

FAGOR 8070 CNC

Ordering Handbook.

Ref. 1106



Configuration

Central Unit in Operator Panel

8070 CNC with 10.4" LCD and Operator Panel



Code	Model	Description
83700028	8070-LCD-10-K-010	10" LCD + Keyboard for integrate Central Unit
83701022	8070-M-ICU-RS	Integrate Central Unit for Milling machines
83701023	8070-T-ICU-RS	Integrate Central Unit for Lathes
83701024	8070-OL-ICU-RS	Integrate Central Unit for General Purpose machines

(1) Choose one of them

8070 CNC with 10.4" LCD, Key board panel and JOG panel



Code	Model	Description
83700029	8070-LCD-10-010	10" LCD for integrate Central Unit
83701022	8070-M-ICU-RS	Integrate Central Unit for Milling machines
83701023	8070-T-ICU-RS	Integrate Central Unit for Lathes
83701024	8070-OL-ICU-RS	Integrate Central Unit for General Purpose machines
83760004	JOG PANEL	JOG panel
83760003	KEY BOARD PANEL-H	Keyboard

(1) Choose one of them

8070 CNC with 15" LCD and Operator Panel



Code	Model	Description
83700027	8070-LCD-15-010	15" LCD for integrate Central Unit
83701022	8070-M-ICU-RS	Integrate Central Unit for Milling machines
83701023	8070-T-ICU-RS	Integrate Central Unit for Lathes
83701024	8070-OL-ICU-RS	Integrate Central Unit for General Purpose machines
83760010	OP PANEL 15-E	JOG Panel and Keyboard with Emergency Stop
83760011	OP PANEL 15-H	JOG Panel and Keyboard with Handwheel

(1) Choose one of them

Central Unit in Electrical Cabinet

Central Unit



MCU



MCU-PCI

Code	Model	Description
83701028	8070-M-MCU-RS	Modular Central Unit for Milling machines
83701029	8070-T-MCU-RS	Modular Central Unit for Lathes
83701031	8070-BL-MCU-RS	Basic Line Modular Central Unit for General Purpose machines
83701030	8070-OL-MCU-RS	Open Line Modular Central Unit for General Purpose machines
83701032	8070-OL-MCU-RS-PCI	Modular Central Unit with PCI Bus option for General Purpose machines
83700038	PCI BOARD	PCI Bus board for "MCU-PCI" Modular Central Unit

15" LCD-VGA and Operator Panel

Code	Model	Description
83700050	LCD-15-SVGA	15" SVGA LCD monitor
03780215	CABLE VGA 15M	15 meters cable from VGA external monitor
03780230	CABLE VGA 30M	30 meters cable from VGA external monitor
83760010	OP PANEL 15-E	JOG panel and keyboard with emergency stop
83760011	OP PANEL 15-H	JOG panel and keyboard with handwheel

(1) VGA video cables have normal flexibility, they are not meant for cable carrying chains.

For further information, refer to the installation and start-up manual.

(2) Choose one of them

Making the Central Unit



Code	Model		
83700033	SER-CAN-8I-8IO	Sercos-Can module	(1)
83700047	MCHTR-CAN-8I-8IO	Mechatrolink-Can module	
83700046	MP-BASIC-2	Basic Microprocessor	(1)
83700036	MP-PLUS	High level Microprocessor	
83740054	CF-2GB	2 GB Compact Flash (only for BL model)	
83740051	CF-4GB	4 GB Compact Flash	
83740050	CF-8GB	8 GB Compact Flash	(1)
83701049	CF-32GB	32 GB Compact Flash	

