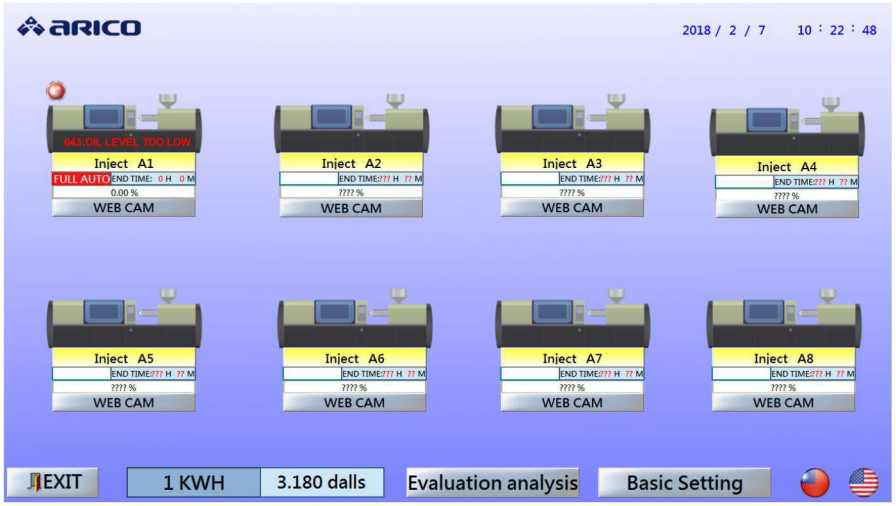


EASYLINK NetSystem

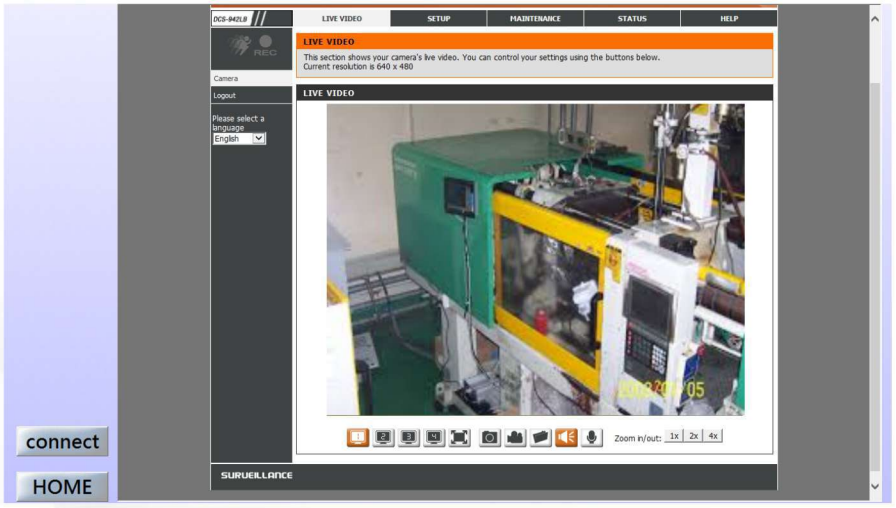
EASYLINK is integrate and processes all data of the machine for these functions:
[Production Monitoring], **[Quality Management]**, **[Abnormal Inspection]**, **[Smart Management]**

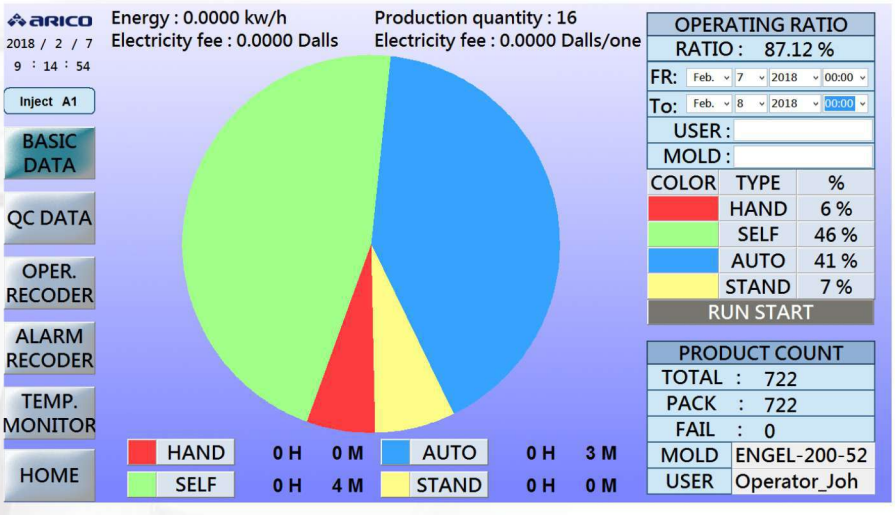
The characteristic of production management, advance the function is include the real-time video monitor, e-mail notification functions, and machine/operator management, and intelligent management to solve the difficulty of the factory management.

Production Monitoring



Machine overview page:
[machine tri-color light]
[Alarm display]
[machine name]
[Operation mode]
[production completion time]
[Percentage of production]
[Video monitoring]

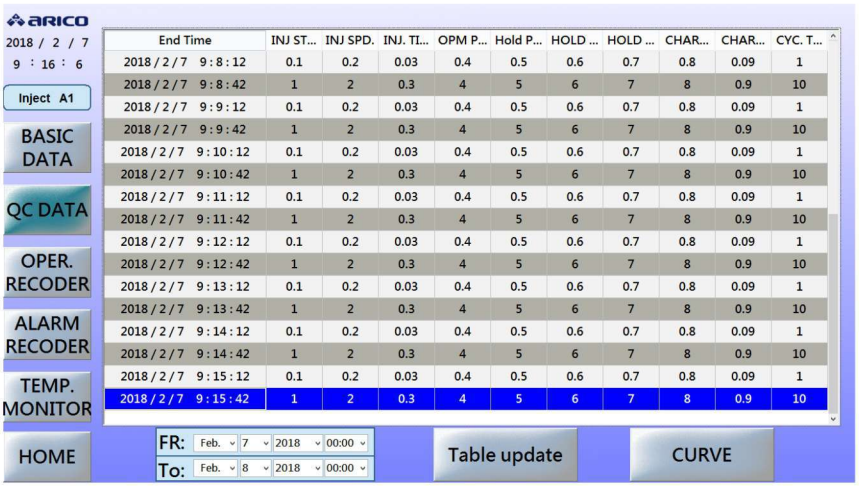




Basic profile page:
[Status of machine]
[Availability]
[Count of Product]

