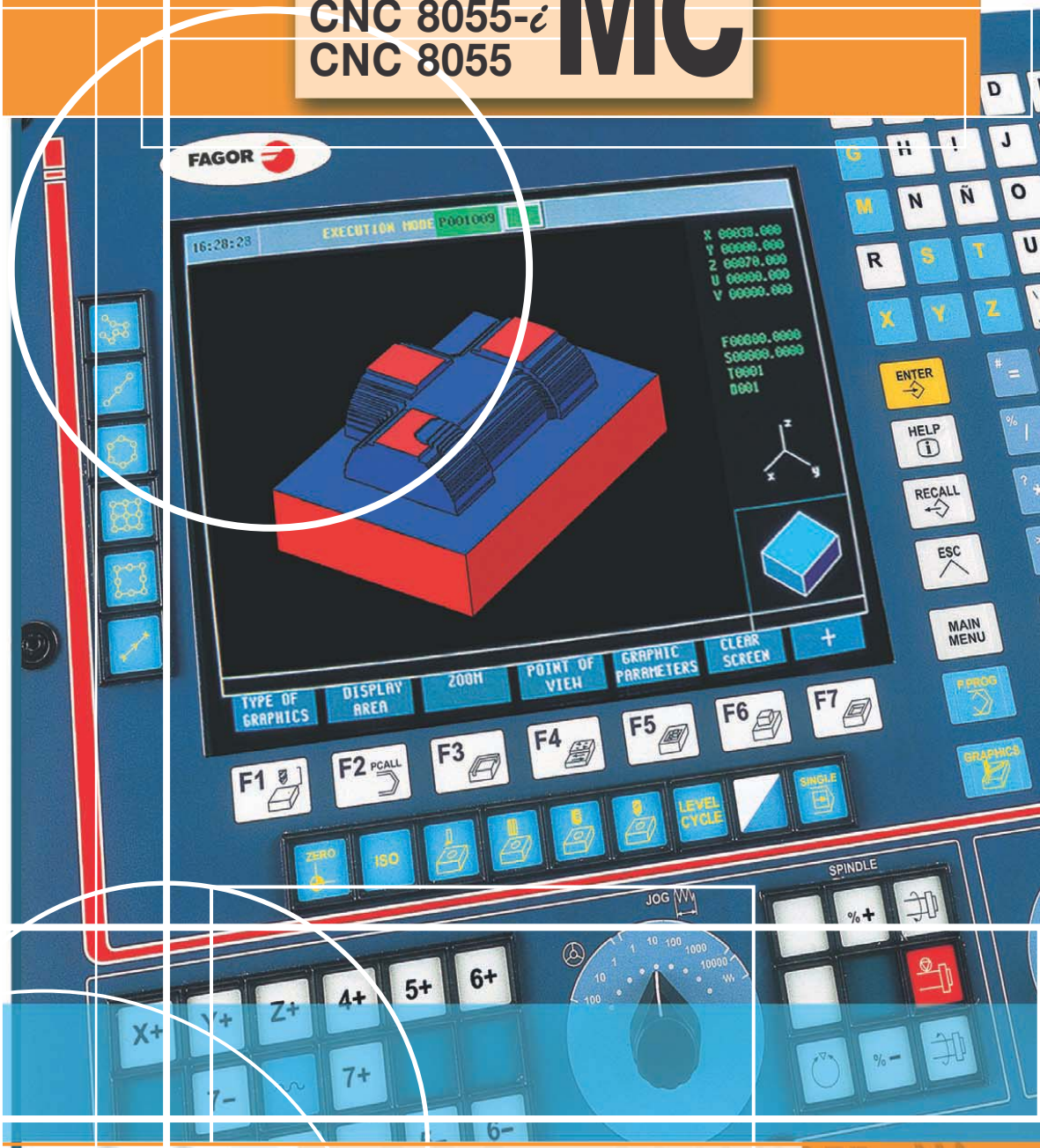
CNC 8040
CNC 8055-i
CNC 8055

MC

Conversational CNC's



- Milling
- Machining Centers

FAGOR

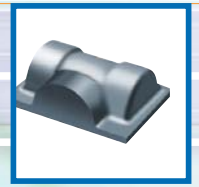
CNC 8040
CNC 8055-i
CNC 8055

MC

Introduction

Fagor user friendly conversational CNC's offer powerful and versatile programming features. Because of their outstanding capability, set-up time is minimized for both experienced and novice operators. The extensive use of graphics at the programming displays means that even complex machining tasks are easily dealt with, only the minimum of numerical data entry being required.

As standard, the CNC offers more than 10 working languages but all screens may be translated to the operator's own language.



Tool calibration

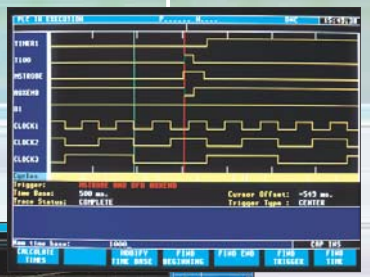
It is a very simple and intuitive operation that does not require concepts such as tables, tool offsets, etc.
Pressing the tool calibration key displays a help graphic.
Just set the dimensions of the master tool, select the tool to be calibrated and touch the part with it. The CNC picks up the actual tool dimensions and updates its internal tables for later machining operations.

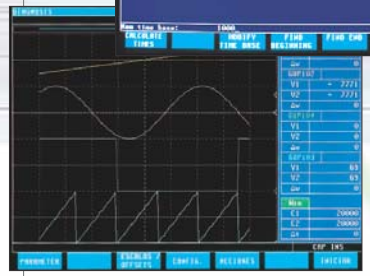
Startup assistance

PLC logic analyzer
It is a tool to assist you when adjusting the PLC program.
It captures data at the beginning of each PLC cycle and shows the status of the indicated resources.

Oscilloscope function
It is a tool to assist you when adjusting the axes.
Up to 4 variables may be shown simultaneously and manipulate CNC machine parameters and variables.

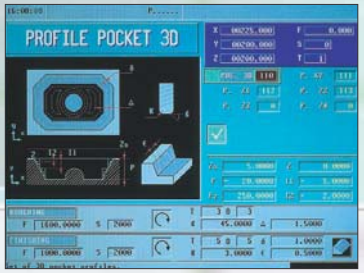
Circle geometry test
It helps improve the axis reversal peak.
It consists of machining a circle, graphically comparing the theoretical path with the actual path and manipulating machine parameters until the desired result is achieved.

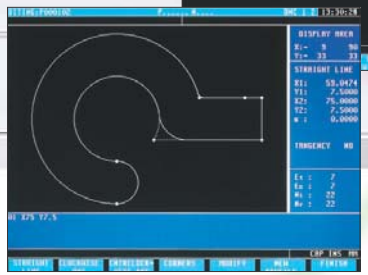




Intelligent Profile Editor

Blueprints do not always show the starting and ending points of each section. Sometimes it suffices to just indicate the inclination angle of a section and other times it is enough to indicate that it is tangent to the previous section.
With the Intelligent Profile Editor no calculations are required, just enter the known data into the CNC. When there is more than one solution, all possible solutions are shown graphically so the operator can select the right one.





