



Full Automatic Production Line for baking BARBARI has been made for the first time in Iran and Middle East without handwork that is the glories of Iranian Bread Industry and specially Mashhad Baking Industries Co. All of designing, making of executive planes, three dimensional modeling and designs approval have been performed and completed by expert engineers of Mashhad Baking Industries Co. during four years and finally reach mass production. The production capacity of bread is 20 ton/day.

In this system, all operations related to processing dough and baking performed and controlled by a full automatic system (PLC).

The system designed and made by R&D unit of Mashhad Baking Industries Co. in 1999 and received confirmation of Iranian Research Organization for Science & Technology (IROST) in 2002. Also, Full Automatic Production Line has been registered as an invention on Iranian State Organization for Registration of Deeds & Properties in 2005.

- Specification

The system has three touch panels with three different languages and the operator would be able to control the line from different three points by these panels. Also, the production line is controllable & monitoring by central operator system.

- Central Management System

All production processes is observable and controllable in management system and so management would be able to observe, reporting of production line information such as temperature, humidity of different places, conveyors' speed, input amount of dough to line, amount of passing dough from conveyor different sections, input amount of dough to proofer, final fermentation, oven and output numbers of bread from oven. Also, the possibility alarms to be caused on production line are observable on central management system. For comparison and conclusion about better operation of production line, the temperature and moisture of different places is observable and comparing (compare with results of the past days) by curves & tables.

- Operator Control System

For high accuracy of controlling the production line, operator would be able to control & observe of information by three touch panels (Panel Master PL 121-TST – Taiwan) with below specification.

- Mobile Operator Control System

The operator is able to manage the production line of different places by wireless tablet.

·All of production line information on PLC's memory saved and observable by the curves & tables. It is possible to save information by flash memory that reviewing and editing are possible on computer (EXCEL program). Also, all of production line information on different plates of panel is printable.

Size	12.1 inch	Back light Life Time Brightness (cd/m2)	50,000 Hours	Battery Backup Memory	128 KB	CE	En55022
Resolution	800*600 px		400	Input Power	DC20V~DC28V	Front Panel	Meets NEMA4/IP65
Type	TFT Color Touch Panel	Operation	Touch Panel, analog resistance,hardness/4H	Power Consumption	18 W	Outlet (W*H*D;mm)	315.0*241.0*54.5
Colors	64K Color	CPU	RISC 32 bit CPU/2D IGP Accelerator	Operating Temperature	0~50 C	Cutout (W*H;mm)	301.5*228.0
Back light	CCFL*2	Application Flash Memory	8 MB	Relative Humidity	10%~90% RH	Net Weight	

- Central Processing System

All of production operations controlled and processed by PLC (Fatek-60MC – Taiwan).The processor can be connected to modem for correcting & changing the program, control and remote monitoring and save all of system's information for a long time. All drives are controlled by this processor and HMI receives its instructions from processor.

Input Power	220V	Digital Input	36
Input Frequency	50 Hz	Digital Output	24

- Inverter

The motor speed of production line is controlled by inverters of invt model; also it is possible to control without sensor & V/F. The operation accuracy is 0.5% of maximum speed. The carrier frequency is adjustable between 0.5 KHz ~ 15 KHz and continues to working without any stopping when the electric current is OFF. The inverter has voltage automatic regulation function with 24 protection faults and inside brake unit. Also, the starting torque is 150% nominal torque.

Input Power	220V +15%	Output Frequency Rang	0~400 Hz
Input Frequency	47~63 Hz	Operating Temperature	-10~45 C
Power Factor	92.0	Relative Humidity	<95%
Power Consumption	1.5 KW		