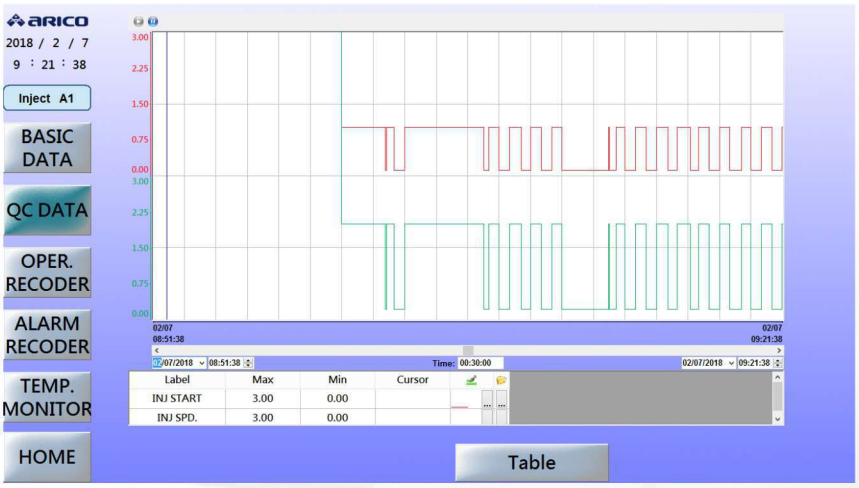
【Real-time Video Monitor】

Quality Management



End Time	INJ ST...	INJ SPD.	INJ. TI...	OPM P...	Hold P...	HOLD ...	HOLD ...	CHAR...	CHAR...	CYC. T...
2018 / 2 / 7 9 : 8 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 8 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 9 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 9 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 10 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 10 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 11 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 11 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 12 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 12 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 13 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 13 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 14 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 14 : 42	1	2	0.3	4	5	6	7	8	0.9	10
2018 / 2 / 7 9 : 15 : 12	0.1	0.2	0.03	0.4	0.5	0.6	0.7	0.8	0.09	1
2018 / 2 / 7 9 : 15 : 42	1	2	0.3	4	5	6	7	8	0.9	10

QC information:
[Parameter of QC]
[Trend of QC]
[Curve of Temperature]



Temperature monitoring page:
Shown as a graph,
To observe temperature easily

【E-mail & LINE Notification Function】

Abnormal Inspection

The record page of Modified: Record the parameters modified of the machine

ARICO
2018 / 2 / 7
9 : 28 : 50
Inject A1
BASIC DATA
QC DATA
OPER. RECODER
ALARM RECODER
TEMP. MONITOR
HOME

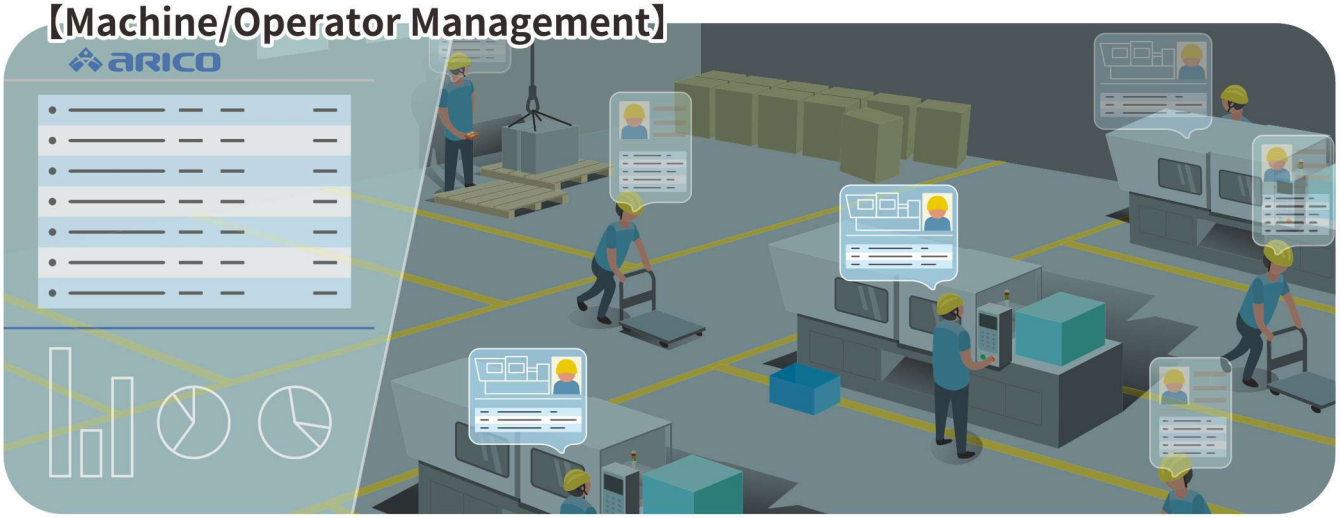
ID	Modify Time	Modify content	Modify before	Modify after	Editor
109	2018 / 2 / 7 9 : 24 : 0	Hold-press 3 speed set	10	55	Operator_John
110	2018 / 2 / 7 9 : 24 : 16	Close mold 1 speed set	35	100	Operator_John
111	2018 / 2 / 7 9 : 24 : 26	Close mold 5 speed set	2	100	Operator_John
112	2018 / 2 / 7 9 : 24 : 44	Charge 2 position set	0	10	Operator_John
113	2018 / 2 / 7 9 : 24 : 56	Purge charge speed set	25	60	Operator_John
114	2018 / 2 / 7 9 : 25 : 32	Purge charge time set	2	3	Operator_John
115	2018 / 2 / 7 9 : 25 : 38	Suck back 2 position set	3	5	Operator_John
116	2018 / 2 / 7 9 : 26 : 0	Core 1 in:zone 1 speed set	20	60	Operator_John
117	2018 / 2 / 7 9 : 26 : 28	Zone N temp set	30	100	Operator_John
118	2018 / 2 / 7 9 : 26 : 38	Zone 1 temp set	30	120	Operator_John
119	2018 / 2 / 7 9 : 27 : 10	TEMP2:SW ON (SUNDAY)	OFF	ON	Operator_John
120	2018 / 2 / 7 9 : 27 : 42	TEMP2:SW ON (SUNDAY)	ON	OFF	Operator_John
121	2018 / 2 / 7 9 : 27 : 54	Nozzle forward 2 time set	0.5	1	Operator_John
122	2018 / 2 / 7 9 : 28 : 6	Nozzle open delay time set	1	0.5	Operator_John
123	2018 / 2 / 7 9 : 28 : 10	Nozzle close delay time set	1	0.5	Operator_John
124	2018 / 2 / 7 9 : 28 : 46	Zone N limit temp set	10	20	Operator_John
125	2018 / 2 / 7 9 : 28 : 50	Zone 1 limit temp set	10	15	Operator_John

