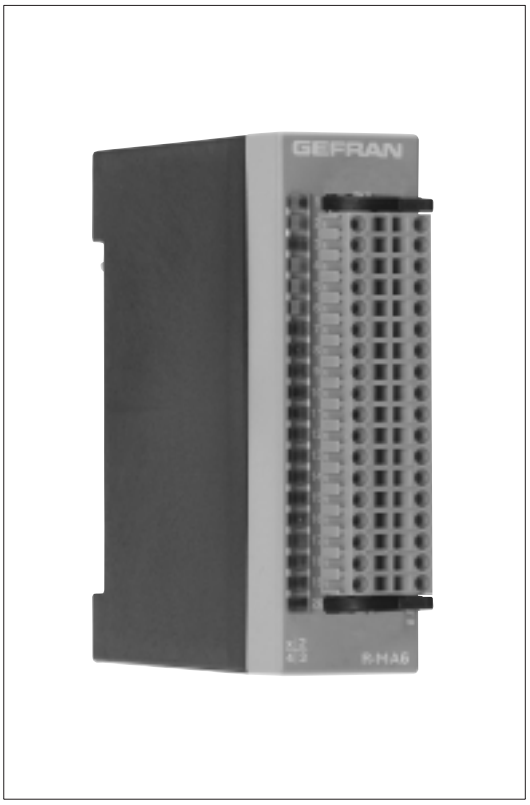
GEFRAN

R-MA6

MODULE WITH 6 ANALOG INPUTS + 6 ANALOG OUTPUTS



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 ±10V 20mA*
- *Electronic protection of the outputs*
- *Diagnostic LEDs*
- *In Conformity with UL508*

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 (channels 3,4,5,6 only) 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 Gateway node.
It also controls 6 analog outputs in bipolar voltage ± 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.

TECHNICAL DATA

- 6 analog inputs with 16 bit A/D conversion
- Sample time for all channels: 200µs
- Selectable digital filter
- Power supply via backplane R-BUS (x) 3.3V

Inputs

- Potentiometer min. 2kΩ
- Differential 0...100mV, 0...30mV for strain gauge
- Linear 0...10V, 0...2V
- Linear 0...20mA, 4...20mA

Input impedance for:

- Potentiometer > 1MΩ
- Linear 0...10V, 0...2V > 1MΩ
- Strain gauge: > 1MΩ
- Linear 0/4...20mA = 100Ω

Accuracy of inputs better than 0,5%

Power supply for Inputs

24VDC ±25% 500mA max external (fed to terminals):

- 10V for strain-gauge max 150mA
- 24V for amplified sensors max 500mA

Input isolation: > 2,0kV

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

Outputs

- Power supply output; 24VDC ±25% 500mA max
- Management of 6 analog outputs with conversion D/A to 16bit
- Settling time 100µs max.
- Voltage outputs ±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: > 2,0KV
- 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
CH2	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 ±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.

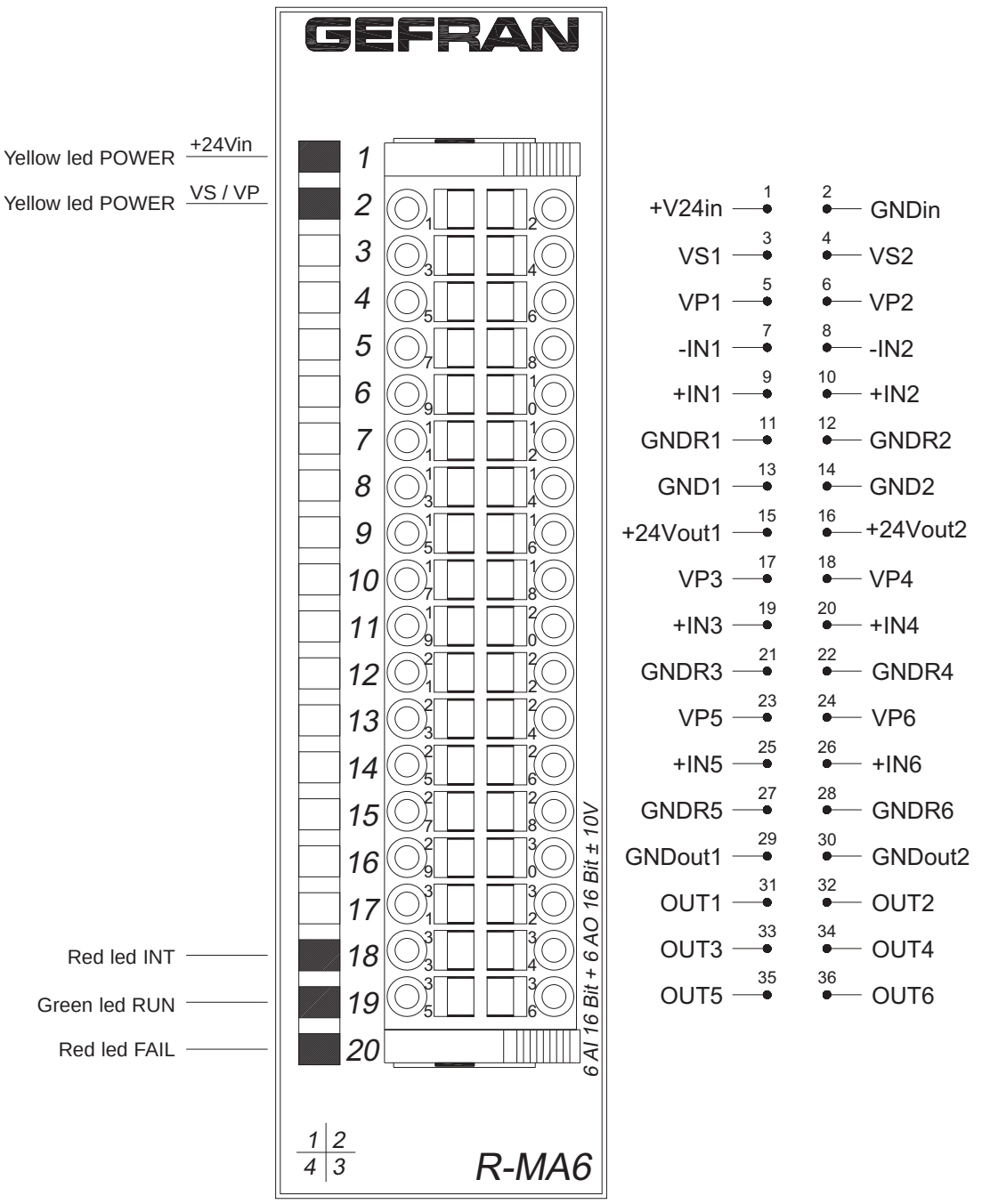
- **Linear inputs**:

