

Main applications

- Plastic machines
- Packing and packaging machines
- Auxiliary machines
- Automation systems

Main features

- Installation on R-BUSxx backplane
- 6 optically isolated analog inputs at 16 bit
- Configuration of inputs via software
- On board power supply for transducers
- 6 optically isolated analog outputs at 16 bit $\pm 10V$ 20mA
- Electronic protection of the outputs
- Diagnostic LEDs

PROFILE

The R-MA6 is a mixed module with 6 analog inputs and 6 analog outputs. It controls 6 analog inputs configurable for potentiometer, voltage, current and strain-gauge, satisfying the applicative needs of common transducers used in industrial applications.

The conversion system is sequential on the 6 channels.

Analog-digital conversion is at 16 bits.

The board can be software programmed to run intercepts and launch interrupts to the MASTER CPU.

It also controls 6 analog outputs in bipolar voltage $\pm 10V$ with maximum current of 20mA per output.

The outputs have 16 bit resolution.

They are protected against short circuit and overload by an electronic system.

The module has output diagnostics to check correct function.

DATI TECNICI

- 6 analog inputs with 16 bit A/D conversion
- Sample time for all channels
- 100Hz and 2KHz filter selectable via software

Inputs

- Potentiometer min. 2k Ω
- Differential 0...100mV, 0...30mV for strain gauge
- Linear 0...10V, $\pm 10V$, 0...2V
- Linear 0...20mA, 4...20mA

Input impedance for:

- Potentiometer > 1M Ω
- Linear 0...10V, $\pm 10V$ e 0...2V > 1M Ω
- Strain gauge 0...30mV > 1M Ω
- Linear 0/4...20mA = 100 Ω

Accuracy of inputs better than 0,2%

Power supply for Inputs

- 24Vdc $\pm 25\%$ external (fed to terminals)
- 10V for strain-gauge max 150mA
- 24V for amplified sensors max 500mA
- Input isolation: > 2,5kV

Over-voltage on inputs for 1 ms maximum: max. 1kV

Outputs

- Management of 6 analog outputs with conversion D/A to 16bit
- Settling time 100 μ s max.
- Voltage outputs $\pm 10V$, max. 20mA for channel
- Electronic protection against short-circuit and overload for each group of 3 channels: 100mA max.
- Linearity better than 0.5%
- Output isolation: > 2,5KV
- Over-voltage on inputs for 1 ms: maximum 1kV

Diagnostics

- Yellow LED presence external 24V power supplies
- Yellow LED presence power supply for transducers
- Green RUN LED with double function:
 - slow flash for standard configuration
 - fast flash for user configuration
- Red LED Interrupt on
- Red Fail LED module error

MECHANICAL DATA

Dimensions: 92x90x25,4mm

Weight: 130g.

Attachment: snaps onto R-BUS(x)

Protection level IP20

36 pin front panel connector with spring-mounted lock

AMBIENT CONDITIONS

Working temperature: 0...50°C

Storage temperature: -20...70°C

Humidity: max. 90% Rh not condensing

CONFIGURABILITY OF INPUTS

	Potentiometer 10V power supply on board	Voltage 0...10V	Current 0/4...20mA	Amplified sensor 24V power supply on board	Strain-gauge 10V power supply on board
CH1	X	X	X	X	X
CH2	X	X	X	X	X
CH3	X	X	X	X	
CH4	X	X	X	X	
CH5	X	X	X	X	
CH6	X	X	X	X	

INSTALLATION AND CONNECTIONS

The front connections of the module have:

Power supplies 24Vdc $\pm 15\%$ 500mA max., use unipolar cable 0,75mm max., do not attach lug

• Transducer inputs:

potentiometer, use 3 pin shielded cable with 0.5 mm max. cross-section. Do not attach lug. Connect shielding directly to the grounded plate and as close as possible to the module.

amplified sensor, use 2 or 3 pin shielded cable with 0.5 mm max. cross-section. Do not attach lug. Connect shielding directly to the grounded plate and as close as possible to the module.

strain-gauge, use 4 or 6 pin shielded cable with 0.5 mm max. cross-section. Do not attach lug. Connect shielding directly to the grounded plate and as close as possible to the module. To calibrate the transducer, use calibration cables outside the module.

• Linear inputs:

voltage, use 2 pin shielded cable with 0,5mm max. cross-section. Do not attach lug. Connect shielding directly to the grounded plate and as close as possible to the module.

current, use 2 pin shielded cable with 0,5mm max. cross-section. Do not attach lug. Connect shielding directly to the grounded plate and as close as possible to the module.

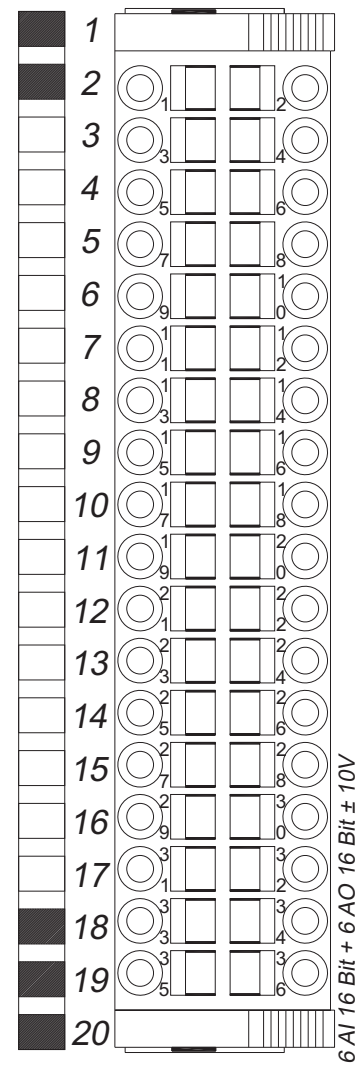
Bipolar analog outputs $\pm 10V$ or 0/20mA, use shielded cable with 0,5mm max. cross-section, do not attach lug, connect shielding directly to the grounded plate and as close as possible to the module.

NOTE:

The shield for the analog inputs/outputs must be fixed near the module and directly on the grounded plate.

GEFRAN

Yellow led POWER $+24V_{in}$
 Yellow led POWER VS / VP



Red led INT
 Green led RUN
 Red led FAIL

+V24in	1	2	GNDin
VS1	3	4	VS2
VP1	5	6	VP2
-IN1	7	8	-IN2
+IN1	9	10	+IN2
GNDR1	11	12	GNDR2
GND1	13	14	GND2
+24Vout1	15	16	
VP3	17	18	VP4
+IN3	19	20	+IN4
GNDR3	21	22	GNDR4
VP5	23	24	VP6
+IN5	25	26	+IN6
GNDR5	27	28	GNDR6
GNDout1	29	30	GNDout2
OUT1	31	32	OUT2
OUT3	33	34	OUT4
OUT5	35	36	OUT6

1	2
4	3

R-MA6

ORDER CODE

module code **R-MA6** **F032132** Code

GEFRAN spa reserves the right to make aesthetic or functional changes at any time and without notice



The instrument conforms to European Union Directives 89/336/CEE and 73/23/CEE with reference to generic standards:
CEI-EN 61000-6-2 (immunity in industrial environment) - **EN 61000-6-3** (emissions in residential environments) - **EN 61010-1** (safety) -
EN 61131-2 (product norme)