Alarm message Page: Alarm history recorded of machine

ARICO
2018 / 2 / 7
10 : 25 : 55
Inject A1
BASIC DATA
QC DATA
OPER. RECODER
ALARM RECODER
TEMP. MONITOR
HOME

ID	Start Time	Endding Time	Alarm description
174	2018 / 1 / 22 10 : 23 : 50	2018 / 1 / 22 10 : 25 : 14	077:EMERGENCY STOPPING
175	2018 / 1 / 22 10 : 25 : 20	2018 / 1 / 22 10 : 52 : 28	040:MOTOR OVERLOAD
176	2018 / 1 / 22 10 : 52 : 32	2018 / 1 / 22 10 : 57 : 34	077:EMERGENCY STOPPING
177	2018 / 1 / 22 11 : 11 : 22	2018 / 1 / 22 11 : 17 : 52	077:EMERGENCY STOPPING
178	2018 / 1 / 22 11 : 19 : 40	2018 / 1 / 22 11 : 26 : 10	043:OIL LEVEL TOO LOW
179	2018 / 1 / 22 11 : 26 : 20	2018 / 1 / 22 11 : 32 : 12	077:EMERGENCY STOPPING
180	2018 / 1 / 22 13 : 31 : 2	2018 / 1 / 22 13 : 46 : 22	050:SAFE DOOR NOT CLOSE
181	2018 / 1 / 22 13 : 47 : 8	2018 / 1 / 22 13 : 58 : 30	043:OIL LEVEL TOO LOW
182	2018 / 1 / 22 16 : 19 : 50	2018 / 1 / 22 16 : 24 : 22	040:MOTOR OVERLOAD
183	2018 / 1 / 22 16 : 24 : 24	2018 / 1 / 22 16 : 40 : 42	050:SAFE DOOR NOT CLOSE
184	2018 / 1 / 22 16 : 40 : 56	2018 / 1 / 22 16 : 49 : 32	040:MOTOR OVERLOAD
185	2018 / 1 / 22 17 : 21 : 2	2018 / 1 / 22 17 : 27 : 42	077:EMERGENCY STOPPING
186	2018 / 1 / 22 17 : 27 : 44	2018 / 1 / 22 17 : 37 : 0	043:OIL LEVEL TOO LOW
187	2018 / 1 / 23 9 : 4 : 36	2018 / 1 / 23 9 : 4 : 54	050:SAFE DOOR NOT CLOSE
188	2018 / 1 / 23 9 : 4 : 58	2018 / 1 / 23 9 : 10 : 44	050:SAFE DOOR NOT CLOSE
189	2018 / 2 / 7 9 : 0 : 48	2018 / 2 / 7 9 : 3 : 0	077:EMERGENCY STOPPING
190	2018 / 2 / 7 9 : 3 : 4	2018 / 2 / 7 9 : 3 : 16	077:EMERGENCY STOPPING

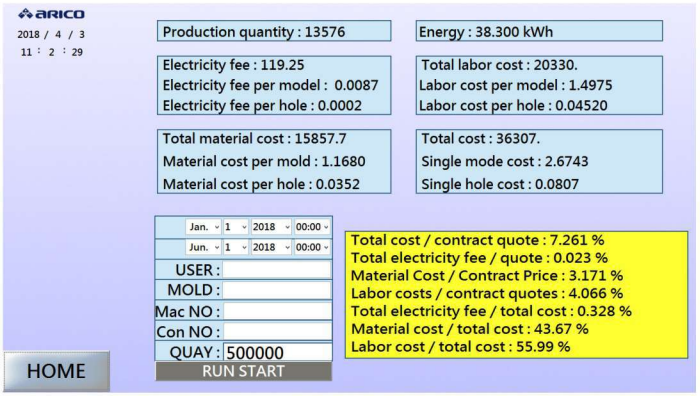
【Machine/Operator Management】



Smart Management

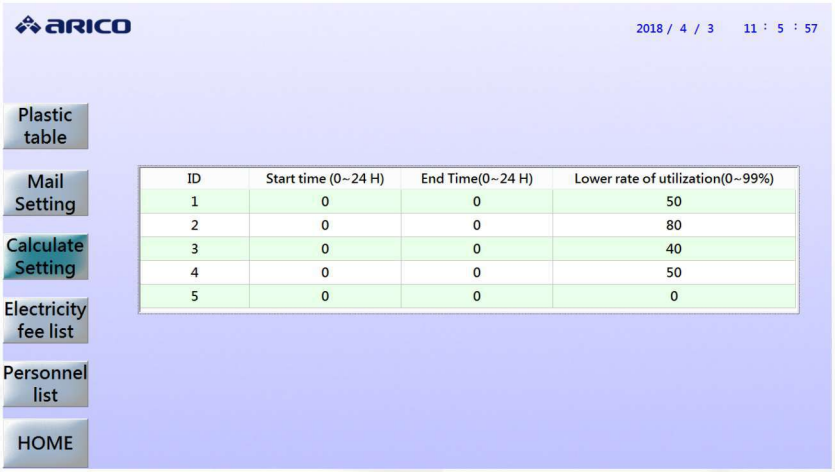
Cost Estimation and Analysis:

The cost calculated quickly



Mail box settings:

Abnormal email notification and settlement email notification (low Availability)



Availability settlement:

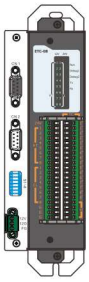
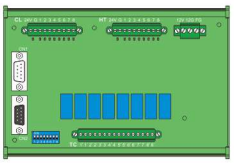
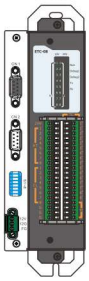
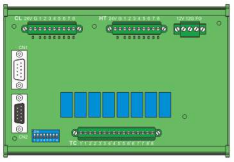
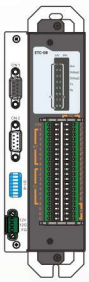
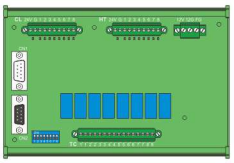
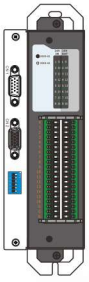
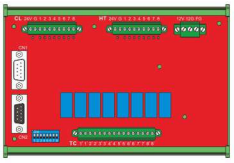
There are 5 time periods that can be set and it will start to calculate the Availability in this period after each time period ends, if any machine is lower than the set availability rate, it will mail to staff of the notification setting, and point out the operator of machine.

Staff list:

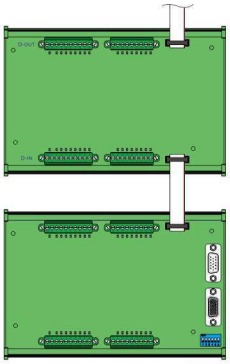
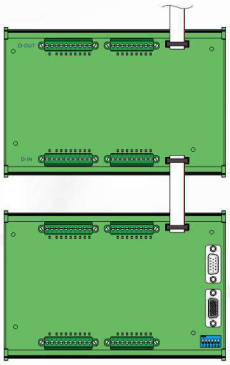
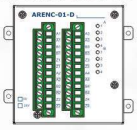
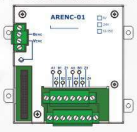
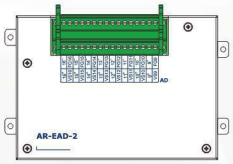
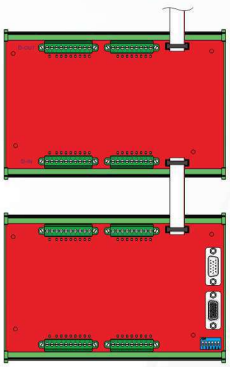
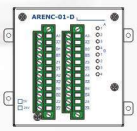
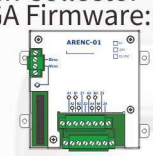
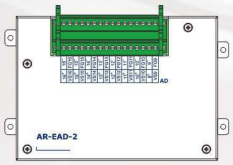
Use USB driver for manage personnel ID, linking the machine production data and personnel, include searching data modified on human machine interface without additional Purchase personnel identification system to reduce equipment costs.