(1) Choose one of them

Software Options

Code	Model	Option	OL	M	T
AXES					
INTERPOLATED AXES					
SPINDLES					
MAGAZINES					
CHANNELS					
83740030		SOFT ADDIT AXES	()	()	()
83740031		SOFT ADDIT SPINDLES	()	()	()
83740032		SOFT ADDIT TOOL MAGAZ	()	()	()
83740033		SOFT ADDIT CHANNELS	()	()	()
83740008	A	SOFT COCOM VERSION	()	()	()
83740011	B	SOFT TOOL RADIUS COMP	()	(S)	(S)
83740013	C	SOFT HIGH SPEED	()	(S)	()
83740019	D	SOFT EDIT/SIMUL	(S)	(S)	(S)
83740018	E	SOFT PROFILE EDITOR	(-)	(S)	(S)
83740021	F	SOFT DIGITAL SERCOS	(S)	(S)	(S)
83740007	G	SOFT PROBING CANNED CYCLES	(-)	()	()
83740010	H	SOFT C AXIS	()	(S)	()
83740034	I	SOFT TANDEM AXES	()	()	()
83740035	J	SOFT SYNCHRONISM	()	()	()
83740012	K	SOFT TANGENTIAL CONTROL	()	()	()
83740036	L	SOFT DUAL-PURPOSE (M-T)	(-)	()	()
83740009	M	SOFT RTCP	()	()	()
83740070	O	SOFT IEC 61131 LANGUAGE	()	()	()
83740042	P	SOFT DIGIT NO FAGOR	()	()	()
83740041	Q	SOFT DRILL CYCL OL	()	(-)	(-)
83740043	R	SOFT OPEN SYSTEM	()	()	()

8070		
OL	M	T
3 to 28	3 to 28	3 to 28
3 to 28	3 to 28	3 to 28
1 to 4	1 to 4	1 to 4
1 to 4	1 to 4	1 to 4
1 to 4	1 to 4	1 to 4

- Additional axes
- Additional spindles
- Additional magazines
- Additional channels
- Up to 4 axis interpolated simultaneously
- Tool radius compensation, G40 ... G43 functions
- High Speed algorithm
- Edition - Simulation
- Profile editor
- Sercos driver system
- Probe measuring cycles
- C axis
- 2 axes acting as Tandem (Backlash rack & Pinion)
- Spindle / Axes Synchronization
- Tangential control
- Milling & Turning operations and cycles capability
- RTCP option
- IEC 61131 Language
- NO Fagor digital drive system
- Drilling canned cycles for OL models
- Open system, to install others software's

(-) Not available
 () Optional feature
 (S) Standard feature

Software descriptions

Compact Flash (GB)

It may be of 2GB, 4GB, 8GB or 32 GB. It must be present in all the configurations. By default, the option with the least capacity is always offered. The 2GB compact flash is only available on the lowest models, the rest come with 4 GB by default.

Live tool.

The live tool must always be set as another spindle, both in open loop and in threading operations.

SOFT COCOM VERSION

It limits the number of axes that may be interpolated at the same time. When having this software option, they can interpolate a maximum of 4 axes at the same time.

SOFT TOOL RADIUS COMP (Standard on all models)

Tool compensation allows programming the contour to be machined based on part dimensions and without taking into account the dimensions of the tool that will be used later on. This avoids having to calculate and define the tool path depending on the radius of the tool.

SOFT HSSA MACHINING SYSTEM (HIGH SPEED)

The acronym "HSSA" means High Speed Surface Accuracy. It is the new improved version of HSC (High Speed Cutting)

HSSA algorithm calculations make it possible to optimize high speed machining. This achieves higher cutting speeds, smoother contours, better surface finish and higher accuracy.

SOFT EDIT/SIMUL (Standard on all models)

It allows editing, modifying and simulating a part-program.

SOFT PROFILE EDITOR (Standard on all models)

It allows editing part profiles graphically and importing DXF files.

SOFT DIGITAL SERCOS (Standard on all models)

Sercos drive system bus

SOFT PROBING CANNED CYCLES

The CNC may have two probes; usually a tabletop probe to calibrate tools and a measuring probe to measure the part.

It also offers functions G100, G103 and G104 for programming probing moves.

This feature activates the probing canned cycles that help measuring part surfaces and calibrating tools updating their dimensions.

SOFT C AXIS

It activates the kinematics for working with C axis and their associated machining cycles.

The CNC may be used with several C axis spindles.. The parameters of each spindle indicate whether it will work as a C axis or not and it won't be necessary to activate another axis in the machine parameters.

SOFT TANDEM AXES

A tandem axis consists in two motors mechanically coupled (slaved) and making up a single transmission system (axis or spindle). This system is normally used to move the axes on large machines.

The CNC configuration contemplates both axes of the tandem. Only an axis is programmed (the master tandem). The other one (the slave tandem) cannot be programmed, but it is controlled by the CNC.

When activating this feature, it must be borne in mind that for each Tandem axis of the machine, another axis must be added to the whole configuration of the machine. For example, on a large 3-axis lathe (XZ and tailstock), if the tailstock is a Tandem axis, the final purchase order for the machine must indicate 4 axes.