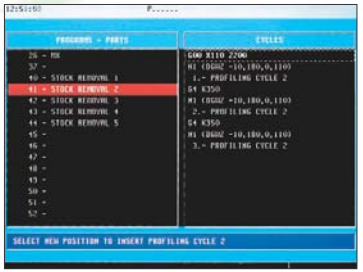
Jog mode

Extremely easy to operate.
The screen offers the operator all the necessary information (axis position and feedrate, spindle speed, selected tool, etc.).
It is possible to preset the coordinates of the axes, modify the machining conditions, select a new tool as well as start and stop the spindle, etc.
The axes may be moved in several ways:

- using the JOG keys.
- using handwheels
- sending them to specific positions (target coordinate + CYCLE START)

Parts saving

Part-programs may be made out of a combination of automatic operations and blocks edited in ISO code. The part-program directory shows the programs stored in memory (number and associated text) and the composition of the selected program (automatic operations and ISO block).
A part-program may be modified by adding or removing operations or by modifying a particular operation. It is possible to delete existing parts and create new ones from an existing one.
It is also possible to simulate a part-program or a particular operation before it is executed and take measurements on the graphic display to check that it will be executed properly.



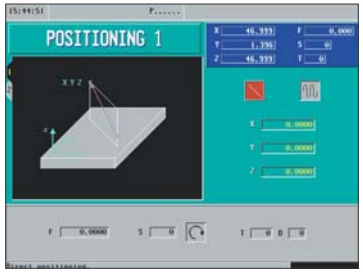
The automatic operations already implemented represent the main distinguishing feature of the conversational models. They have been designed to better adapt the usual workshop methods. They correspond to each operation of the part machining process.
The keys associated with the automatic operations have a descriptive icon and an LED that turns on when the operation is selected.

All the operations have:
- Interactive graphic assistance
- Geometry defining area
- Areas to set the machining conditions for the roughing and finishing stages.

Each operation has several editing levels or cycle types with their own screen. The left side of the screen shows tabs indicating the available levels and which one is selected.

Positioning

Its two levels permit setting how the axes will move either one by one or both at the same time



Surface milling

It offers 4 levels that may be selected with an icon:
- Unidirectional along X
- Unidirectional along Y
- Bidirectional along X
- Bidirectional along Y

Slot milling

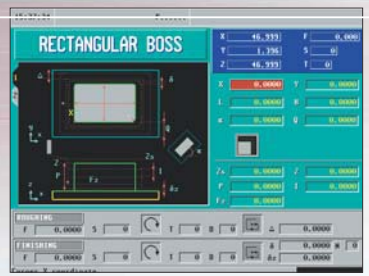
It offers 6 levels that may be selected with an icon:
- Upper left corner
- Upper right corner
- Lower left corner
- Lower right corner
- Across
- Longitudinal

Profile milling

It has two levels:
- Defined by points
- Defined by "Profile Program"

