GAB H844

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

CAN AVR

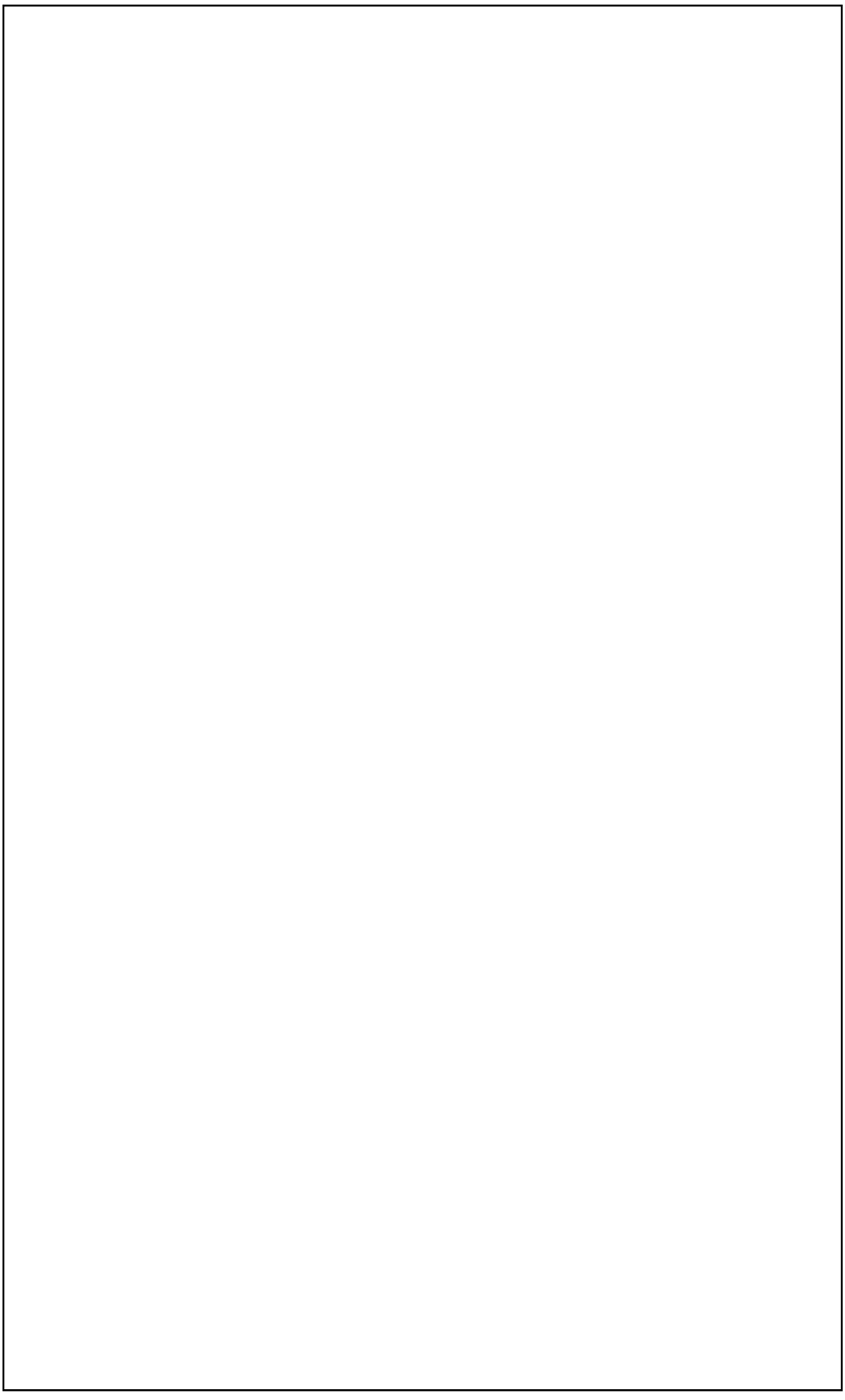
CAN grifo® Mini Module AVR AT90CAN128

TECHNICAL MANUAL

grifo®
ITALIAN TECHNOLOGY

Via dell' Artigiano, 8/6
40016 San Giorgio di Piano
(Bologna) ITALY
E-mail: grifo@grifo.it
http://www.grifo.it http://www.grifo.com
Tel. +39 051 892.052 (a.r.) FAX: +39 051 893.661

GAB H844+CAN AVR Rel. 5.00 *Edition 12 December 2008*



GAB H844

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

CAN AVR

CAN grifo® Mini Module AVR AT90CAN128

TECHNICAL MANUAL

Couple between interface board of **Analog Block GAB H844** series and **Mini Modules** with **AVR** core with **28** pins **CAN AVR**, able to manage application that involve bot **Analog** and **Digital** signals and **CAN** line communication.

grifo®
ITALIAN TECHNOLOGY

Via dell' Artigiano, 8/6
40016 San Giorgio di Piano
(Bologna) ITALY
E-mail: grifo@grifo.it
http://www.grifo.it http://www.grifo.com
Tel. +39 051 892.052 (a.r.) FAX: +39 051 893.661