SOFT SYNCHRONISM

Axes and spindles may be synchronized in 2 ways, in velocity or in position.

The CNC configuration contemplates 2 axes or 2 spindles that are synchronized. Once synchronized, only the master is displayed and programmed.

SOFT TANGENTIAL CONTROL

"Tangential Control" Keeps a rotary axis always in the same orientation with respect to the programmed path. The machining path is defined in the axes of the active plane and the CNC keeps the orientation of the rotary axis along the whole path.

SOFT DUAL-PURPOSE

It allows having milling and turning machining cycles.

On lathes with Y axis, it allows making pockets, bosses and even irregular pockets with islands with the Y axis using milling cycles. Turning cycles may be used on mills that have a rotary axis working as C axis.

SOFT DYNAMIC RTCP

The "DYNAMIC RTCP" option is a must for machining in RTCP (Rotating Tool Center Point) with 4, 5 or 6-axis interpolation.

SOFT IEC 61131 LANGUAGE

The IEC 61131 is PLC programming language, very popular on alternative markets and is entering the machine-tool market little by little.

When activating this feature, the PLC may be programmed either in the usual Fagor language or in IEC 61131 format.

SOFT DIGITNO FAGOR

Mechatrolink drive system bus

SOFT DRILL CYCL OL

Drilling canned cycles for OL models

SOFT OPEN SYSTEM

The CNC is a closed system that offers all the features needed to machine parts. However, sometimes, specific customers use third-party applications for taking measurements, doing statistics or running other tasks besides machining a part.

This feature must be active when installing this type of applications, even if it is an Office file. Once the application has been installed, it is recommended to close the CNC back in order to prevent the operators from installing other kinds of applications that could slow the system down and affect the machining operations.

Accessories

83630050	USB EXTENSION CABLE	USB extension cable
83760005	CNC FPU	Fagor Power Unit (Battery unit)
83760008	MOUSE UNIT	Mouse unit
83700075	TRANSP-KEYS & EXTRACTO	20 transparent key caps and an extractor tool
83700076	TRANSP-KEYS	20 transparent key caps
83700077	WHITE-KEYS	20 white key caps

CNC Simulator for PC

83740017	PC SIMUL PAR+CD	PC Simulator - CD ROM and parallel port connector
83740022	PC SIMUL USB+CD	PC Simulator - CD ROM and USB connector
83740024	PC SIMUL 10USB+CD	PC Simulator - CD ROM and USB for 10 working stations
83740023	PC SIMUL 50USB+CD	PC Simulator - CD ROM and USB for 50 working stations

Remote I/O modules

Are easy to install, they can be mounted at strategic points of the machine for having extra inputs and outputs distributed next to each device. They are distributed in groups and are connected to the central unit through the CAN bus.

There three different RIOs: RIOW & RIO5 series use CANopen protocol and RIO70 serie use CANfagor protocol. The RIO70 serie can not be combined with the others.

There are digital inputs/outputs and analog inputs/outputs in three series, but feed-back module is only available in RIO70 series.

RIOW modules are smaller than RIO5 and RIO70, but the RIO70 modules have double half-card and you can configure modules to your needs.

Analog configurations need RIO7 modules, because feed-back inputs are only available in this model.

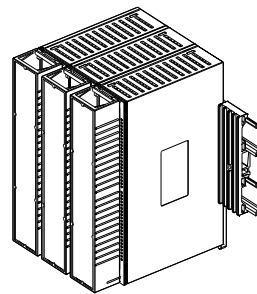
Remote Modules - RIO70 serie

RIO70 series. Remote modules with CANfagor protocol.

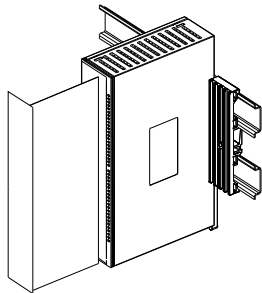
The CNC can handle up to 32 groups of Remote Modules.

Each group carries an I/O Power Supply and may consist of up to 16 modules.

All groups are interconnected through a CAN Bus with the Central Unit and the Operator Panel.



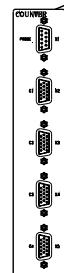
Remote Modules. Full-card



RIO70 POWER SUPPLY
83720100

Power Supply

Required always. Placed on the left side of the group.



