GMB HR84

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

CAN AVR

grifo® Mini Module Atmel AT90CAN128

TECHNICL MANUAL

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ITALIAN TECHNOLOGY

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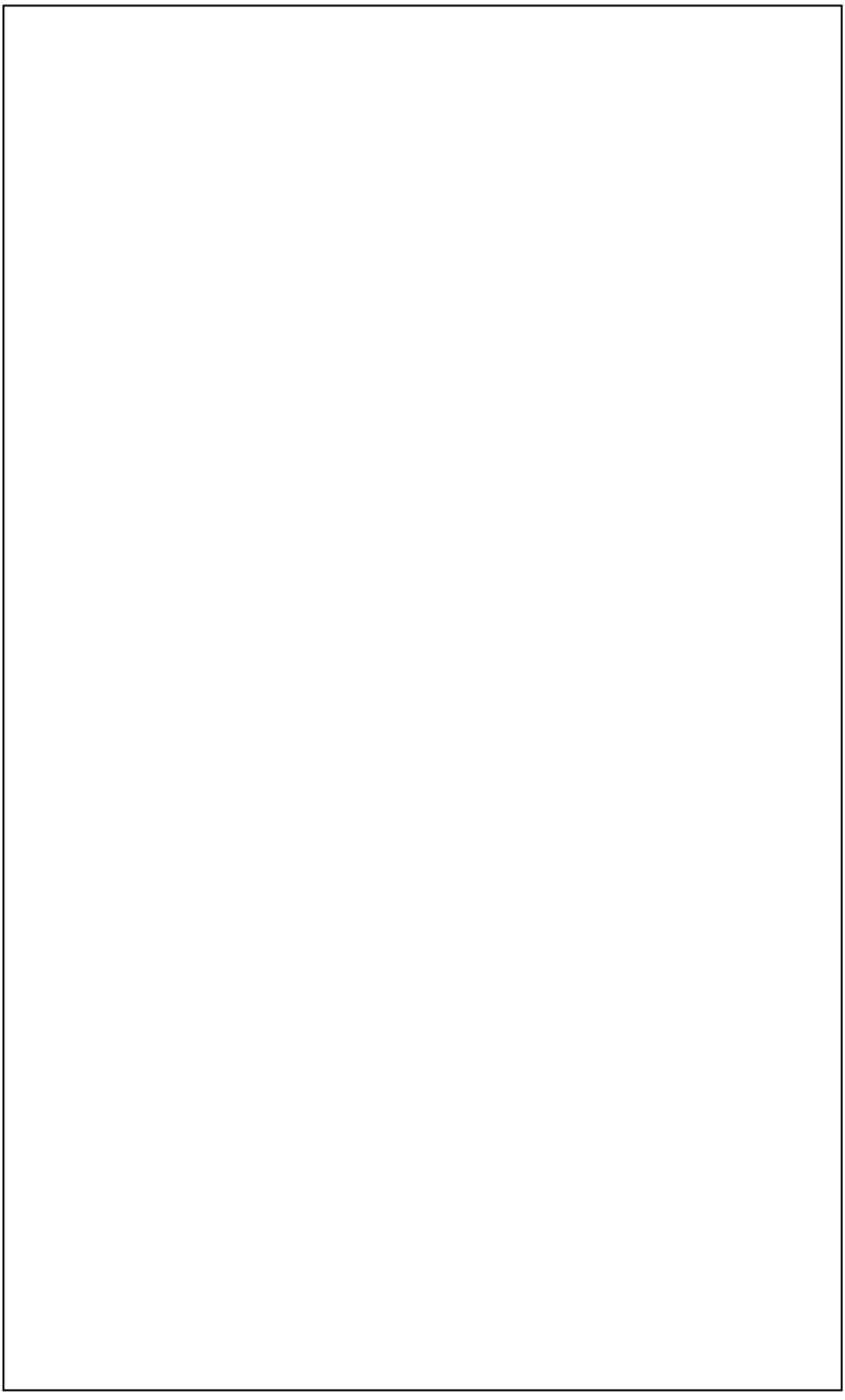
GMB HR84+CAN AVR Rel. 5.00 *Edition 16 August 2011*



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Couple between interface board of **Digital Block GMB HR84** seriesand **Mini Modules** with **AVR Core** with **28** pins **CAN AVR**, able to manage application that involves bot **Digital** an **Analog Signals. CAN,** and line **Communication**.

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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 **GMB HR84** + **CAN AVR** couple has the following resources:

Relay Outputs:	**4**
Optocoupled Inputsi:	**8**
Optocoupled Inputsi 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:	**YES**
USB Interface:	**NO**
Lithium Battery:	**YES**
Real Time Clock:	**YES**
RAM Backed:	**YES**

It is importatn 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 **CAN AVR 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 configurate according to the performed connection.