External Expansion Module

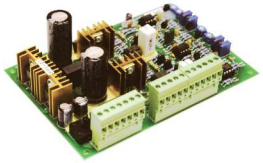
HMI

	Temperature Expansion Module (Iron shell)	Temperature Expansion Module (Plastic shell)	16 * DI & 16 * DO Expansion Board (Iron shell)
AR1280 NPN	NPN (Connect HMI) (Extension)   Cable Standard = 5 m or customize Cable Standard = 0.45 m	NPN 	
AR2000 NPN	NPN (Connect HMI) (Extension)   Cable Standard = 5 m or customize Cable Standard = 0.45 m	NPN 	NPN   Main Board (Max. 192 ports) Expansion Board
AR2010 NPN	NPN (Connect HMI) (Extension)   Cable Standard = 5 m or customize Cable Standard = 0.45 m	NPN 	NPN   Main Board (Max. 192 ports) Expansion Board
AR2100 PNP	PNP 		

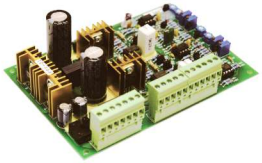
Remote I/O Module

	16 * DI & 16 * DO Expansion Board (Plastic shell)	4 Channels Encoder Expansion Module	8 * DI & 8 * DO Expansion Module	AD Expansion Module
			NPN 	
	NPN 			
	NPN 	Line Driver FPGA Firmware: FE12  Open Collector FPGA Firmware: FE12  Can be installed on top sheet metal		 Can be installed on top sheet metal
	PNP 	Line Driver FPGA Firmware: FE12  Open Collector FPGA Firmware: FE12  Can be installed on top sheet metal		 Can be installed on top sheet metal

Other Accessories



FPV-01

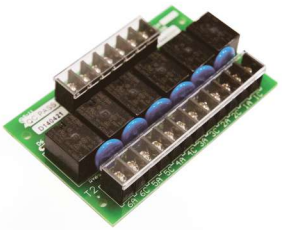


FPV-01N

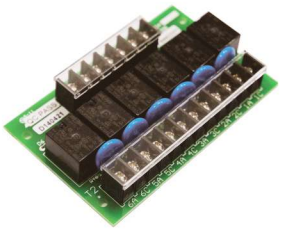
ARPV-01

ARPV-04

AC Auxiliary Power	15 VAC/0 VAC/15 VAC		-	
AC Input Power	50 VAC (40 Ω)/24 VAC (10 Ω)		-	
DC Auxiliary Power	-		24 VDC	
DC Input Power	-		48 VDC	
Power Output (Max.)	25.6 W (40 Ω)/6.4 W (10 Ω) Jumper Select			160 W
Load Impedance	40/10 Ω			10 Ω
Output Current (Max.)	0.8 A			4 A
Control Signal Input	0 ~ 10 VDC			
Fuse	2 A			5 A
Vibration Frequency	120 Hz			
Ascending Speed	Coarse Adjustment (Three-quarters turn)			
Descent Speed	Coarse Adjustment (Three-quarters turn)			
Output Value (Max.)	Fine Adjustment (25 rpm)			
Output Value (Min.)	Fine Adjustment (25 rpm)	Coarse Adjustment (Three-quarters turn)	Fine Adjustment (25 rpm)	Fine Adjustment (25 rpm)



Relay-04 (NPN)

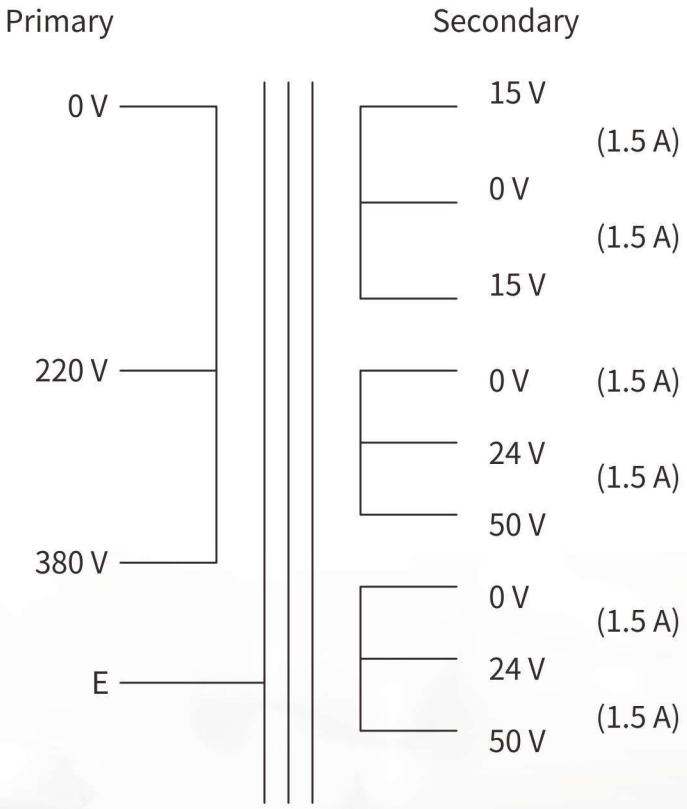


Relay-05 (PNP)

Control Output		
Rated Carrying Current	12 A	12 A
Min. Applicable Load	10 mA 5 VDC	10 mA 5 VDC
Max. Allowable Voltage	250 VAC/30 VDC	250 VAC/30 VDC
Rated Load	12 A/120 VAC 10 A/24 VDC 10 A/240 VAC	12 A/120 VAC 10 A/24 VDC 10 A/240 VAC
Control Input		
Nominal Voltage	24 VDC	24 VDC
Nominal Current	15 mA	15 mA
Pick Up Voltage	< 2.4 VDC	> 18 VDC
Drop Out Voltage	> 18 VDC	< 2.4 VDC
Max. Applicable Voltage	26.4 VDC	26.4 VDC
Operate Time	10 ms	10 ms
Release Time	5 ms	5 ms
Power Consumption	0.36 W	0.36 W