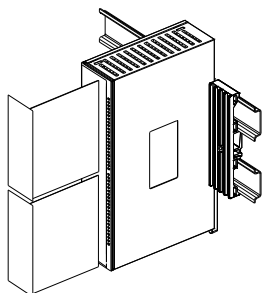
RIO704 FEED-BACK MOD
83720101

Counter (Option)

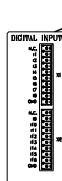
(2 Feed-Back + 2 Probe)

Needed when using an analog interface with the drive.

Remote Modules. Double half-card.

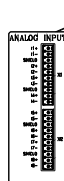


The double half-size Remote Modules are made of two of the following cards.



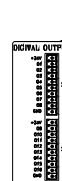
16DI
(Option)

16 Digital Inputs



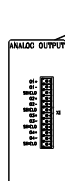
8AI
(Option)

8 Analog Inputs



16DO
(Option)

16 Digital Outputs



4AO
(Option)

4 Analog Outputs

These are the 14 possible combinations.

RIO70 16DI/—MOD	83720102
RIO70 16DI/16DI MOD	83720103
RIO70 16DI/16DO MOD	83720104
RIO70 16DI/8AI MOD	83720105
RIO70 16DI/4AO MOD	83720106
RIO70 16DO / —MOD	83720108
RIO70 16DO/16DO MOD	83720109
RIO70 16DO/8AI MOD	83720110
RIO70 16DO/4AO MOD	83720111
RIO70 8AI/—MOD	83720113
RIO70 8AI/8AI MOD	83720114
RIO70 8AI/4AO MOD	83720115
RIO70 4AO/—MOD	83720117
RIO70 4AO/4AO MOD	83720118

Consumption of the remote modules

The power supply is in charge of supplying to the rest of the modules through +5V and ±18V and managing the internal bus of the group. The total consumption of the group depends on the configuration of the modules.

		5V	±18V
DI	Digital inputs	0,40 watts	- - -
DO	Digital outputs	0,65 watts	- - -
AI	Analog inputs	0,30 watts	1,80 watts
AO	Analog outputs	0,35 watts	3,40 watts
CT	Counters	1,75 watts	- - -
CPU	CPU-CAN	0,60 watts	- - -

The consumption of the CPU-CAN is added to each module of the configuration. When mounting two half-size modules together (in the same box), the consumption of the CPU-CAN must only be added once.

The total consumption of the group must not exceed the following maximums:

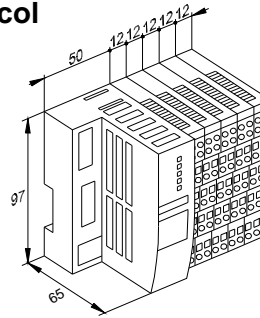
- For +5V, a maximum consumption of 10 watts.
 - For ±18V, a maximum consumption of 7.2 watts.
- If any of them is exceeded, double the group. Use two power supplies and distribute the modules.

Example

Modules	5V	±18V
(CT) + (CPU)	1,75 + 0,6	- - -
(DI) + (DI) + (CPU)	0,4 + 0,4 + 0,6	- - -
(DO) + (DO) + (CPU)	0,65 + 0,65 + 0,6	- - -
(AO) + (CPU)	0,35 + 0,6	3,4
Total consumption	6,60 watts	3,4 watts

Remote Modules - RIOW serie

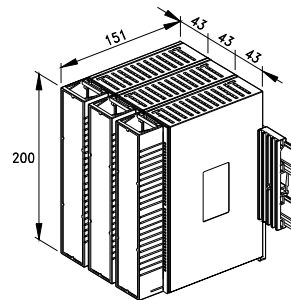
RIOW series. Remote modules with CANopen protocol



Header CANopen	RIOW CANOPEN STAND	03300010
Expansion module with 8 digital inputs	RIOW 8DI-51205053	03300008
Expansion module with 8 digital outputs	RIOW 8DO-51205043	03300007
Expansion module with 4 analog inputs	RIOW 4AI-51205050	03300006
Expansion module with 4 analog outputs	RIOW 4AO-51205039	03300005
Expansion module with 2 PT100 inputs	RIOW 2AI PT100-51205048	03300004
24V _{DC} 10A power supply for the modules	RIOW PS24-51205036	03300003
Line terminating module.	RIOW END-51205037	03300000