Rectangular Boss

The machining of the boss corners (rounded or not) may be selected with an icon



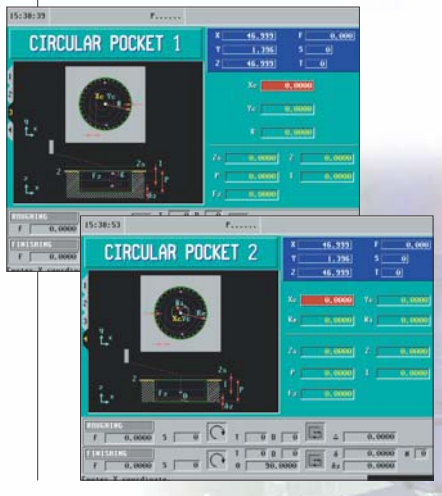
Circular Boss

Rectangular Pocket

It has two levels

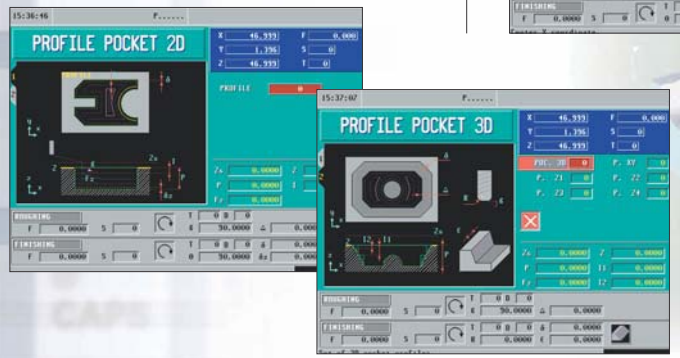
Circular Pocket

It has two levels



Pocket with profile

It has two levels:
- With a 2D profile
- With a 3D profile

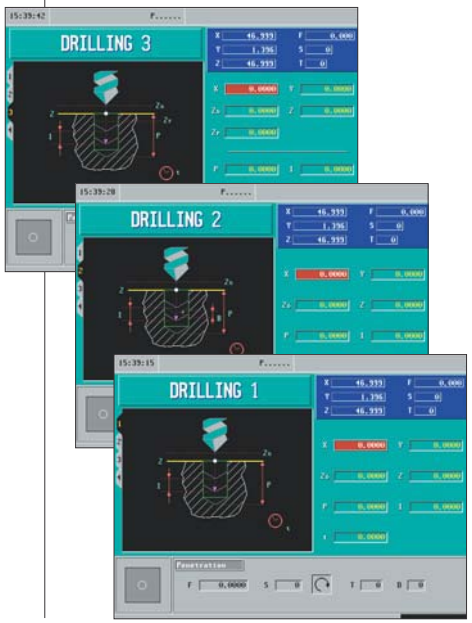


Machining on Z

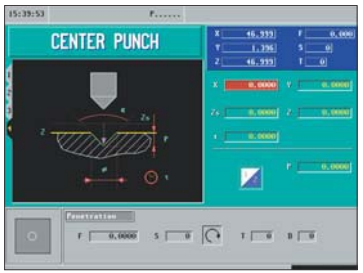
It permits easy definition of bolt-hole drilling, grid pattern tapping, etc.
The machining operations on Z indicate the type of machining to carry out. They must be associated with Multiple Positioning that indicates where the machining will take place.
The screen is divided into 2 areas, the main area showing what it is being programmed (machining or positioning).

