



APC 504

Universal Controller

Arel APC 504 with 8.4" color TFT screen, unique packaging and windows based application generator is ideal controller for batch dyeing and process control applications in harsh industrial environment





APC 504 is part of Arel family of PC based industrial controllers; It has large static memory, 8.4" high resolution TFT color display screen and 35 keys keyboard including 7 soft keys.

The controller is panel mounted with IP 65 sealed front and designed for harsh operating environment

APC 504 - preferred controller for supervisory control and data acquisition systems

APC 504 - whenever low cost, high functionality and simple configuration are required, replacing PLC based controllers and separate visualization units

APC for Batch Dyeing

Unique Characteristics

Unlimited number of parallel functions

Unlimited number of dye programs, any length

Graphic editing of dye programs.

Synchronization of parallel functions for shorter dye cycles

Full multi tasking operation of parallel function

Formula by rules -any parameter of the dye program can be calculated automatically to fit to the batch, to the recipe and to the machine characteristics

Dynamic optimization of functions like memorized filling, smart rinsing, dosing, salts additions etc.

Past-Present-Future display of the dyeing process

Unique historical reports. Zooming from total plant data into each individual event according to desired classification

Next batch preparation while current batch is still running, for maximum plant efficiency

Manual activation of predefined functions

Intuitive very simple operation

Multi language support

Web and E. mail interfacing, for data transfer and for remote analysis and support



Machine : Dye Mond 21				19 April 10:27			
Lot	03330015	Prog	278	Reactive 3	Start	8:20	65°C
Weight	292	Step	29	Hot Rinse	End	12:45	
STP	Machine	Tanks	Charge Tank				
29	Hot Rinse (21 min.)						
	Fill Water 1 with 1000L	Prepare Tank 2	Trans. Tnk 1 to Ch.tnk				
	Temp. 60 °C	Mix Tank 2	Heat Tank 2				
	Transfer Tank 1						
	Hold for 1 min.						
	Rinse between L1 and L2						
	Rinse 40 °C 3 min.						
30	Treatment X.D.X (12min.)						
	Transfer Charge Tank						
	Fill Water 2 to Memorize Level						
	Transfer Tank 2						
VENT							
Lot	More 1 fo	Graphics	Programs	Re			

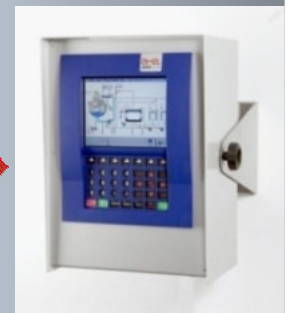
One Stage System Set Up

The adaptation of the controllers to the machine configuration is done in a PC by menu driven simple dialogue. Once the configuration is finished, it is transmitted to the controllers.

The inputs/outputs are allocated automatically and the PC, which sent the configuration may work immediately as a central system.

No need to carry out for a new machine, or for machine modification, changes in the I/O module and not in the controllers and in the central system

Function	SubFunctions	
Servicing	Dosing from Side tank 2	No
Water & Options	Profile 5 Tanks with water	No
Filling	Profile 5 Tanks from Machine	No
Circulation	Profile 5 Tanks with water	No
Heat exchanger Configuration	Profile 5 Tanks from Machine	No
Draining Possibilities	Chemicals Tank #1	Yes
	Heat Tank 1	Yes
Draining Possibilities	Heat Tank 1	Yes
Operational Signals	Chemicals Tank #1 Drain Valve	Yes
Charge Tank	Recirculation Tank 1	Yes
R.C. Questions - Dye Programs	Dosing from Tank 1	Yes
R.C. Parameters - Lots	Heat Tank 1	No
	Heat Tank 2	No
	Heat Tank 2	No

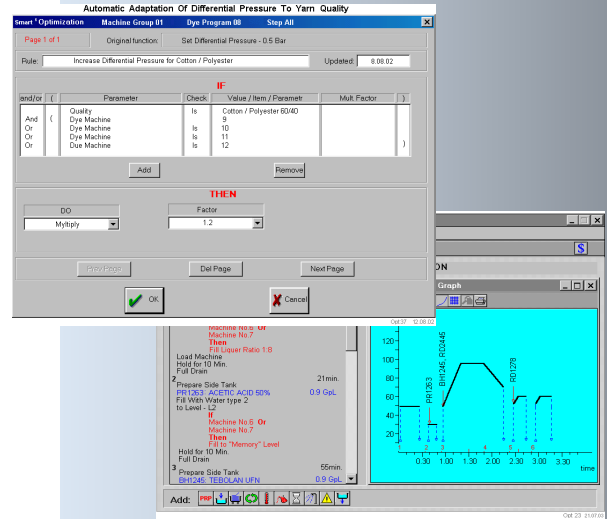


APC 504

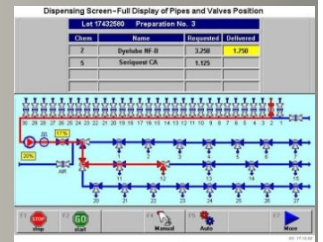
Smart By Rules Optimization

Very few dye programs are needed for the various machines groups, dyeing methods, shades and batches parameters.