The Specification of Transformer MA-02

1. The Primary side input: AC 0 V, 220 V, 380 V, E.
2. The secondary side have 3 sets output:
   (1) AC 15 V, 0 V, 15 V (1.5 A)
   (2) AC 0 V, 24 V, 50 V (1.5 A)
   (3) AC 0 V, 24 V, 50 V (1.5 A)
3. The total Watt: 195 W
4. The diagram as follow:



Switching Power Supply-PMT-12V35W1AA

CB Certified for worldwide use

Highlights & Features

- Universal AC input voltage range
- Power will not de-rate from input voltage 90 VAC to 264 VAC
- High MTBF > 700,000 hrs per Telcordia SR-332
- Short Circuit/Overvoltage/Overload/Over Temperature Protections
- Versatile connector options (Terminal Block, Front Face, Harness)

Model Numbering

							CC Code**
PM	□–	12 V	35 W	1	A	□	□
Panel Mount	Product Type T–Enclosed L–L Frame* B–Open Frame*	Output Voltage	Output Power	Single Phase	No PFC	Connector Type A–Terminal Block G–Front Face* H–Harness*	Blank-Without connector cover A–With connector cover B–With conformal coating

*Options
**For Enclosed type with Terminal Block

Input Ratings/Characteristics		
Nominal Input Voltage		100-240 VAC
Input Voltage Range		90-264 VAC
Nominal Input Frequency		50-60 Hz
Input Frequency Range		47-63 Hz
Input Current		< 0.75 A @ 115 VAC, < 0.50 A @ 230 VAC
Efficiency at 100% Load		> 84.0% @ 115 VAC & 23 0VAC
Max Power Dissipation	0% load	0.29 W typ. @ 230 VAC
	100% load	6.11 W typ. @ 230 VAC
Max Inrush Current(Cold Start)		<30A@115VAC, < 60 A@230VAC
Leakage Current		< 1 mA @ 240 VAC

Mechanical	
Case Chassis/Cover	Aluminium/SGCC
Dimensions (L x W x H)	98 x 98 x 38 mm (3.86 x 3.86 x 1.50 inch)
Unit Weight	0.22 kg (0.49 lb)
Indicator	Green LED (DC OK)
Cooling System	Convection
Terminal	M3.5 x 5 Pins (Rated 300V/15A)
Wire	AWG 22-12
Noise (1 Meter from power supply)	Sound Pressure Level (SPL) < 25 dBA

Protections	
Overvoltage	16 V, +10%/-5%, SELV Output, Hiccup Mode, Non-Latching (Auto-Recovery)
Overload/Overcurrent	> 120% of rated load current, Hiccup Mode, Non-Latching (Auto-Recovery)
Over Temperature	Non-Latching (Auto-Recovery)
Short Circuit	Hiccup Mode, Non-Latching (Auto-Recovery when the fault is removed)
Internal Fuse at L pin	T3.15 AH
Degree of Protection	IPX0
Protection Against Shock	Class I with PE* connection
*PE: Primary Earth	

Reliability Data	
MTBF	> 700,000 hrs as per Telcordia SR-332 I/P: 100VAC, O/P: 100% Load, Ta: 35°C)
Expected Cap Life Time	10 years (115 VAC & 230 VAC, 50% load @ 40°C)

Output Ratings/Characteristics*	
Nominal Output Voltage	12 VDC
Factory Set Point Tolerance	12 VDC ± 2%
Output Voltage Adjustment Range	11-14 VDC
Output Current	2.92 A (35 W max.)
Output Power	35 W
Line Regulation	< 0.5% typ. (@ 90-264 VAC input, 100% load)
Load Regulation	< 1% typ. (@ 90-264 VAC input, 0-100% load)
PARD** (20MHz)	< 100 mVpp @ 0°C to 50°C < 150 mVpp @ -10°C to 0°C
Rise Time	< 30 ms @ nominal input (100% load)
Start-up Time	< 2500 ms @ nominal input (100% load)
Hold-up Time	> 16.7 ms @ 115 VAC (100% load)
Dynamic Response (Overshoot & Undershoot O/P Voltage)	± 5% @ 0-100% load (Slew Rate: 0.1 A/μS, 50% duty cycle @ 5Hz)
Start-up with Capacitive Loads	8,000 μF Max

*For power de-rating from 50°C to 70°C, see power de-rating on DeltaPSU .
**PARD is measured with an AC coupling mode, 5cm wires, and in parallel with 0.1μF ceramic capacitor & 47μF electrolytic capacitor.

Environment		
Surrounding Air Temperature	Operating	-10°C to +70°C
	Storage	-25°C to +85°C
Power De-rating		> 50°C de-rate power by 2.5%/°C
Operating Humidity		5 to 95% RH (Non-Condensing)
Operating Altitude		0 to 5,000 Meters (16,400 ft.)
Shock Test	Non-Operating	IEC 60068-2-27, Half Sine Wave: 50G for a duration of 11ms, 3 shocks for each 3 directions
Vibration	Non-Operating	IEC 60068-2-6, Random: 5Hz to 500Hz (2.09 Grms); 20 min per axis for all X, Y, Z direction
Over Voltage Category		II
Pollution Degree		2

Safety Standards/Directives		
Safety Entry Low Voltage		SELV
Electrical Safety	TUV Bauart UL/cUL recognized CB scheme BIS CCC	EN 60950-1, EN 62368-1 UL 60950-1 and CSA C22.2 No. 60950-1 (File No. E131881) UL 62368-1 and CSA C22.2 No. 62368-1 (File No. E131881) IEC 60950-1, IEC 62368-1 IS 13252 (Part 1) (for PMT-12V35W1AA) GB 4943.1 (for PMT-12V35W1AA)
CE		In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU
UKCA		In conformance with Electromagnetic Compatibility Regulations 2016 and Electrical Equipment (Safety) Regulations 2016
Galvanic Isolation	Input to Output	3.0 KVAC
	Input to Ground	1.5 KVAC
	Output to Ground	0.5 KVAC

Date source: DeltaPSU (July 2024, Rev. 12)

Switching Power Supply-LRS-350-24

Features:

- AC input range selectable by switch
- With stank 300 VAC surge input for 5 sec
- Protections: Short circuit/Overload/ Over voltage/Over temperature
- Forced air cooling by built-in DC fan
- Built-in cooling Fan ON-OFF control
- 1 U low profile
- Withstand 5 G vibration test
- LED indicator for power on
- No load power consumption < 0.75 W
- 100% full load burn-in test
- High operating temperature up to 70°C
- Operating altitude up to 5,000 meters (Note. 8)
- High efficiency, long life and high reliability

Applications:

