

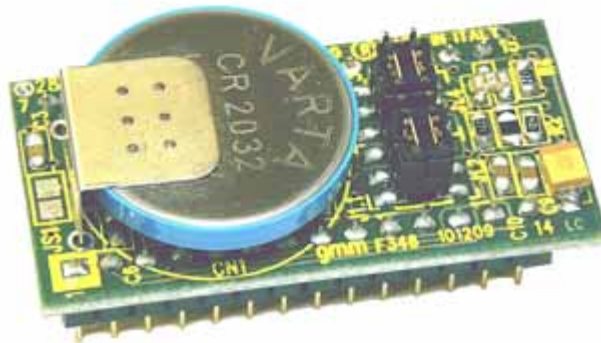
# GAB H844

grifo® Analog BLOCK Housing, 8 analog in, 4 opto in, 4 Relays out

# GMM F346

grifo® Mini Module C8051F346

## TECHNICAL MANUAL



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GAB H844+GMM F346

Rel. 5.00

Edition 19 October 2010

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# GAB H844

**grifo**<sup>®</sup> Analog BLOCK Housing, 8 analog in, 4 opto in, 4 Relays out

# GMM F346

**grifo**<sup>®</sup> Mini Module C8051F346

## TECHNICAL MANUAL

Couple between interface board of **Analog Block GAB H844** series and **Mini Modules** with **I51** core with **28** pins **GMM F346**, able to manage application that involves bot **Analog** and **Digital** signals and **USB** line communication.

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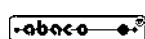
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For specific informations on the components mounted on the card, please refer to the Data Book of the builder or second sources.

### SYMBOLS DESCRIPTION

In the manual could appear the following symbols:



Attention: Generic danger



Attention: High voltage



Attention: ESD sensitive device

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## COUPLE RESOURCES

The **GAB H844 + GMM F346** couple has the following resources:

Max. value voltage of A/D converter (Vfs):	2,5 V or 3,3 V
Conditioned analog inputs (0÷20mA, 4÷20 mA, 0÷Vfs, 0÷4*Vfs):	8
Direct analog inputs (0÷Vfs):	4
Relays output:	4
Otpocoupled digital inputs:	4
Buffered TTL digital inputs:	4
TTL multifunction signals:	5
Asynchronous serial line RS 232:	YES
Asynchronous serial line TTL:	YES
Asynchronous serial line RS 422:	YES
Asynchronous serial line RS 485:	YES
Asynchronous serial line Current Loop:	YES
Synchronous serial line I2C BUS:	YES, hardware
CAN interface:	NO
USB interface:	YES
Real Time Clock:	YES

It is important to note that the previous list shows the maximum available resources and some of these ones are not usable in the same time, as described in following figures.

## COUPLE CONNECTIONS

In the following tables are reported connections of all user available signals on **GAB H844** related to **GMM F346** Mini Module. With these connections the user can manage all available resources either by hardware and by software.

When a more detailed documentation is required (connection diagrams, signals location on connectors, power supply, jumpers configuration, software management, etc.) please, see technical manuals of the two modules contained in the couple.

In the tables are present the following abbreviations and references:

N.C. = Not Connected

N.M. = Not Mounted

\*1 = to configure according to the performed connection.

GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	GMM F346 pin	GMM F346 configuration	GMM F346 signal name	Use on GMM F346
<b>CN1: Connector for relays outputs</b>							
CN1.1	OUT A1	-	15	15	-	P1.2, CEX1	-
CN1.2	COMMON A	-	-	-	-	-	-
CN1.3	OUT A2	-	13	13	-	P1.5, ECI	-
CN1.4	OUT B1	-	12	12	-	P3.0, C2D	-
CN1.5	OUT B2	-	11	11	-	P0.0, SCK	-
CN1.6	COMMON B	-	-	-	-	-	-
<b>CN3: Connector for optocoupled digital inputs</b>							
CN3.1	IN1	J35 in 1-2	16	16	-	P1.7, T1	-
CN3.2	IN2	J36 in 1-2	17	17	-	P1.6, T0	-
CN3.3	IN3	J37 in 1-2	18	18	-	P0.3, NSS, INT1	-
CN3.4	IN4	J38 in 1-2	19	19	-	P0.2, MOSI, INT0	-
CN3.5	COM1	-	-	-	-	-	-
<b>CN4: Connector for analog inputs</b>							
CN4.1	AIN1	-	27	27	-	P2.0, AIN0	-
CN4.2	AIN2	-	26	26	-	P2.1, AIN1	-
CN4.3	AIN3	-	25	25	-	P2.2, AIN2	-
CN4.4	AIN4	-	10	10	-	P2.3, AIN3	-
CN4.5	AIN5	J31 in 1-2	23	23	-	P2.4, AIN4	-
CN4.6	AIN6	J32 in 1-2	22	22	-	P2.5, AIN5	-
CN4.7	AIN7	J33 in 1-2	21	21	-	P2.6, AIN6	-
CN4.8	AIN8	J34 in 1-2	20	20	-	P2.7, AIN7	-
CN4.9	AGND	-	14	14	-	GND	-
-	Vref	J11 in 2-3	1	1	-	P0.7, Vref	-

FIGURE 1: CONNECTION TABLE (1 OF 5)



GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	GMM F346 pin	GMM F346 configuration	GMM F346 signal name	Use on GMM F346	
<b>CN5: Connector for asynchronous serial line in RS 232</b>								
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-	
CN5.2	-	J10 in 2-3	-	-	-	-	-	
CN5.3	TX RS232	J1, J9 N.C. J2, J3, J4 in 2-3 IC1, 2, 3, 4=N.M.	4	4	J1.1,2,3 in 2-3	TX RS232, TX TTL, P0.4	-	
CN5.4	-		-	-		-	-	-
CN5.5	RX RS232		3	3		RX RS232, RX TTL, P0.5	-	
CN5.6	-		-	-		-	-	-
CN5.7	GND	-	14	14	-	GND	-	
CN5.8	-	J11 in 2-3	-	-	-	-	-	
<b>CN5: Connector for asynchronous serial line in TTL</b>								
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-	
CN5.2	-	J10 in 2-3	-	-	-	-	-	
CN5.3	TX TTL	J1, J9 N.C. J2, J3, J4 in 2-3 IC1, 2, 3, 4=N.M.	4	4	J1.1,2,3 in 1-2	TX RS232, TX TTL, P0.4	-	
CN5.4	-		-	-		-	-	-
CN5.5	RX TTL		3	3		RX RS232, RX TTL, P0.5	-	
CN5.6	-		-	-		-	-	-
CN5.7	GND	-	14	14	-	GND	-	
CN5.8	-	J11 in 2-3	-	-	-	-	-	

FIGURE 2: CONNECTION TABLE (2 OF 5)



GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	GMM F346 pin	GMM F346 configuration	GMM F346 signal name	Use on GMM F346
<b>CN5: Connector for asynchronous serial line in RS 422</b>							
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-
CN5.2	-	J10 in 2-3	-	-	-	-	-
CN5.3	TX- RS422	J1, J9 *1	4	4	J1.1,2,3 in 1-2	TX RS232 , TX TTL , P0.4	-
CN5.4	TX+ RS422	J2, J3, J4 in 1-2					
CN5.5	RX+ RS422	J5 in 2-3	3	3			
CN5.6	RX- RS422	IC3, 4=N.M. IC1, 2=MAX 483					
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
-	DIR	-	24	24	-	P1.1 , CEX0	-
<b>CN5: Connector for asynchronous serial line in RS 485</b>							
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-
CN5.2	-	J10 in 2-3	-	-	-	-	-
CN5.3	-	J1, J9 *1	4	4	J1.1,2,3 in 1-2	TX RS232 , TX TTL , P0.4	-
CN5.4	-	J2, J3, J4 in 1-2					
CN5.5	RXTX+ RS485	J5 in 1-2	3	3			
CN5.6	RXTX- RS485	IC2, 3, 4=N.M. IC1=MAX 483					
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
-	DIR	-	24	24	-	P1.1 , CEX0	-

FIGURE 3: CONNECTION TABLE (3 OF 5)

GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	GMM F346 pin	GMM F346 configuration	GMM F346 signal name	Use on GMM F346
<b>CN5: Connector for asynchronous serial line in Current Loop</b>							
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-
CN5.2	-	J10 in 2-3	-	-	-	-	-
CN5.3	TX- C.L.	J1, J9 N.C.	4	4	J1.1,2,3 in 1-2	TX RS232 , TX TTL , P0.4	-
CN5.4	TX+ C.L.	J2, J3, J4 in 1-2 IC1, 2=N.M.	3	3			
CN5.5	RX+ C.L.	IC3=HP 4100					
CN5.6	RX- C.L.	IC4=HP 4200					
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
<b>CN6: Connector for multifunctions signals, CAN, etc.</b>							
CN6.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN6.2	MM PIN 21	J33 in 2-3	21	21	-	P2.6 , AIN6	-
CN6.3	MM PIN 8	J8 N.C	8	8	-	USB D-	-
CN6.4	/INTRTC	-	5	5	-	P0.1 , MOSI , /INTRTC	RTC+FRAM
CN6.5	MM PIN 9	J8 N.C.	9	9	-	USB D+	-
CN6.6	MM PIN 23	J31 in 2-3	23	23	-	P2.4 , AIN4	-
CN6.7	GND	-	14	14	-	GND	-
CN6.8	MM PIN 22	J32 in 2-3	22	22	-	P2.5 , AIN5	-

FIGURE 4: CONNECTION TABLE (4 OF 5)



GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	GMM F346 pin	GMM F346 configuration	GMM F346 signal name	Use on GMM F346
<b>CN7: Connector for USB interface</b>							
CN7.1	+5 Vdc USB	-	-	-	-	-	-
CN7.2	USB D-	-	8	8	-	USB D-	-
CN7.3	USB D+	-	9	9	-	USB D+	-
CN7.4	GND	-	14	14	-	GND	-
<b>CN8: Connector for I2C BUS line</b>							
CN8.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN8.2	SCL	-	6	6	-	P1.0, SCL	RTC+FRAM
CN8.3	SDA	-	7	7	-	P0.6, SDA	RTC+FRAM
CN8.4	GND	-	14	14	-	GND	-
<b>CN9: Connector for multifunction signals, TTL inputs</b>							
CN9.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN9.2	IN1 AUX	J35 in 2-3	16	16	-	P1.7, T1	-
CN9.3	IN2 AUX	J36 in 2-3	17	17	-	P1.6, T0	-
CN9.4	IN3 AUX	J37 in 2-3	18	18	-	P0.3, NSS, INT1	-
CN9.5	IN4 AUX	J38 in 2-3	19	19	-	P0.2, MOSI, INT0	-
CN9.6	N.C.	-	-	-	-	-	-
CN9.7	GND	-	14	14	-	GND	-
CN9.8	MM PIN 20	J34 in 2-3	20	20	-	P2.7, AIN7	-

FIGURE 5: CONNECTION TABLE (5 OF 5)