Arel unique dye program/recipe management simplify drastically the operation of the dye house. The chemicals preparation function in the dye programs contains also the specific chemicals. Upon selecting a batch and a dye program/recipe to a specific dyeing machine, a predefined set of rules fits automatically the dye procedures functions and the dyestuffs /chemicals, to the batch characteristics and to each dye machine configuration.



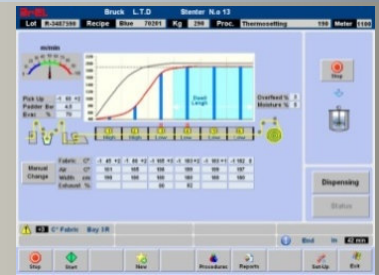
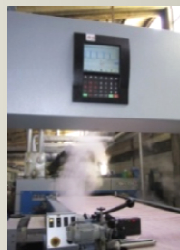
Dispensing/ Dissolving



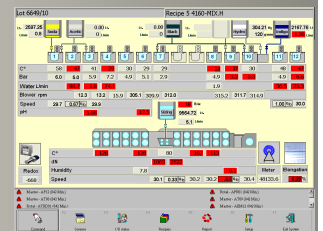
APC for Universal Control

The APC controller is easily configured to any application including monitoring and control of finishing ranges and dispensing /dissolving systems. The configuration is carried out by Arad – Arel Rapid Application Development tool. Arad is powerful soft PLC script that manipulate Microsoft Visual Basic functions and objects like Inputs outputs, set- points, parameters, etc for simple application generation.

Stenter Frames



Continuous Ranges



Control Center

For central management and control the APC controllers, as all other Arel controllers, are connected into Arel central dye house management system which include all the software module needed for effective plant integration :

Production Management Modules

- Orders and batches
- Scheduling
- Central control
- Machines maintenance

Process Management Modules

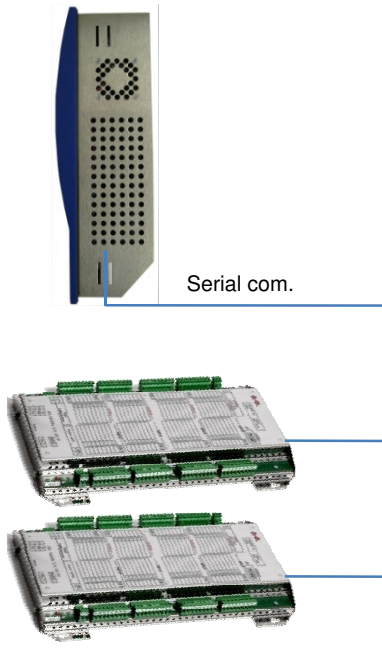
- Recipes
- Dye programs
- Guided weighing and stocks
- Process parameters



Input output

APC I/O boards are serially connected to the controller and can be located close or at a distance from the controller. The boards are packed in s.s. steel housing with clear legend for ease of wiring and maintenance.

There is no practical limitation on the number of I/O boards that can be connected to the controller.

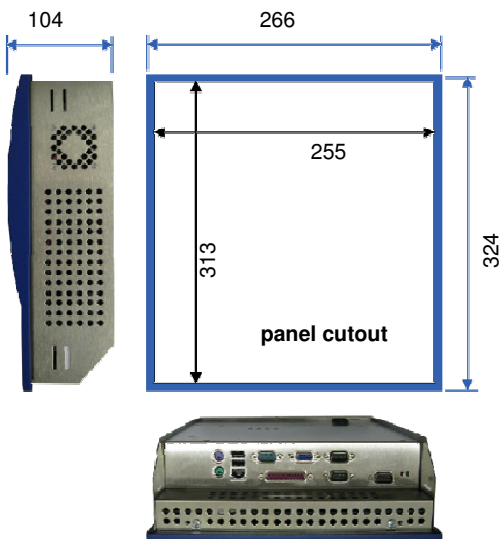


Range of I/O boards to fit economically any machine

Configuration	Analog			Digital	
	Inputs		Outputs	Inputs	Outputs
	0-20 mA or 4-20 mA	PT100	4-20 mA Or 0-10V	Opto-Isolated	Relay 1A 24V
24/40				24	40
32/32				32	32
8/6/8	8	6	*8		
4/4/16/24	2	2	4	16	24

*4-20 mA only

Technical specifications



Interface

Ethernet
 USB (2 ports)
 RS 232 (3 ports)
 RS 485 (opto isolated)
 All others standard PC peripherals

Display

8.4" Color TFT VGA
 Resolution 640x480

Weight

4.35 Kg

Power

220/110 V,
 50/60 Hz
 80 Watt

Environmental requirements

Front IP 65
 Ambient Temperature 55 °C
 Humidity 90% no condensation

AREL Solutions for the textile industry

controllers

T605 Pc based 15" touch screen controller
APC pc based 8.4" screen with keyboard
S80 Pc based 6.4" screen with keyboard
Series 300 microprocessors based controllers

systems

Integrated batch dye house
 Continuous ranges
 Chemicals and salts dispensing
 Dissolving systems
 Plant ERP systems, logistics

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