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

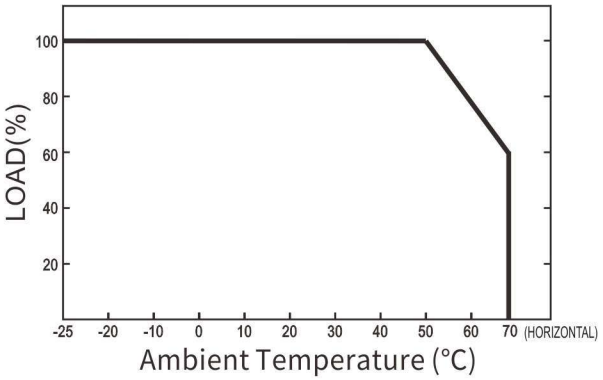
(Note 11) EN61558-1 EN61558-2-16 Note 10 TP TC004 IEC62368-1 IEC61558-1 IEC61558-2-16 UL62368-1 (Note.9)

ECO Automate Industrial Security Network Telecom

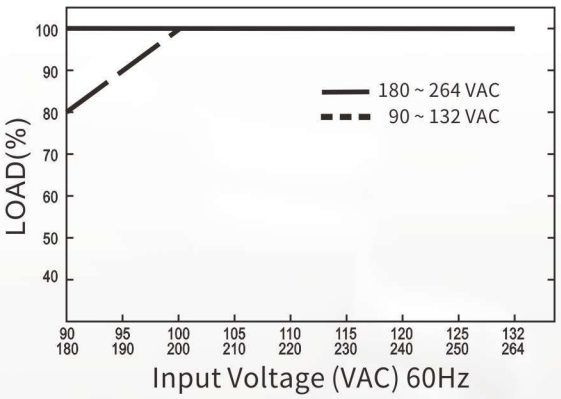
Specification

Model		LRS-350-24
Dimensions/Unit Weight		L 215 × W 115 × H 30 mm/0.76 kg
OUTPUT	DC Voltage	24 V
	Rated Current	14.6 A
	Current Range	0 ~ 14.6 A
	Rated Power	350.4 W
	Ripple & Noise (max.) Note 2	150 mVpp
	Voltage Adj. Range	21.6 ~ 28.8 V
	Voltage Tolerance Note 3	± 1.0%
	Line Regulation Note 4	± 0.5%
	Load Regulation Note 5	± 0.5%
	Setup, Rise Time	1300 ms, 50 ms/230 VAC 1300 ms,50 ms/115 VAC at full load
	Hold Up Time (Typ.)	16 ms/230 VAC 12 ms/115 VAC at full load
INPUT	Voltage Range	90 ~ 132 VAC/180 ~ 264 VAC by switch 240 ~ 370 VDC (Switch on 230 VAC)
	Frequency Range	47 ~ 63 Hz
	Efficiency (Typ.)	88%
	AC Current (Typ.)	6.8 A/115 VAC 3.4 A/230 VAC
	Inrush Current (Typ.)	Cold start: 60 A/115 VAC 60 A/230 VAC
	Leakage Current	< 2 mA/240 VAC
PROTECTION	Over Load	110 ~ 140% rated output power 3.3 ~ 36 V Hiccup mode, recovers automatically after fault condition is removed. 48 V Shut down and latch off o/p voltage, re-power on to recover.
	Over Voltage	28.8 ~ 33.6 V 3.3 ~ 36 V Hiccup mode, recovers automatically after fault condition is removed. 48 V Shut down and latch off o/p voltage, re-power on to recover.
	Over Temperature	3.3 ~ 36 V Hiccup mode, recovers automatically after fault condition is removed. 48 V Shut down and latch off o/p voltage, re-power on to recover.
FUN.	Fan ON/OFF Control (Typ.)	RTH3 ≥ 50°C FAN ON, ≤ 40°C FAN OFF
ENVIRONMENT	Working Temp.	-25 ~ +70°C (Refer to "Derating Curve")
	Working Humidity	20 ~ 90% RH non-condensing
	Storage Temp., Humidity	-40 ~ +85°C, 10 ~ 95% RH
	Temp. Coefficient	± 0.03%/°C (0 ~ 50°C)
	Vibration	10 ~ 500 Hz, 5 G 10 min./1 cycle, 60 min. each along X, Y, Z axes
	Over voltage category	III: According to EN61558, EN50178, EN60664-1, EN62477-1; altitude up to 2000 meters
SAFETY	Safety Standards	IEC/UL 62368-1,BSMI CNS15598-1,EAC TP TC 004,KC62368-1(for LRS-350-12/24 only),GB 4943.1, BIS IS13252(Part1): 2010/IEC 60950-1: 2005(NOTE 11),BS EN/EN61558-1, BS EN61558-2-16 Designed by AS/NZS 61558.1/2.16, AS/NZS 62368.1,BS EN/EN62368-1,
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C/ 70% RH
	Emc Emission	Compliance to BSMI CNS15936, EAC TP TC 020,KS C 9832,KS C 9835(for LRS-350-12/24 only)
	Emc Immunity	Compliance to BS EN/EN55035, EAC TP TC 020,KS C 9832,KS C 9835(for LRS-350-12/24 only)

Derating Curve



Static Characteristics



note 1 All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C of ambient temperature.

note 2 Ripple & noise are measured at 20 MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uf & 47 uf parallel capacitor.

note 3 Tolerance: includes set up tolerance, line regulation and load regulation.

note 4 Line regulation is measured from low line to high line at rated load.

note 5 Load regulation is measured from 0% to 100% rated load.

note 6 Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.

note 7 The 150% peak load capability is built in for up to 1 second for 12~48V.LRS-350 will enter hiccup mode if the peak load is delivered for over 1 second and will recover once it resumes to the rated current level(115VAC/230VAC)

note 8 The ambient temperature derating of 5°C/1000 m is needed for operating altitude greater than 2,000 m (6,500 ft).

note 9 This power supply does not meet the harmonic current requirements outlined by BS EN/EN61000-3-2. Please do not use this power supply under the following conditions:
a) the end-devices is used within the European Union, and
b) the end-devices is connected to public mains supply with 220VAC or greater rated nominal voltage, and
c) the power supply is:
- installed in end-devices with average or continuous input power greater than 75W, or
- belong to part of a lighting system
Exception:
Power supplies used within the following end-devices do not need to fulfill BS EN/EN61000-3-2
a) professional equipment with a total rated input power greater than 1000W;
b) symmetrically controlled heating elements with a rated power less than or equal to 200W

note 10 RCM is on voluntary basis and meets relevant IEC or AS/NZS standards complying with AS/NZS 4417.1.

note 11 Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

※ Product Liability Disclaimer: For detailed information, please refer to http://www.meanwell.com.cn/serviceDisclaimer.aspx

Switching Power Supply-LRS-100-48/LRS-75-12

Features:

- Universal AC Input/Full range
- With stank 300 VAC surge input for 5 second
- Protections: Short circuit/Overload/Over voltage
- Cooling by free air convection
- Miniature size and 1 U low profile
- Compliance to IEC/BS EN/EN 60335-1(PD3) and IEC/BS EN/EN61558-1, 2-16 for household appliances
- Operating altitude up to 5,000 meters (Note. 7)
- Withstand 5 G vibration test
- LED indicator for power on
- No load power consumption < 0.3 W
- Over voltage category III
- 100% full load burn-in test
- High operating temperature up to 70°C