Remote Modules - RIO5 serie

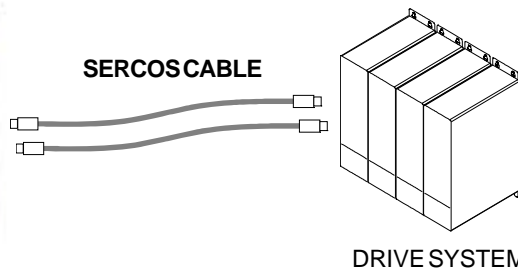
RIO5 series. Remote modules with CANopen protocol



RIO5 PS-24I/16O	83070015	Header module with power supply, 24 digital inputs and 16 digital outputs
RIO5 PS-2PT100/4AI/4AO	83070018	Header module with 4 analog inputs, 4 analog outputs and 2 inputs for PT100 temperature gages
RIO5 24I/16O EXP MOD	83070016	Expansion module with 24 digital inputs and 16 digital outputs
RIO5 48I/32O EXP MOD	83070017	Expansion module with 48 digital inputs and 32 digital outputs

Select the cables necessary for each configuration.

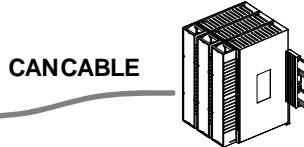
Ready Made cables for CAN Bus (CAN CABLE) and Sercos ring (SFO & SFO-FLEX).



Each drive module having the Sercos interface option offers a small cable for connecting it to the adjacent module. Only the lines going to the CNC (Back and forth) or the ones joining the far between modules.



Remote Modules Group



SERCOS cables

Sercos optic fiber

1m	SFO-1	03900001
2m	SFO-2	03900002
3m	SFO-3	03900003
5m	SFO-5	03900005
7m	SFO-7	03900007
10m	SFO-10	03900010
12m	SFO-12	03900012

Flexible Sercos optic fiber

10m	SFO-FLEX-10	03910010
15m	SFO-FLEX-15	03910015
20m	SFO-FLEX-20	03910020
25m	SFO-FLEX-25	03910025
30m	SFO-FLEX-30	03910030
35m	SFO-FLEX-35	03910035
40m	SFO-FLEX-40	03910040
40m	SFO-V-FLEX-40	03920040
50m	SFO-V-FLEX-50	03920050
60m	SFO-V-FLEX-60	03920060
75m	SFO-V-FLEX-75	03920075
100m	SFO-V-FLEX-100	03920100

CAN cable for Remote I/O's

5m	CAN CABLE 5M	03780100
10m	CAN CABLE 10M	03780101
15m	CAN CABLE 15M	03780102
20m	CAN CABLE 20M	03780103
25m	CAN CABLE 25M	03780104
30m	CAN CABLE 30M	03780106
35m	CAN CABLE 35M	03780107
40m	CAN CABLE 40M	03780108
45m	CAN CABLE 45M	03780109
50m	CAN CABLE 50M	03780110
75m	CAN CABLE 75M	03780111
100m	CAN CABLE 100M	03780112
150m	CAN CABLE 150M	03780113

In order to complete its order

CONFIGURATION: Central Unit in Operator Panel

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83701032	8070-OL-MCU-RS-PCI	Modular Central Unit with PCI Bus option
83700038	PCI BOARD	PCI Bus board for "MCU-PCI" Modular Central Unit
83700050	LCD-15-SVGA	15" SVGA LCD monitor
03780215	CABLE VGA 15M	15 meters cable from VGA external monitor
03780230	CABLE VGA 30M	30 meters cable from VGA external monitor
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MAKING THE CENTRAL UNIT

83700033	SER-CAN-8I-8IO	Sercos-Can module
83700047	MCHTR-CAN-8I-8IO	Mechatrolink-Can module
83700046	MP-BASIC-2	Basic Microprocessor
83700036	MP-PLUS	High level Microprocessor
83740054	CF-2GB	2 GB Compact Flash (only for BL model)
83740051	CF-4GB	4 GB Compact Flash
83740050	CF-8GB	8 GB Compact Flash
83701049	CF-32GB	32 GB Compact Flash