Drilling

It offers three programming levels

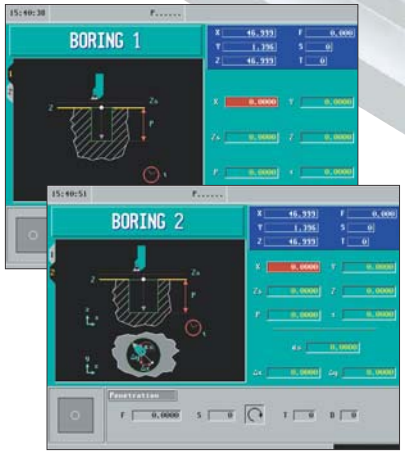


Center punching

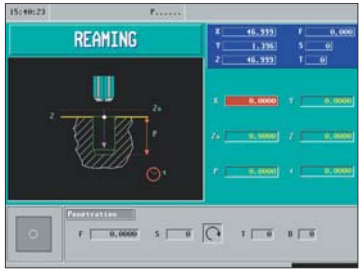


Boring

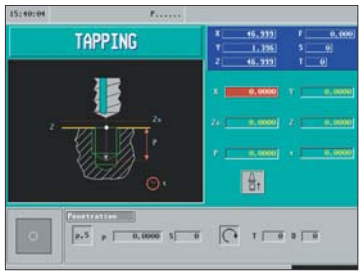
It offers two programming levels



Reaming



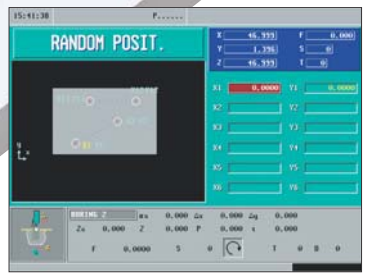
Tapping



Multiple positionings associated with Z axis machining

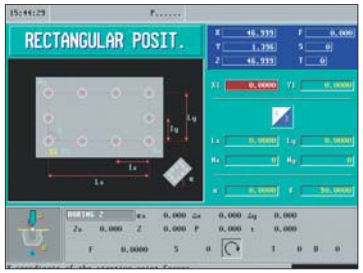
Point to point

Up to 12 points



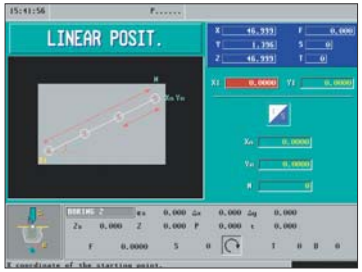
In rectangular pattern

It may be defined in three ways



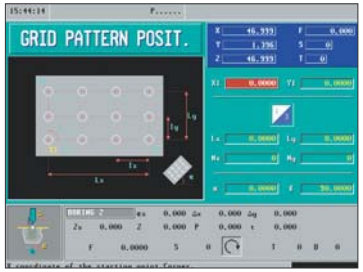
In line

It may be defined in five ways



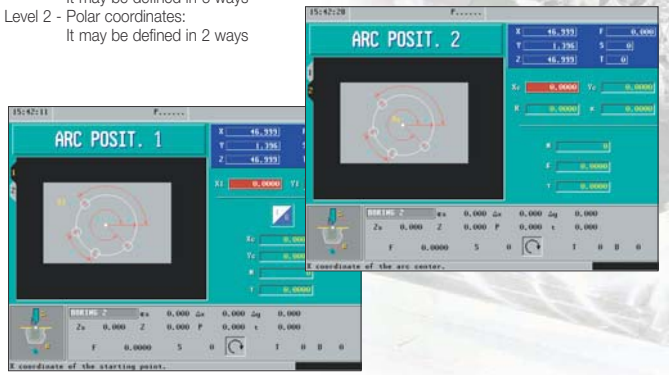
In a grid pattern

It may be defined in three ways



In arc

It offers two programming levels:
Level 1 - Cartesian coordinates:
It may be defined in 6 ways
Level 2 - Polar coordinates:
It may be defined in 2 ways



CNC 8040/8055-i/8055 MC Technical Characteristics

CONFIGURATION	8040	8055-i	8055
Axes and spindles			
Maximum axis configuration	4	4 ▲ 7 (with digital interface)	4 ▲ 7 (with digital interface)
Maximum spindle configuration	2		
Maximum axes + spindle configuration (analog + digital)	5	8	
Gantry axes	●	●	●
Axis coupling via PLC	●	●	●
Axis coupling by program	●	●	●
Memory			
User memory (RAM)	256 K ▲ 1 MB	1 MB	256 K ▲ 1 MB
Mem Key Card	512 K ▲ 2 MB ▲ 24 MB	4 MB ▲ 24 MB	512 K ▲ 2 MB ▲ 4 MB ▲ 24 MB
Integrated Hard Disk	–	–	▲
Integrated PLC			
PLC cycle time	3 ms / 1000 instruc.	3 ms / 1000 instruc. ▲ 1 ms / 1000 instruc.	3 ms / 1000 instruc. ▲ 1 ms / 1000 instruc.