Applications:

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Household appliances

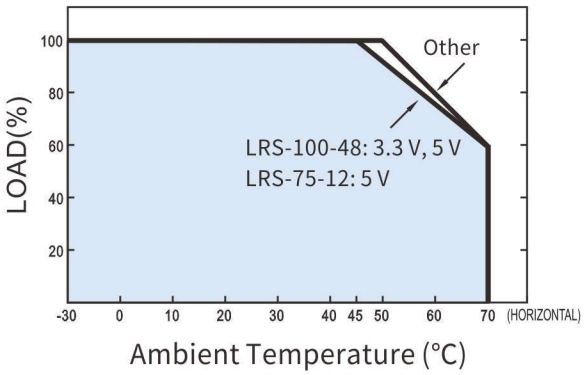
ECO Automate Industrial Security Network Telecom

Specification

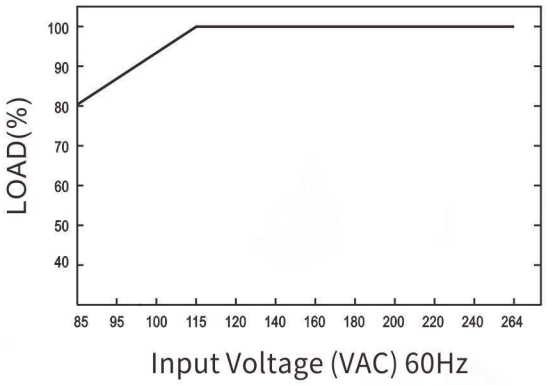
AS/NZS62368-1 GB 4943.1 UL62368-1 TP TC004 IEC62368-1

Model		LRS-100-48	LRS-75-12
Dimensions		L 129 × W 97 × H 30 mm	L 99 × W 97 × H 30 mm
Unit Weight		0.34 kg	0.25 kg
OUTPUT	DC Voltage	48 V	12 V
	Rated Current	2.3 A	6 A
	Current Range	0 ~ 2.3 A	0 ~ 6 A
	Rated Power	110.4 W	72 W
	Ripple & Noise (max.) Note 2	200 mVp-p	120 mVp-p
	Voltage Adj. Range	43.2 ~ 52.8 V	10.2 ~ 13.8 V
	Voltage Tolerance Note 3	± 1.0%	
	Line Regulation Note 4	± 0.5%	
	Load Regulation Note. 5	± 0.5%	
	Setup, Rise Time	500 ms, 30 ms/230 VAC 500 ms, 30 ms/115 VAC at full load	
	Hold Up Time (Typ.)	55 ms/230 VAC 10 ms/115 VAC at full load	60 ms/230 VAC 12 ms/115 VAC at full load
INPUT	Voltage Range	85 ~ 264 VAC 120 ~ 373 VDC (Withstand 300 VAC surge for 5 sec. Without damage)	
	Frequency Range	47 ~ 63 Hz	
	Efficiency (Typ.)	91%	89%
	AC Current (Typ.)	1.9 A/115 VAC 1.2 A/230 VAC	1.4 A/115 VAC 0.85 A/230 VAC
	Inrush Current (Typ.)	Cold start: 50 A/230 VAC	Cold start: 65 A/230 VAC
	Leakage Current	< 0.75 mA/240 VAC	
PROTECTION	Over Load	110 ~ 150% rated output power Protection type: Hiccup mode, recovers automatically after fault condition is removed	
	Over Voltage	55.2 ~ 64.8 V	13.8 ~ 16.2 V
		Protection type: Shut down o/p voltage, re-power on to recover	
ENVIRONMENT	Working Temp.	-30 ~ +70°C (Refer to "Derating Curve")	
	Working Humidity	20 ~ 90% RH, non-condensing	
	Storage Temp., Humidity	-40 ~ +85°C, 10 ~ 95% RH, non-condensing	
	Temp. Coefficient	± 0.03%/°C (0 ~ 50°C)	
	Vibration	10 ~ 500 Hz, 5 G 10 min./1 cycle, 60 min. each along X, Y, Z axes	
	Over Voltage Category	III; Compliance to BS EN/EN61558, BS EN/EN50178, BS EN/EN60664-1, BS EN/EN62477-1; altitude up to 2,000 meters	
SAFETY & EMC (Note 8)	Safety Standards	UL 62368-1, TUV BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1/-2-16,GB 4943.1, BSMI CNS15598-1, EAC TP TC 004,S/NZS62368.1(by CB),KC K60950-1(for LRS-100-12/24 only), BIS IS13252(Part1): 2010/IEC 60950-1: 2005(NOTE 9) approved	UL62368-1, TUV BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1/-2-16,GB 4943.1, BSMI CNS15598-1, EAC TP TC 004,AS/NZS 62368.1(by CB),KC62368-1, BIS IS13252(Part1): 2010/IEC 60950-1: 2005(NOTE 9) approved
	Withstand Voltage	I/P-O/P: 4 K VAC I/P-FG: 2 K VAC O/P-FG: 1.25 K VAC	
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100 M Ohms/500 VDC/25°C/70% RH	
	Emc Emission	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN55014, BS EN/EN61000-3-2,-3, GB17625.1,GB/T 9254.1, BSMI CNS15936, EAC TP TC 020,KC KN32,KN35(for LRS-100-12/24 only)	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN55014, BS EN/EN61000-3-2,-3, GB17625.1,GB/T 9254.1, BSMI CNS15936, EAC TP TC 020,KC KSC 9832, KSC 9835
	Emc Immunity	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61000-6-2 (BS EN/EN50082-2),BS EN/EN55035, heavy industry level, EAC TP TC 020,KC KN32,KN35(for LRS-100-12/24 only)	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61000-6-2 (BS EN/EN50082-2), BS EN/EN55035, heavy industry level,EAC TP TC 020,KC KSC 9832, KSC 9835

Derating Curve



Static Characteristics



note 1 All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
note 2 Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
note 3 Tolerance: includes set up tolerance, line regulation and load regulation.
note 4 Line regulation is measured from low line to high line at rated load.
note 5 Load regulation is measured from 0% to 100% rated load.
note 6 Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.
note 7 The ambient temperature derating of 5°C/1000 m is needed for operating altitude greater than 2,000 m (6,500 ft).
note 8 The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."
note 9 Some model may not have the BIS logo, please contact your sales for more information.
※ Product Liability Disclaimer: For detailed information, please refer to www.meanwell.com/serviceDisclaimer.aspx

