

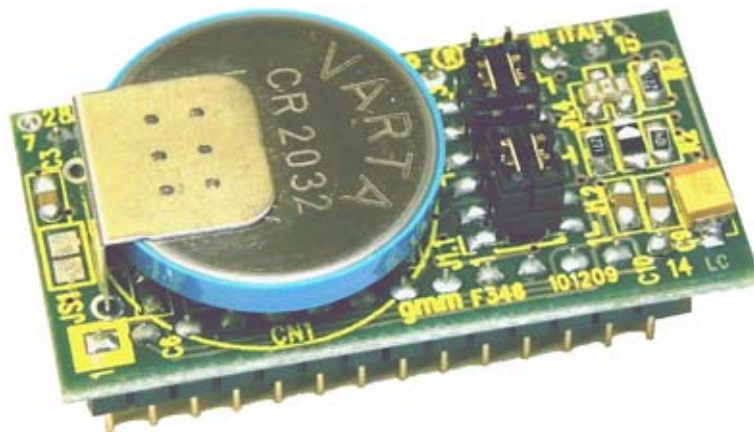
GMB HR84

grifo® Mini BLOCK Housing, 8 Opto Input, 4 Relay Outputs

GMM F346

grifo® Mini Module Silicon Lab. C8051F346

TECHNICAL MANUAL



grifo®

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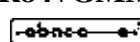
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GMB HR84+GMM F346

Rel. 5.00 Edition 13 September 2011

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TECHNICAL MANUAL

Couple between interface board of **Digital Block GMB HR84** series and **Mini Modules** with **8051 Core** with **28 pins GMM F346**, able to manage application that involves both **Digital** and **Analog Signals** and line **Communication** and **USB**.

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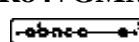
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For specific informations on the components mounted on the card, please refer to the Data Book of the builder or second sources.

SYMBOLS DESCRIPTION

In the manual could appear the following symbols:



Attention: Generic danger

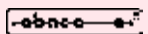


Attention: High voltage



Attention: ESD sensitive device

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GENERAL INDEX

COUPLE RESOURCES 1

COUPLE CONNECTIONS 1



INDICE DELLE FIGURE

FIGURE 1: CONNECTIONI TABLE (1 OF 7)	2
FIGURE 2: CONNECTIONI TABLE (2 OF 7)	3
FIGURE 3: CONNECTIONI TABLE (3 OF 7)	4
FIGURE 4: CONNECTIONI TABLE (4 OF 7)	5
FIGURE 5: CONNECTIONI TABLE (5 OF 7)	6
FIGURE 6: CONNECTIONI TABLE (6 OF 7)	7
FIGURE 7: CONNECTIONI TABLE (7 OF 7)	8

COUPLE RESOURCES

The **GMB HR84 + GMM F346** couple has the following resources:

Relay Outputs:	4
Optocoupled Inputs:	8
Optocoupled Inputs Type:	NPN , PNP, Powered
Multifunction Signals I/O TTL, A/D, PWM, CAN, etc.:	6
Analog Input (0÷Vfs, 0÷4*Vfs):	1
Max. Value Voltage of A/D Converter (Vfs):	2,5 V o 10,0 V
Serial Line in RS 232:	1
Serial Line in TTL:	1
Serial Line in RS 422:	1
Serial Line in RS 485:	1
Serial Line in Current Loop:	1
Serial Line in I2C BUS:	YES
CAN Interface:	NO
USB Interface:	YES
Lithium Battery:	YES
Real Time Clock:	YES
FRAM:	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 **GMB HR84** 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.