SOFTWARE FEATURES

83740000	SOFT-8070 M	Milling Software
83740001	SOFT-8070 T	Lathe Software
83740015	SOFT-8070 GP	OL model Software.
83740030	SOFT ADDIT AXES	Additional axes
83740031	SOFT ADDIT SPINDLES	Additional spindles
83740032	SOFT ADDIT TOOL MAGAZ	Additional magazines
83740033	SOFT ADDIT CHANNELS	Additional channels
83740008	SOFT COCOM VERSION	Up to 4 axis interpolated simultaneously
83740011	SOFT TOOL RADIUS COMP	Tool radius compensation, G40 ... G43 functions
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83740019	SOFT EDIT/SIMUL	Edition - Simulation
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83740034	SOFT TANDEM AXES	2 axes acting as Tandem (Backlash rack & Pinion)
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83740043	SOFT OPEN SYSTEM	Open system, to install others software's

MANUALS

03753600	M.CNC 8070 OEM(CAS)STAN	OEM manual in Spanish
03753601	M.CNC 8070 OEM(IN)STAN	OEM manual in English
03753610	M.CNC 8070 USER(CAS)STAN	User Manual in Spanish
03753611	M.CNC 8070 USER(IN)STAN	User Manual in English
03753612	M.CNC 8070 USER(FRA)STAN	User Manual in French
03753613	M.CNC 8070 USER(ALE)STAN	User Manual in German
03753614	M.CNC 8070 USER(ITA)STAN	User Manual in Italian
03753615	M.CNC 8070 USER(BRA)STAN	User Manual in Portuguese-Brazilian
03753620	M.CNC 8070 OEM(CAS)AVAN	OEM manual in Spanish
03753621	M.CNC 8070 OEM(IN)AVAN	OEM manual in English
03753630	M.CNC 8070 USER(CAS)AVAN	User Manual in Spanish
03753631	M.CNC 8070 USER(IN)AVAN	User Manual in English
03753632	M.CNC 8070 USER(FRA)AVA	User Manual in French
03753634	M.CNC 8070 USER(ITA)AVAN	User Manual in Italian
03753635	M.CNC 8070 USER(BRA)AVAN	User Manual in Portuguese-Brazilian
03753790	M.CN8070M CYC(CAS)AVANZ	Canned cycles Manual in Spanish
03753791	M.CN8070M CYC(IN)AVANZ	Canned cycles Manual in English
03753792	M.CN8070M CYC(FRA)AVANZ	Canned cycles Manual in French
03753793	M.CN8070M CYC(ALE)AVANZ	Canned cycles Manual in German
03753794	M.CN8070M CYC(ITA)AVANZ	Canned cycles Manual in Italian
03753795	M.CN8070M CYC(BRA)AVANZ	Canned cycles Manual in Portuguese-Brazilian
03753800	M.CN8070T CYC(CAS)AVANZ	Canned cycles Manual in Spanish
03753801	M.CN8070T CYC(IN)AVANZ	Canned cycles Manual in English
03753802	M.CN8070T CYC(FRA)AVANZ	Canned cycles Manual in French
03753803	M.CN8070T CYC(ALE)AVANZ	Canned cycles Manual in German
03753804	M.CN8070T CYC(ITA)AVANZ	Canned cycles Manual in Italian
03753805	M.CN8070T CYC(BRA)AVANZ	Canned cycles Manual in Portuguese-Brazilian
03753810	M.CN8070 M CYC (CAS)STAN	Canned cycles Manual in Spanish
03753811	M.CN8070 M CYC(IN)STAN	Canned cycles Manual in English
03753812	M.CN8070 M CYC(FRA)STAN	Canned cycles Manual in French
03753813	M.CN8070 M CYC(ALE)STAN	Canned cycles Manual in German
03753814	M.CN8070 M CYC(ITA)STAN	Canned cycles Manual in Italian
03753815	M.CN8070 M CYC(BRA)STAN	Canned cycles Manual in Portuguese-Brazilian
03753820	M.CN8070 T CYC(CAS)STAN	Canned cycles Manual in Spanish
03753821	M.CN8070 T CYC(IN)STAN	Canned cycles Manual in English
03753822	M.CN8070 T CYC(FRA)STAN	Canned cycles Manual in French
03753823	M.CN8070 T CYC(ALE)STAN	Canned cycles Manual in German
03753824	M.CN8070 T CYC(ITA)STAN	Canned cycles Manual in Italian
03753825	M.CN8070 T CYC(BRA)STAN	Canned cycles Manual in Portuguese-Brazilian

ACCESORIES

83630050	USB EXTENSION CABLE	USB extension cable
83760005	CNC FPU	Fagor Power Unit (Battery unit)
83760008	MOUSE UNIT	Mouse unit
83700075	TRANSP-KEYS & EXTRACTOR	20 transparent key caps and an extractor tool
83700076	TRANSP-KEYS	20 transparent key caps
83700077	WHITE-KEYS	20 white key caps