GAB H844+CAN AVR Rel. 5.00 *Edition 12 December 2008*

DOCUMENTATION COPYRIGHT BY grifo®, ALL RIGHTS RESERVED

IMPORTANT

Although all the information contained herein have been carefully verified, grifo® assumes no responsability for errors that might appear in this document, or for damage to things or persons resulting from technical errors, omission and improper use of this manual and of the related software and hardware.
grifo® reserves the right to change the contents and form of this document, as well as the features and specification of its products at any time, without prior notice, to obtain always the best product.
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

Trade Marks

abaco, **GPC®**, grifo® : are trade marks of grifo®.
Other Product and Company names listed, are trade marks of their respective companies.

GENERAL INDEX

FIGURES INDEX

COUPLE RESOURCES

The **GAB H844** + **CAN AVR** couple has the following resources:

Max. value voltage of A/D converter (Vmv):	**2,5 V** or **5,0 V**
Conditioned analog inputs (0÷20mA, 4÷20 mA, 0÷Vmv, 0÷4*Vmv):	**5**
Direct analog inputs (0÷Vmv):	**4**
Relays output:	**4**
Otpocoupled digital inputs:	**4**
Buffered TTL digitali inputs:	**4**
TTL multifuncion signals:	**7**
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:	**YES**
USB interface:	**NO**
Real Time Clock:	**YES**

It is importatn to note that the previous list shows the maximum available resourced 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 all connections of all available signals for user of **GAB H844** respect to **CAN AVR** Mini Module. With these connections the user can manage all available resources both in hardware and in software.
If it needed a documentation more detailed, (connection diagram, signal 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 some abbreviation and reference:

N.C. = Not Connected
N.M. = Not Mounted
*1 = to configurate according to the performed connection.

GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	CAN AVR pin	CAN AVR configuration	CAN AVR signal name	Using on CAN AVR
CN1: Connector for relays outputs							
CN1.1	OUT A1	-	15	15	-	PB4 , OC2A	-
CN1.2	COMMON A	-	-	-	-	-	-
CN1.3	OUT A2	-	13	13	-	PB0 , /SS	-
CN1.4	OUT B1	-	12	12	-	PB1 , SCK	-
CN1.5	OUT B2	-	11	11	-	PE3 , OC3A , AIN1	-
CN1.6	COMMON B	-	-	-	-	-	-
CN3: Connector for optocoupled digital inputs							
CN3.1	IN1	J35 in 1-2	16	16	-	PE6 , INT6 , T3	-
CN3.2	IN2	J36 in 1-2	17	17	-	PD7 , T0	-
CN3.3	IN3	J37 in 1-2	18	18	-	PE5 , INT5 , OC3C	-
CN3.4	IN4	J38 in 1-2	19	19	-	PE4 , INT4 , OC3B	-
CN3.5	COM1	-	-	-	-	-	-
CN4: Connector for analog inputs							
CN4.1	AIN1	-	27	27	-	PF0 , ADC0	-
CN4.2	AIN2	-	26	26	-	PB7 , OC0A , OC1C	-
CN4.3	AIN3	-	25	25	-	PB6 , OC1B	-
CN4.4	AIN4	-	10	10	-	PE2 , XCK0 , AIN0	-
CN4.5	AIN5	J31 in 1-2	23	23	-	PF4 , ADC4 , TCK	-
CN4.6	AIN6	J32 in 1-2	22	22	-	PF5 , ADC5 , TMS	-
CN4.7	AIN7	J33 in 1-2	21	21	-	PF6 , ADC6 , TDO	-
CN4.8	AIN8	J34 in 1-2	20	20	-	PF7 , ADC7 , TDI	-
CN4.9	AGND	-	14	14	-	GND	-
-	Vref	J11 in 2-3	1	1	-	Vref	-

FIGURE 1: CONNECTION TABLE (1 OF 5)

GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	CAN AVR pin	CAN AVR configuration	CAN AVR signal name	Using on CAN AVR
CN5: Connector for asynchronous serial line in RS 232							
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	DSW1.1,2,3 ON DSW1.4,5 OFF	TxD0 RS232 , TxD0 TTL , PE1 , PDO	-
CN5.4	-		-	-		-	-
CN5.5	RX RS232		3	3		RxD0 RS232 , RxDO TTL , PE0 , PDI	-
CN5.6	-		-	-		-	-
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
CN5: Connector for asynchronous serial line in TTL							
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	DSW1.1,2,3 OFF DSW1.4,5 ON	TxD0 RS232 , TxD0 TTL , PE1 , PDO	-
CN5.4	-		-	-		-	-
CN5.5	RX TTL		3	3		RxD0 RS232 , RxDO TTL , PE0 , PDI	-
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	CAN AVR pin	CAN AVR configuration	CAN AVR signal name	Using on CAN AVR
CN5: Connector for asynchronous serial line in RS 422							
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-
CN5.2	-	J10 in 2-3	-	-	-	-	-
CN5.3	TX- RS422	J1, J9 *1 J2, J3, J4 in 1-2 J5 in 2-3 IC3, 4=N.M. IC1, 2=MAX 483	4	4	DSW1.1,2,3 OFF DSW1.4,5 ON	TxD0 RS232 , TxD0 TTL , PE1 , PDO	-
CN5.4	TX+ RS422						
CN5.5	RX+ RS422		3	3		RxD0 RS232 , RxDO TTL , PE0 , PDI	-
CN5.6	RX- RS422						
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
-	DIR	-	24	24	-	PB5 , OC1A	-
CN5: Connector for asynchronous serial line in RS 485							
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-
CN5.2	-	J10 in 2-3	-	-	-	-	-
CN5.3	-	J1, J9 *1 J2, J3, J4 in 1-2 J5 in 1-2 IC2, 3, 4=N.M. IC1=MAX 483	4	4	DSW1.1,2,3 OFF DSW1.4,5 ON	TxD0 RS232 , TxD0 TTL , PE1 , PDO	-
CN5.4	-						
CN5.5	RXTX+ RS485		3	3		RxD0 RS232 , RxDO TTL , PE0 , PDI	-
CN5.6	RXTX- RS485						
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
-	DIR	-	24	24	-	PB5 , OC1A	-

FIGURE 3: CONNECTION TABLE (3 OF 5)

GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	CAN AVR pin	CAN AVR configuration	CAN AVR signal name	Using on CAN AVR
CN5: Connector forasynchronous serial line in Current Loop							
CN5.1	+5 VdcF	-	28	28	-	+Vdc POW	-
CN5.2	-	J10 in 2-3	-	-	-	-	-
CN5.3	TX- C.L.	J1, J9 N.C. J2, J3, J4 in 1-2 IC1, 2=N.M. IC3=HP 4100 IC4=HP 4200	4	4	DSW1.1,2,3 OFF DSW1.4,5 ON	TxD0 RS232 , TxD0 TTL , PE1 , PDO	-
CN5.4	TX+ C.L.						
CN5.5	RX+ C.L.		3	3		RxD0 RS232 , RxDO TTL , PE0 , PDI	-
CN5.6	RX- C.L.						
CN5.7	GND	-	14	14	-	GND	-
CN5.8	-	J11 in 2-3	-	-	-	-	-
CN6: Connector for multifunction signals, CAN, etc.							
CN6.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN6.2	MM PIN 21	J33 in 2-3	21	21	-	PF6 , ADC6 , TDO	-
CN6.3	CANL	J8 *1	8	8	DSW2.1 ON DSW2.3 OFF	CANL , PB3 , MISO	-
	MM PIN 8	J8 N.C.			DSW2.1 OFF DSW2.3 ON	CANL , PB3 , MISO	-
CN6.4	/INTRTC	-	5	5	-	/INTRTC , PD4 , ICP1	RTC+SRAM
CN6.5	CANH	J8 *1	9	9	DSW2.2 ON DSW2.4 OFF	CANH , PB2 , MOSI	-
	MM PIN 9	J8 N.C.			DSW2.2 OFF DSW2.4 ON	CANH , PB2 , MOSI	-
CN6.6	MM PIN 23	J31 in 2-3	23	23	-	PF4 , ADC4 , TCK	-
CN6.7	GND	-	14	14	-	GND	-
CN6.8	MM PIN 22	J32 in 2-3	22	22	-	PF5 , ADC5 , TMS	-

FIGURE 4: CONNECTION TABLE (4 OF 5)

GAB H844 connector. pin	GAB H844 signal name	GAB H844 configuration	ZC1 pin	CAN AVR pin	CAN AVR configuration	CAN AVR configuration	Using on CAN AVR
CN7: Connector for USB interface -> NOT AVAILABLE							
CN8: Connector for I2C BUS line							
CN8.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN8.2	SCL	-	6	6	-	PD0 , INT0 , SCL	RTC+SRAM
CN8.3	SDA	-	7	7	-	PD1 , INT1 , SDA	RTC+SRAM
CN8.4	GND	-	14	14	-	GND	-
CN9: Connector for multifunction signals, TTL inputs							
CN9.1	+5 Vdc	-	28	28	-	+Vdc POW	-
CN9.2	IN1 AUX	J35 in 2-3	16	16	-	PE6 , INT6 , T3	-
CN9.3	IN2 AUX	J36 in 2-3	17	17	-	PD7 , T0	-
CN9.4	IN3 AUX	J37 in 2-3	18	18	-	PE5 , INT5 , OC3C	-
CN9.5	IN4 AUX	J38 in 2-3	19	19	-	PE4 , INT4 , OC3B	-
CN9.6	N.C.	-	-	-	-	-	-
CN9.7	GND	-	14	14	-	GND	-
CN9.8	MM PIN 20	J34 in 2-3	20	20	-	PF7 , ADC7 , TDI	-

FIGURE 5: CONNECTION TABLE (5 OF 5)