Equation programming system	●	●	●
Logic analyzer	●	●	●
Communication			
RS 232 (up to 115,200 Bd)	●	●	●
RS 422	–	–	●
DNC (via RS 232)	▲	▲	▲
Ethernet	–	–	▲ (with Hard Disk)
Telediagnosis via modem	▲	▲	▲
Axis adjustment			
Look Ahead	75 blocks		
Jerk control	●	●	●
Feed forward / AC Forward	●	●	●
Oscilloscope function (setup assistance)	▲	▲	▲
Circle geometry test (setup assistance)	▲	▲	▲
System architecture			
Hardware configuration	Central unit integrated into the monitor		Modular Central Unit
Monitor	▲ 10.4" Color VGA TFT LCD ▲ 10.4" Monochrome STN LCD		▲ 10.4" Color VGA TFT LCD ▲ 9" Monochrome CRT
Feedback inputs	1 specific for spindle 2 specific for electronic handwheels ▲ 4 for axes, spindles or handwheels		8 feedback inputs for axes, spindles and handwheels
Analog outputs	1 specific for spindle ▲ 4 for axes or spindles		8 analog outputs for axes and spindles
Analog inputs (±5 V)	–	–	8
Probe inputs, 5 V (0.25mA) or 24V (0.30 mA)	2	2	1
Digital inputs and outputs (150 mA)	16 I / 8 O ▲ 56 I / 32 O	16 I / 8 O ▲ 56 I / 32 O	40 I / 24 O ▲ 232 I / 120 O
CAN for remote-module connection	▲	▲	–
CPU turbo	–	–	▲
SERCOS for digital drive connection	▲	▲	▲
Remote I/O modules (option)	▲	▲	–
Possible nodes (CANopen)	4	4	–
Possible inputs / outputs at each node (24V 500 mA)	▲ 72 I / 48 O	▲ 72 I / 48 O	–
System power supply			
Central Unit	24 Vdc	24 Vdc	Universal AC
Remote I/O modules	24 Vdc	24 Vdc	–
Feedback inputs			
For axes	▲ 4 inputs TTL/1Vpp	▲ 4 inputs TTL/1Vpp	4 inputs TTL/Sinusoidal
For spindle	1 TTL	1 TTL	4 inputs
For handwheels	2 TTL	2 TTL	TTL

