AUDIN Siège social: 7 bis rue de Tinqueux 51100 Reims
Tel. 03 26 04 20 21 - fax 03 26 04 28 20 - Internet: http://www.audin.fr

MITSUBISHI ELECTRIC

SPAC20 Co-processor Module for Special Process Applications and High-End Process Control

Specially designed hardware with many advanced features, for high-demand special process applications, process control in general and applications made possible by the DSP (Digital Signal Processor).

Main features:

- Communication with the PLC CPU as a function module
- Stand-alone possibility
- Real-time executive
- ANSI C programmed user's tasks
- Fast on-board digital and analog I/O's.

Special process control

Advanced hardware and software functions make it ideally suited for control of various demanding processes, e.g.:

- Highly non-linear processes with fuzzy gain scheduling.
- Blow moulding machines Parison, hydraulic and temperature autotuning control.
- Predictive function control (PFC) for systems with long dead time.
- Other demanding special process applications.

Process control in general

The process control software IDR BLOK enables effective implementation of process control applications in a board range of processes, e.g.:

- Glass melting furnaces
- Extruders for plastic production
- Pulp cooking process
- Technical rubber production
- Sewage purification plants
- Drying chambers for brick production

This co-processor module enables the implementation of high programming languages for control in real-time execution and expands your solutions.

- Water preparation for brewing process with pH control
- Crude oil production at oilfield
- Waste gas purification
- Combined heat and power generation
- Production of melting adhesives
- Automation and control of steel strip slicing line

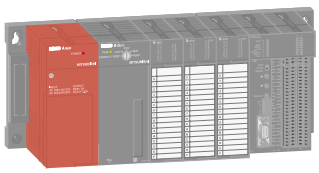
And others.

Applications made possible by the SPAC module

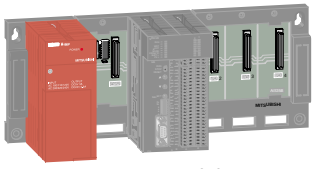
The SPAC20 enables effective calculations of many very special applications and methods, e.g.:

- Fourier-based filtering
- Automatic digital gain control system
- Implementation of an adaptive filter
- Artificial Neural Networks (ANN) for fault detection in induction motors
- Velocity estimation from a digital position sensor in motor control

And others.



Configuration example with PLC



Configuration example for autarchic processing

Specifications SPAC20	
Working environment	MELSEC AnS/QnAS, AnU/QnA❶, MELSEC System Q❷ series PLCs or as stand alone device without CPU
Processor	40 MHz Texas Instruments TMS 320C32 DSP
Arithmetic	Floating point
Memory	2 MB RAM battery backed-up, 2 MB FLASH
Peripheral communication	RS232C, up to 115 Kbaud
Digital inputs	
Number	6
Response time	< 20 µs in high-speed mode
Voltage	24 V (OFF < 5V, ON > 12V)
Nominal input current	7.7 mA
Non-destructive input voltage	-24 V to +40 V
Frequency meters	4 of DI can be frequency meters (up to 20 kHz each)
Galvanic isolation	Separate for each channel, no common
Digital outputs	
Number	6
Nominal current	0.5 A
Protection	Short-circuit, thermal overload, reverse polarity
Galvanic isolation	Between each pair of outputs and A-BUS
Analog inputs	
Number	4
Sampling rate	80 µs in fast mode, 160 µs in normal mode
Resolution	16 bit
Galvanic isolation	Between analog common and A-BUS
Voltage	-10 V to +10 V DC
Current	-20 mA to +20 mA
Optional Piggy back modules	Pt-100/Pt-1000, R100/R1000 Ω, separate galvanic isolation 4–20 mA
Analog outputs	
Number	4
Refresh rate	80 µs in fast mode, 160 µs in normal mode
Resolution	12 bits + sign in voltage mode, 12 bit in current mode
Galvanic isolation	Between analog common and A-BUS
Voltage	±10 V DC
Current	0/4 to 20 mA
Protection	Short-circuit in voltage mode
Power requirements	
From the back plane	Approx. 0.4 A on 5 V DC
External voltage	24 V DC (±20 %)
Current	Approx. 15 mA for digital outputs; up to 200 mA for analog I/O board
Others	
Programmable with	IDR BLOK and/or TI "C" language
Accessories needed for systems	❶ Connection cable A1SC05NB and extension base unit A1S52B-S1 ❷ Connection cable QC12B and extension base unit QA1S68B
Accessories	Clamp type terminal blocks, Piggy back module Pt-100/Pt-1000 or R100/R1000 Ω, Piggy back module separate galvanic isolated analog input channels 4–20 mA, IDR BLOK programming tool, TI development tools for "C" language or ASM programming

Order Information		Art. No.
Hardware		
SPAC20	Co-processor module	144738
SPAC20 IDR	Co-processor module with preloaded IDR BLOK RT	131235
SPAC20 ATHC16	Autotuning heating/cooling temperature controller for extruders, 16 zones	150485
SPAC20 ATHC32	Autotuning heating/cooling temperature controller for extruders, 32 zones	150486
SPAC20 ATHC64	Autotuning heating/cooling temperature controller for extruders, 64 zones	150487
SPAC20 PA4	Parison and Hydraulic 4 channel controller for blow-moulding machines	150484
Software		
IDR BLOK 1024B V0422-1L0C-E	Development software for process control solutions, up to 1024 blocks	144714
IDR BLOK 64B V0422-1L0C-E	Development software for process control solutions, up to 64 blocks	144715
IDR BLOK 16B V0422-0L0C-E-DEMO	Development software for process control solutions, up to 16 blocks	144660
TMS320C3x/4x Code Generation Tools	Development software for C and assembler programming	149818

Specifications subject to change.
Art. no.: 129917-B, Printed in Germany 05.03

MITSUBISHI ELECTRIC INDUSTRIAL AUTOMATION

Gothaer Straße 8
D-40880 Ratingen
Phone: 02102 486-7800
Hotline: 01805 000-765
Fax: 02102 486-4069
megfa-mail@meg.mee.com
www.mitsubishi-automation.de
www.mitsubishi-automation.com