SIMULATOR

83740017	PC SIMUL PAR+CD	PC Simulator - CD ROM and parallel port connector
83740022	PC SIMUL USB+CD	PC Simulator - CD ROM and USB connector
83740024	PC SIMUL 10USB+CD	PC Simulator - CD ROM and USB for 10 working stations
83740023	PC SIMUL 50USB+CD	PC Simulator - CD ROM and USB for 50 working stations

Spare parts

83700049	SER-CAN-8I-8IO (RF)
83700048	MCHTR-CAN-8I-8IO (RF)
83701072	CF-2GB (RF)
83740053	CF-4GB (RF)
83740052	CF-8GB (RF)
83701073	CF-32GB (RF)

REMOTE I/O MODULES

RIO70 series

83720100	RIO70 POWER SUPPLY	Power Supply
83720102	RIO70 16DI/--MOD	16 digital inputs
83720103	RIO70 16DI/16DI MOD	32 digital inputs
83720104	RIO70 16DI/16DO MOD	16 digital inputs / 16 digital outputs
83720105	RIO70 16DI/8AI MOD	16 digital inputs / 8 analog inputs
83720106	RIO70 16DI/4AO MOD	16 digital inputs / 4 analog outputs
83720108	RIO70 16DO / --MOD	16 digital outputs
83720109	RIO70 16DO/16DO MOD	32 digital outputs
83720110	RIO70 16DO/8AI MOD	16 digital outputs / 8 analog inputs
83720111	RIO70 16DO/4AO MOD	16 digital outputs / 4 analog outputs
83720113	RIO70 8AI/--MOD	8 analog inputs
83720114	RIO70 8AI/8AI MOD	16 analog inputs
83720115	RIO70 8AI/4AO MOD	8 analog inputs / 4 analog outputs
83720117	RIO70 4AO/--MOD	4 analog outputs
83720118	RIO70 4AO/4AO MOD	8 analog outputs
83720101	RIO70 4 FEED-BACK MOD	4 feedback inputs

REMOTE I/O MODULES

RIOW series

03300010	RIOW CANOPEN STAND	Header module CANopen
03300008	RIOW 8DI-5120503	Expansion module with 8 digital inputs
03300007	RIOW 8DO-51205043	Expansion module with 8 digital outputs
03300006	RIOW 4AI-51205050	Expansion module with 4 analog inputs
03300005	RIOW 4AO-51205039	Expansion module with 4 analog outputs
03300004	RIOW 2AI PT100-51205048	Expansion module with 2 inputs for PT100
03300003	RIOW PS24-51205036	24 V DC 10 A power supply for the modules
03300000	RIOW END-51205037	Line terminating module.

REMOTE I/O MODULES

RIO5 series

83070015	RIO5 PS-24I/16O	83070016	RIO5 24I/16O EXP MOD
83070018	RIO5 PS-2PT100/4AI/4AO	83070017	RIO5 48I/32O EXP MOD

CAN cable for Remote I/O's

03780100	CAN CABLE 5M	03780108	CAN CABLE 40M
03780101	CAN CABLE 10M	03780109	CAN CABLE 45M
03780102	CAN CABLE 15M	03780110	CAN CABLE 50M
03780103	CAN CABLE 20M	03780111	CAN CABLE 75M
03780104	CAN CABLE 25M	03780112	CAN CABLE 100M
03780106	CAN CABLE 30M	03780113	CAN CABLE 150M
03780107	CAN CABLE 35M		

Sercos optic fiber cables

03900001	SFO-1	03900007	SFO-7
03900002	SFO-2	03900010	SFO-10
03900003	SFO-3	03900012	SFO-12
03900005	SFO-5		

Flexible Sercos optic fiber cables

03910010	SFO-FLEX-10	03920040	SFO-V-FLEX-40
03910015	SFO-FLEX-15	03920050	SFO-V-FLEX-50
03910020	SFO-FLEX-20	03920060	SFO-V-FLEX-60
03910025	SFO-FLEX-25	03920075	SFO-V-FLEX-75
03910030	SFO-FLEX-30	03920100	SFO-V-FLEX-100
03910035	SFO-FLEX-35		
03910040	SFO-FLEX-40		