● Standard
▲ Option

CNC 8040/8055-i/8055 MC Features

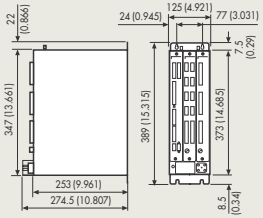
FEATURES	8040	8055-i	8055
Spindle related			
Spindle orientation M19	●	●	●
Interpolation			
Linear, Circular, Helical	●	●	●
Tangential control	▲	▲	▲
Retrace function	▲	▲	▲
RTCP function	–	▲	▲
Compensations			
Tool radius and length	●	●	●
Tool life monitoring	▲	▲	▲
Graphics			
Tool path	●	●	●
3 simultaneous views (with depth simulation)	●	●	●
Solid graphics	▲	▲	▲
Operation related			
Simulation with execution time estimate	●	●	●
N block look-ahead to avoid tool collision	●	●	●
Programming related functions			
Feedrate as an inverted function of time	●	●	●
Profile editor	●	●	●
Canned cycles			
Machining canned cycles	●	●	●
Probing canned cycles	▲	▲	▲
Digitizing	–	▲	▲
Tracing	–	▲	▲
Irregular pockets with islands	●	●	●
Rigid tapping	▲	▲	▲
Setup assistance			
Oscilloscope function for axes	▲	▲	▲
Circle geometry test	▲	▲	▲

● Standard
▲ Option

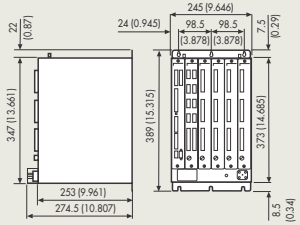
•Compact Configuration

Central Unit

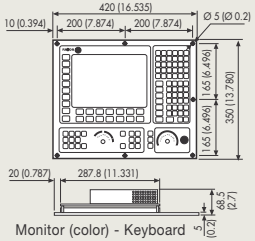
Monitor - Keyboard



3-width Central Unit



6-width Central Unit



Monitor (color) - Keyboard

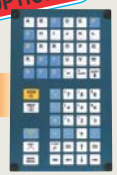
•Modular Configuration

Central Unit

Monitor

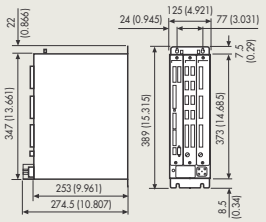
MC Operator Panel

OPTIONAL

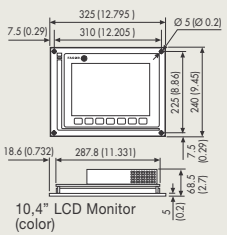


ISO panel(*)