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
CN1: Connector for Relays Outputs							
CN1.1	OUT A1	-	18	18	-	P1.4	-
CN1.2	COMMON A	-	-	-	-	-	-
CN1.3	OUT A2	-	17	17	-	P1.5	-
CN1.4	OUT B1	-	16	16	-	P1.6	-
CN1.5	OUT B2	-	15	15	-	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	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
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	Dip Switch DSW 1,1 = ON	PDO , TXD RS232 , TXD TTL	-
CN2.4	-		-	-	DSW 1,2 = ON	-	-
CN2.5	RX RS232		3	3	DSW 1,3 = ON DSW 1,4 = OFF	PD1 , RXD RS232 , RXD TTL	-
CN2.6	-		-	-	DSW 1,5 = OFF	-	-
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	Dip Switch DSW 1,1 = OFF	PDO , TXD RS232 , TXD TTL	-
CN2.4	-		-	-	DSW 1,2 = OFF	-	-
CN2.5	RX TTL		3	3	DSW 1,3 = OFF DSW 1,4 = ON	PD1 , RXD RS232 , RXD TTL	-
CN2.6	-		-	-	DSW 1,5 = ON	-	-
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-

FIGURE 2: CONNECTION TABLE (2 OF 7)

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
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 J7 (*) IC3, IC4=N.M. IC1, IC2=MAX 483	4	4	Dip Switch DSW 1,1 = OFF DSW 1,2 = OFF DSW 1,3 = OFF DSW 1,4 = ON DSW 1,5 = ON	PDO , TXD RS232 , TXD TTL	-
CN2.4	TX+ RS422						
CN2.5	RX+ RS422		3	3		PD1 , RXD RS232 , RXD TTL	-
CN2.6	RX- RS422						
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-
-	DIR	J7 in 1-2	11	11	-	PD7 , OC2	-
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 J7 (*) IC2, IC3, IC4=N.M. IC1 = MAX 483	4	4	Dip Switch DSW 1,1 = OFF DSW 1,2 = OFF DSW 1,3 = OFF DSW 1,4 = ON DSW 1,5 = ON	PDO , TXD RS232 , TXD TTL	-
CN2.4	-						
CN2.5	RXTX+ RS485		3	3		PD1 , RXD RS232 , RXD TTL	-
CN2.6	RXTX- RS485						
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-
-	DIR	J7 in 2-3	11	11	-	PD7 , OC2	-

FIGURE 3: CONNECTION TABLE (3 OF 7)

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
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	Dip Switch DSW 1,1 = OFF DSW 1,2 = OFF DSW 1,3 = OFF DSW 1,4 = ON DSW 1,5 = ON	PDO , TXD RS232 , TXD TTL	-
CN2.4	TX+ C.L.						
CN2.5	RX+ C.L.		3	3		PD1 , RXD RS232 , RXD TTL	-
CN2.6	RX- C.L.						
CN2.7	GND	-	14	14	-	GND	-
CN2.8	Vopto B	-	-	-	-	-	-

FIGURE 4: CONNECTION TABLE (4 OF 7)

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
CN3: Connector for I2C BUS Line							
CN3.1	+5 Vdc	-	28	28	-	+Vdc POW	+5 Vdc
CN3.2	SCL	-	6	6	-	P2.0 , SCL	I2C BUS
CN3.3	SDA	-	7	7	-	P2.1 , SDA	I2C BUS
CN3.4	GND	-	14	14	-	GND	GND
CN7: Connector for USB -> NOT AVAILABLE							
CN7.1	-	-	-	-	-	-	-
CN7.2	USBL	-	-	-	-	-	-
CN7.3	USBH	-	-	-	-	-	-
CN7.4	GND	-	-	-	-	-	-

FIGURE 5: CONNECTION TABLE (5 OF 7)

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
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	-	P2.2	-
CN4.3	MM PIN 8	-	8	8	-	CAN-L / P4.0	CAN L
CN4.4	MM PIN 5	-	5	5	-	RTC/INT	-
CN4.5	MM PIN 9	-	9	9	-	CAN-H / P4.1	CAN H
CN4.6	MM PIN 24 , PWM	-	24	24	-	P1.3	-
CN4.7	GND	-	14	14	-	GND	-
CN4.8	MM PIN 27 , A/D	-	27	27	-	P1.0	-
CN5: Connector for Power Supply							
CN5.1	Vac oppure +Vdc	-	-	-	-	-	-
CN5.2	GND	-	14	14	-	GND	-

FIGURE 6: CONNECTION TABLE (6 OF 7)

GMB HR84 Connector Pin	GMB HR84 Signal Name	GMB HR84 Configuration	ZC1 Pin	CAN AVR Pin	CAN AVR Configuration	CAN AVR Signal Name	Use on CAN AVR
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	-	P3.2 , INT0	-
CN6.4	IN4	-	18	18	-	P3.3 , INT1	-
CN6.5	IN5	-	17	17	-	P3.4 , T0	-
CN6.6	IN6	-	16	16	-	P3.5 , T1	-
CN6.7	IN7	-	15	15	-	P3.6	-
CN6.8	IN8	-	13	13	-	P3.7	-
CN6.9	COMMON	-	-	-	-	-	

FIGURE 7: CONNECTION TABLE (7 OF 7)