Date source: MEAN WELL-LRS-100-SPEC 2024-02-04/LRS-75-SPEC 2024-02-04

TC500 Multi-Cavity Hot Runner Temperature Controller

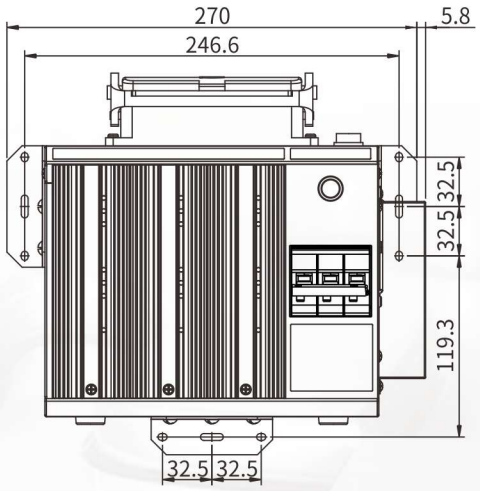
Features

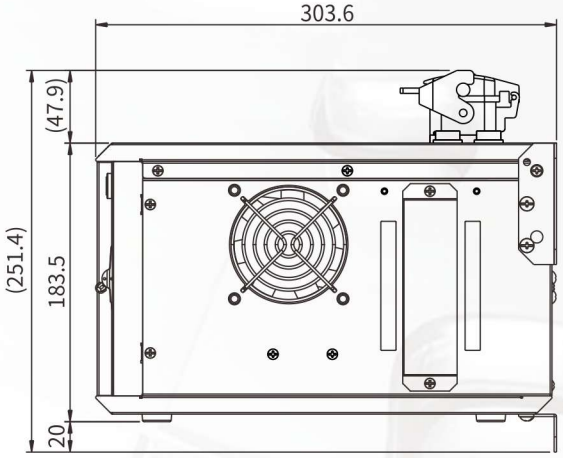
1. Wiring Friendly design
2. Easy swapping for individual module failures
3. Compact size, light weight, installed directly on the injection molding machine
4. Automatic ID recognition
5. Fast alternative for 230 V/380 V power input

Function

1. Built-in NFB switch
2. Auto/Manual function
3. PID auto temperature control
4. Current, output percentage display function
5. Setting for output percentage limit
6. Heat sink temperature detection
7. Detection fuse breakage
8. RS-485 communication function:
   ASCII and RTU mode
9. Temperature range:
   Thermocouple K type: 0 ~ 600°C (32 ~ 999°F)
   J type: 0 ~ 600°C (32 ~ 999°F)
10. Thermocouple break and inverse detect
11. Detection for heater open and short circuits
12. Automatic shutdown for heater abnormality
13. Automatic switch to manual mode if thermocouple breaks
14. Selectable two thermocouple types (J/K)
15. Selectable two temperature scales (°C/°F)
16. Selectable six alarm modes
17. Selectable two output trigger modes (Phase angle/Zero cross)

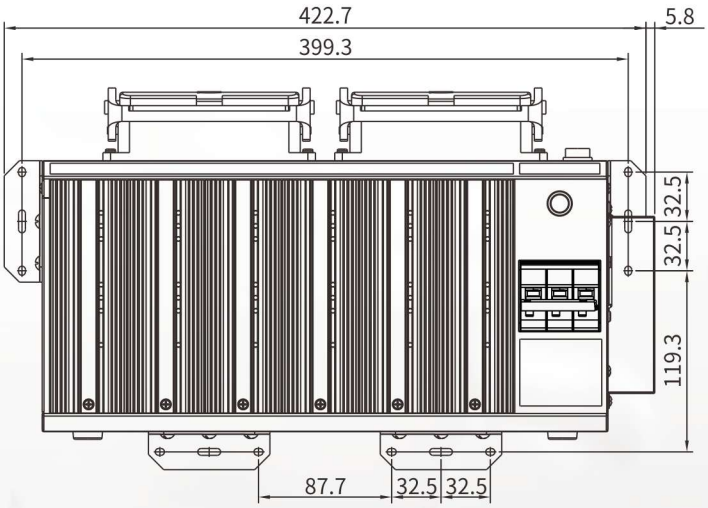
6 Zones (3 Modules)

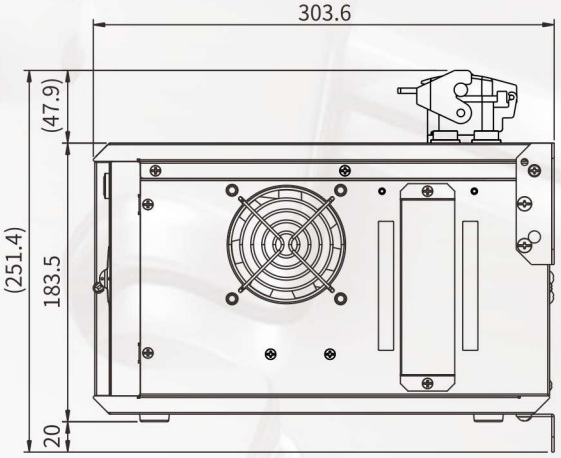




Bracket (Fixed by screw M4)

12 Zones (6 Modules)





Bracket (Fixed by screw M4)

Unit: mm

Products Overview

GEFRAN Agent & other products

Pressure Transducers					
	K3 Series	KE Series	KN Series		
					
	M3 Series	ME Series	MN Series		
					
	M5 Series	M6 Series	KS/TK		
Displacement Transducers					
	LT/LT67/LTC	PC	PK	PA1	PY1/PY2/PY3
					
	PZ12/PZ34	PC67/PZ67A/PZ67S	PMA12/PME12/PMI12	PMI-SL/PMI-SLE	
					
	IC	PR65	PS	PCIR	
					
	WPG-A	WPP/WPA Series	WRP/WRA/WRG Series		
Controller/Alarm unit/ Programmer/Indicator										
	4T48	4T96	40TB	40B96	400-401	450	600	650	2400	2500
Power Controller/ Solid State Relay										
	GRM-H	GRP	GRP-H	GRS	GRS-H	GRZ	GRZ-H	GQ		
Ceramic Band Heater										
	Ceramic Band Heater	Insulation Plus Ceramic Band Heater	Air Cooled Ceramic Band Heater							

Products Overview

Temperature Controllers V Series					
	V100	V200	V300	V400	V500
Temperature Controllers C Series					
	C100	C200	C300	C400	C500
Temperature Controllers A Series							
	A1AN	A1DN	A2DA	A2DD	A3AN	A3AA	A3AD
							
	A3DA	A3DD	A4AA	A4AD	A4AN	A4DA	A4DD
Temperature Controllers TC Series					
	H2DA	TC2DA	TC3AA	TC3AO	TC3DA
					
	TC3DO	TC4AA	TC4AO	TC4DA	TC4DO
Hot Runner Temperature Controllers						
	TC5200	TC5100	TC500	TC5T	TC5H	TC5E
					Valve Gate Controller	
			TC50			TC5V
Plastic Machine Controllers						
	AR800/AR810/AR1280/AR2000/AR2010/AR2100			AR/FT Series - HMI		
Solid State Relay					
	ARD24 Series	ARD48 Series	SY Series	SV Series	SW Series
Heatsoft			Signal Transmitter			
	SB Series			TR100/TR200		

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