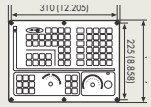
Keyboard switcher KS 50/55



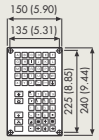
3-width Central Unit



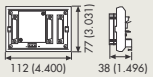
10,4" LCD Monitor (color)



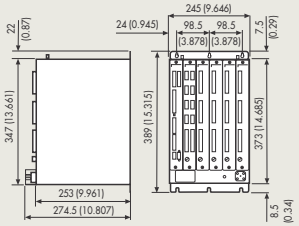
MC Operator Panel



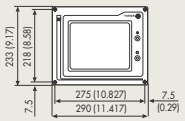
ISO panel(*)

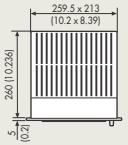


Keyboard switcher KS 50/55



6-width Central Unit



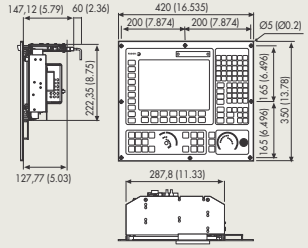


9" CRT Monitor (monochrome)

(*) Requires keyboard switcher KS 50/55

•Compact Configuration (K)

Central Unit - Monitor - Keyboard



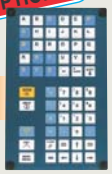
Central Unit - Monitor (color and monochrome) - Keyboard

•Modular Configuration

Central Unit - Monitor

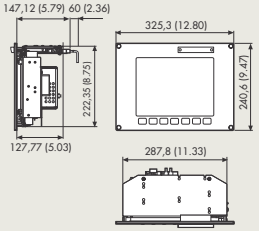
MC Operator Panel

OPTIONAL

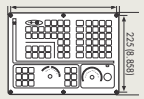


ISO panel(*)

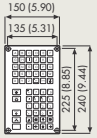
Keyboard switcher KS 50/55



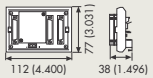
Central Unit - Monitor (color and monochrome)



MC Operator Panel



ISO panel(*)



Keyboard switcher KS 50/55

(*) Requires keyboard switcher KS 50/55

Fagor Automation, S.Coop. (Mondragón)
Bº San Andrés s/n, Apdo. 144
E-20500 Arrasate-Mondragón, Spain
Tel. 34-943 71 92 00 / 34-943 03 98 00
Fax 34-943 79 17 12
E-mail: info@fagorautomation.es

www.fagorautomation.com

Fagor Automation, S.Coop. (Usurbil)
Bº San Esteban s/n - Txoko Alde
E-20170 Usurbil, Spain
Tel. 34-943 00 06 90 - Fax 34-943 36 05 27
E-mail: usurbil@fagorautomation.es

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ER-0968/1999

ISO 9001

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Fagor Automation, Catalunya
Pg. Ferrocarrils Catalans, 117/119, 1ª Pl., Local 12
08940 Cornellà de Llobregat-Barcelona, Spain
Tel. 34-93 474 43 75 - Fax 34-93 474 43 27

Fagor Industriecommerz GmbH
Postfach 604 D-73006 Göppingen
Nördliche Ringstrasse, 100
D-73033 Göppingen, Germany
Tel. 49-716115685-0 - Fax 49-71611568579

Fagor Italia S.R.L.
Centro Direzionale Lombardo
Pal. CD3 P.T. - Vía Roma, 108
20060 Cassina de Pecchi (MI), Italy
Tel. 39-0295301290 - Fax 39-0295301298