  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.

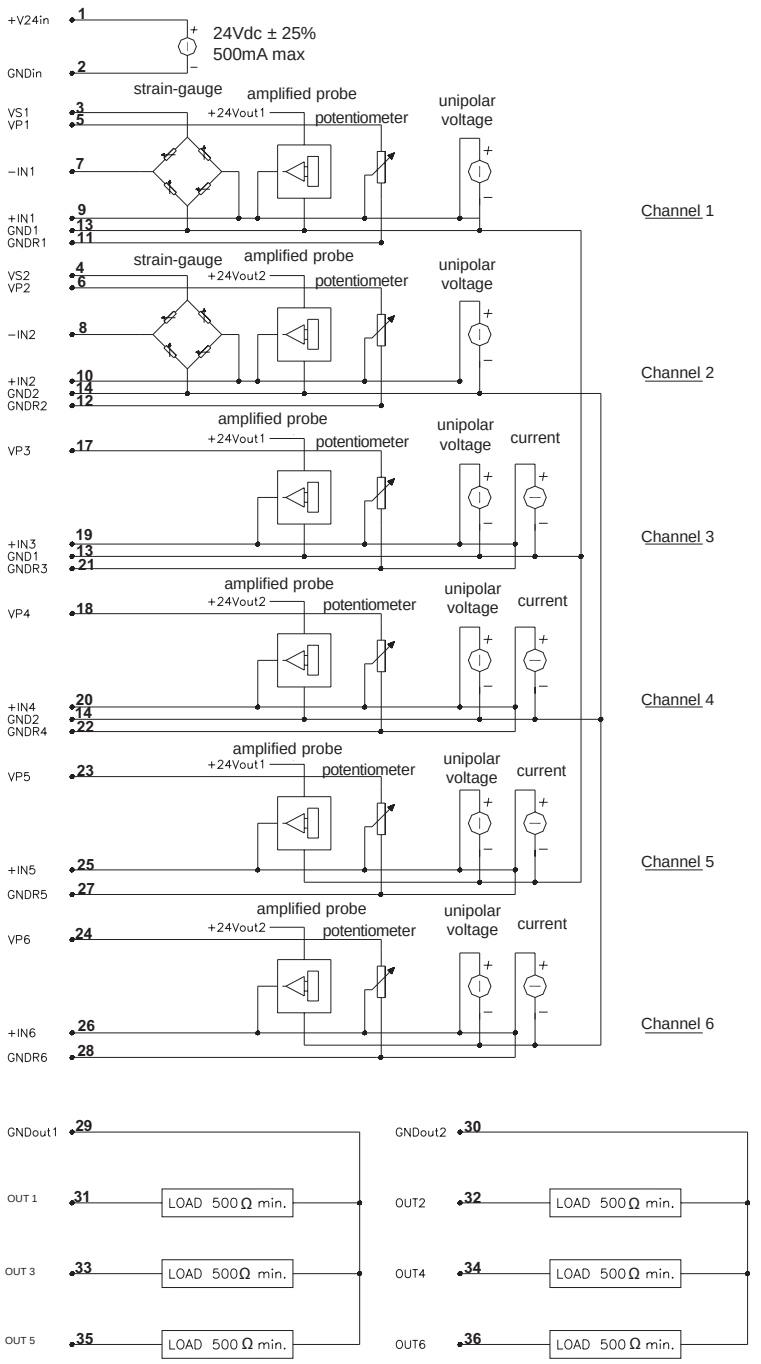
  current, use 2 pin shielded cable with 0,5mm max. cross-section. Do not attach lug. Connect shielding directly to the grounded plate and as close as possible to the module.

Bipolar analog outputs ±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 +24Vin
Yellow led POWER VS / VP
Red led INT
Green led RUN
Red led FAIL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
6 AI 16 Bit + 6 AO 16 Bit ± 10V
1 2
4 3
R-MA6
+V24in 1
GNDin 2
VS1 3
VS2 4
VP1 5
VP2 6
-IN1 7
-IN2 8
+IN1 9
+IN2 10
GNDR1 11
GNDR2 12
GND1 13
GND2 14
+24Vout1 15
+24Vout2 16
VP3 17
VP4 18
+IN3 19
+IN4 20
GNDR3 21
GNDR4 22
VP5 23
VP6 24
+IN5 25
+IN6 26
GNDR5 27
GNDR6 28
GNDout1 29
GNDout2 30
OUT1 31
OUT2 32
OUT3 33
OUT4 34
OUT5 35
OUT6 36

INSTALLATION AND CONNECTIONS



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

UL C US	Conformity UL508 File no. E198546
CE	The device conforms to European Union Directives 2004/108/CE and LVD 2006/95/CE 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 61161-2** (product standard)

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