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	GMM F346 Pin	GMM F346 Configuration	GMM F346 Signal Name	Use on GMM F346
CN1: Connector for Relays Outputs							
CN1.1	OUT A1	-	23	23	-	P1.4	-
CN1.2	COMMON A	-	-	-	-	-	-
CN1.3	OUT A2	-	22	22	-	P1.5	-
CN1.4	OUT B1	-	21	21	-	P1.6	-
CN1.5	OUT B2	-	20	20	-	P1.7	-
CN1.6	COMMON B	-	-	-	-	-	-

FIGURE 1: CONNECTION TABLE (1 OF 7)

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	GMM F346 Pin	GMM F346 Configuration	GMM F346 Signal Name	Use on GMM F346	
CN2: Connector for Asynchronous Serial Line in RS 232								
CN2.1	+5 Vdc	-	28	28	-	+Vdc POW	-	
CN2.2	Vopto A	-	-	-	-	-	-	
CN2.3	TX RS232	J1, J9, N.C. J2, J3, J4 in 2-3 J5, J7, Indifferent	4	4	JUMPERS J1.1 = 2-3 J1.2 = 2-3 J1.3 = 2-3	PDO , TXD RS232 , TXD TTL	-	
CN2.4	-		-	-			-	-
CN2.5	RX RS232		3	3			-	-
CN2.6	-		-	-			-	-
CN2.7	GND	-	14	14	-	GND	-	
CN2.8	Vopto B	-	-	-	-	-	-	
CN2: Connector for Asynchronous Serial Line in TTL								
CN2.1	+5 Vdc	-	28	28	-	+Vdc POW	-	
CN2.2	Vopto A	-	-	-	-	-	-	
CN2.3	TX TTL	J1, J9, N.C. J2, J3, J4 in 2-3 J5, J7, Indifferent	4	4	JUMPERS J1.1 = 1-2 J1.2 = 1-2 J1.3 = 1-2	PDO , TXD RS232 , TXD TTL	-	
CN2.4	-		-	-			-	-
CN2.5	RX TTL		3	3			-	-
CN2.6	-		-	-			-	-
CN2.7	GND	-	14	14	-	GND	-	
CN2.8	Vopto B	-	-	-	-	-	-	

FIGURE 2: CONNECTION TABLE (2 OF 7)



Connettore Pin GMB HR84	Nome del Segnale GMB HR84	Configurazione GMB HR84	Pin ZC1	Pin GMM F346	Configurazione GMM F346	Nome del Segnale GMM F346	Utilizzo su GMM F346
CN2: Connector for Asynchronous Serial Line in RS 422							
CN2.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN2.2	Vopto A	-	-	-	-	-	-
CN2.3	TX- RS422	J1, J9, N.C. J2, J3, J4 in 1-2 J5 in 2-3	4	4	JUMPERS J1.1 = 1-2	PDO , TXD RS232 , TXD TTL	-
CN2.4	TX+ RS422	J7 (*)	3	3	J1.2 = 1-2	PD1 , RXD RS232 , RXD TTL	-
CN2.5	RX+ RS422	IC3, IC4=N.M.	3	3	J1.3 = 1-2		
CN2.6	RX- RS422	IC1, IC2=MAX 483					
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-
-	DIR	J7 in 1-2	11	11	-	P0.D	-
CN2: Connector for Asynchronous Serial Line in RS 485							
CN2.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN2.2	Vopto A	-	-	-	-	-	-
CN2.3	-	J1, J9, N.C. J2, J3, J4, J5 in 1-2	4	4	JUMPERS J1.1 = 1-2	PDO , TXD RS232 , TXD TTL	-
CN2.4	-	J7 (*)	3	3	J1.2 = 1-2	PD1 , RXD RS232 , RXD TTL	-
CN2.5	RXTX+ RS485	IC2, IC3, IC4=N.M.	3	3	J1.3 = 1-2		
CN2.6	RXTX- RS485	IC1 = MAX 483					
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-
-	DIR	J7 in 2-3	11	11	-	P0.D	-

FIGURE 3: CONNECTION TABLE (3 OF 7)