Fagor Automation Ltda. (Sucursal Portuguesa)
Rua Gonçalvez Zarco nº 1129-B-2º-Salas 210/212
4450 Leça da Palmeira, Portugal
Tel. 351-22-9968865 - Fax 351-22-9960719

Fagor Automation UK Ltd.
2a Brunel Close, Drayton Fields Industrial Estate
Daventry, Northamptonshire
NN11 5RB, United Kingdom
Tel. 44-1327 300067 - Fax 44-1327 300880

Fagor Automation France Sàrl
Parc Technologique de La Pardieu
16 Rue Patrick Depailler
63000 Clermont Ferrand, France
Tel. 33-473277916 - Fax 33-473150289

Fagor Automation (Asia) Ltd.
Rm 1202, Sunbeam Centre
27 Shing Yip St. Kwun Tong
Kowloon, Hong Kong
Tel. 852-23891663 - Fax 852-23895086

Fagor Automation (Asia) Ltd., Twn Branch (H.K.)
Nº 26 Ta-Kuang Str., Taichung 408
Taiwan R.O.C.
Tel. 886 4 2327 1282 - Fax 886 4 2327 1283

Fagor Automation (S) Pte. Ltd.
240 MacPherson Road
03-01 Pines Industrial Building
Singapore 348574
Tel 656 8 8417 345/6 - Fax 656 8 8417 348

Beijing Fagor Automation Equipment Co.,Ltd. Office and Service Centre
Room No. B-202, Guo Men Building, No. 1
ZuoJiaZhuang, Chaoyang District
Beijing, Zip Code: 100028 China
Tel. 86-10-64641951 - Fax 86-10-64641954

Beijing Fagor Automation Equipment Ltd. Nanjing Office.
Holiday Inn (Nanjing)
45 North Zhong Shan Road Nanjing
210008, Jiangsu Provence, China
Tel. 86-25-332 82 59 - Fax: 86-25-332 82 60

Beijing Fagor Automation Equipment Co. Ltd. Guangzhou Rep. Office.
No 423, Plotio Plaza. No 18 Airport Road,
Baiyun district, Guangzhou 510405, China
Tel. 86-20-86 55 31 24 - Fax: 86-20-86 55 31 24

Beijing Fagor Automation Equipment Co. Ltd. Shanghai Representative Office.
Room No. 1906
LianTong International Building
No. 547 Tian Mu Road West
Shanghai, P.C. 200070
Tel. 86-21-63539007 - Fax 86-21-63538840

Fagor Automation Korea, Ltd.
702 Bomi Bldg., 661 Deungchon-Dong
Kangseo-Ku, Seoul 157-033, Korea
Tel. 82-2-36652923 - Fax 82-2-36652925

Fagor Automation do Brasil Com.Imp.Exp.Ltda.
Rúa Homero Vaz do Amaral, 331
CEP 04774 - 030
São Paulo - SP, Brazil
Tel. 55-11-56940822 - Fax 55-11-56816271

Fagor Automation Corp.
2250 Estes Avenue
Elk Grove Village, Illinois 60007, USA
Tel. 1-847-9811500 - Fax 1-847-9811311

Fagor Automation West Coast
3176 Pullman Ave. Unit 110
Costa Mesa, CA 92626, USA
Tel. 1-714-9579885 - Fax 1-714-9579891

Fagor Automation East Coast (New Jersey-USA)
Tel. 1-973-7733525 - Fax 1-973-7733526

Fagor Automation South East
4234 Amber Ridge Ln
Valrico FL 33594, USA
Tel. 1-8136544599

Fagor Automation Ontario
Unit 3, 6380 Tomken Rd.
Mississauga L5T 1Y4, Canada
Tel. 1-905-6707448 - Fax 1-905-6707449

Fagor Automation Quebec, Canada
Tel. 1-450-2270588 - Fax 1-450-2276132

Fagor Automation Windsor, Canada
Tel. 1-519944-5674 - Fax 1-5199442369

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