Connettore Pin GMB HR84	Nome del Segnale GMB HR84	Configurazione GMB HR84	Pin ZC1	Pin GMM F346	Configurazione GMM F346	Nome del Segnale GMM F346	Utilizzo su GMM F346
CN2: Connector for Asynchronous Serial Line in Current Loop							
CN2.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN2.2	Vopto A	-	-	-	-	-	-
CN2.3	TX- C.L.	J1, J9, N.C. J2, J3, Indifferent J4 in 1-2 J5, J7 Indifferent IC3=HP 4200 IC4=HP 4100	4	4	JUMPERS J1.1 = 1-2 J1.2 = 1-2 J1.3 = 1-2	PDO , TXD RS232 , TXD TTL PD1 , RXD RS232 , RXD TTL	-
CN2.4	TX+ C.L.						
CN2.5	RX+ C.L.		3	3			
CN2.6	RX- C.L.						
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-

FIGURE 4: CONNECTION TABLE (4 OF 7)

Connettore Pin GMB HR84	Nome del Segnale GMB HR84	Configurazione GMB HR84	Pin ZC1	Pin GMM F346	Configurazione GMM F346	Nome del Segnale GMM F346	Utilizzo su GMM F346
CN3: Connector for I2C BUS Line							
CN3.1	+5 Vdc	-	28	28	-	+Vdc POW	+5 Vdc
CN3.2	SCL	-	6	6	-	P1.0 , SCL	I2C BUS
CN3.3	SDA	-	7	7	-	P0.6 , SDA	I2C BUS
CN3.4	GND	-	14	14	-	GND	GND
CN7: Connector for USB							
CN7.1	-	-	-	-	-	-	-
CN7.2	USBL	-	8	8	-	USB-D(-)	USB
CN7.3	USBH	-	9	9	-	USB-D(+)	USB
CN7.4	GND	-	14	14	-	GND	GND

FIGURE 5: CONNECTION TABLE (5 OF 7)

Connettore Pin GMB HR84	Nome del Segnale GMB HR84	Configurazione GMB HR84	Pin ZC1	Pin GMM F346	Configurazione GMM F346	Nome del Segnale GMM F346	Utilizzo su GMM F346
CN4: Connector for Multifunction Signals I/O TTL, A/D, PWM, CAN, etc.							
CN4.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN4.2	MM PIN 12	-	12	12	-	P3.0	-
CN4.3	MM PIN 8	-	8	8	-	USB-D(-)	-
CN4.4	MM PIN 5	-	5	5	-	RTC/INT , P0.1	-
CN4.5	MM PIN 9	-	9	9	-	USB-D(+)	-
CN4.6	MM PIN 24 , PWM	-	24	24	-	P3.0	-
CN4.7	GND	-	14	14	-	GND	-
CN4.8	MM PIN 27 , A/D	-	27	27	-	P1.0 - AN0	-
CN5: Connector for Power Supply							
CN5.1	Vac or +Vdc	-	-	-	-	-	-
CN5.2	GND	-	14	14	-	GND	-

FIGURE 6: CONNECTION TABLE (6 OF 7)

Connettore Pin GMB HR84	Nome del Segnale GMB HR84	Configurazione GMB HR84	Pin ZC1	Pin GMM F346	Configurazione GMM F346	Nome del Segnale GMM F346	Utilizzo su GMM F346
CN6: Connector for Optocoupled Digital Inputs							
CN6.1	IN1	-	26	26	-	P1.1	-
CN6.2	IN2	-	25	25	-	P1.2, ECI	-
CN6.3	IN3	-	19	19	-	P2.0	-
CN6.4	IN4	-	18	18	-	P2.1	-
CN6.5	IN5	-	17	17	-	P2.2, T0	-
CN6.6	IN6	-	16	16	-	P2.3, T1	-
CN6.7	IN7	-	15	15	-	P0.3	-
CN6.8	IN8	-	13	13	-	P0.2	-
CN6.9	COMMON	-	-	-	-	-	-

FIGURE 7: CONNECTION TABLE (7 OF 7)