

MEDIBUS for Fabius GS/GS *premium/Tiro/plus/OS/MRI*

WARNING

For a full understanding of this software protocol, the user should carefully read this document as well as the Instructions for Use of the basic device.

Software Protocol
Software 1.n, 2.n, 3.n

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For Your Safety and that of Your Patients

Strictly follow the Instructions for Use

Any use of the software protocol requires full understanding and strict observation of the Instructions for Use of Fabius GS, Fabius GS *premium*, Fabius Tiro, Fabius plus, Fabius OS or Fabius MRI.

For general description of the protocol please refer to "Dräger RS 232 MEDIBUS Protocol Definition" (order-no. 9028258, 11th edition – September 2010)".

Port Specification

Connector	
Type	RS-232-C
COM1 (production prior to October 2004)	9-pin Sub D Male Shield on housing Pin 2 RXD Pin 3 TXD Pin 5 GND Galvanic Isolation 500 V
COM1 (production after September 2004)	9-pin Sub D Female Shield on housing Pin 2 TXD Pin 3 RXD Pin 5 GND Galvanic Isolation 500 V
COM2 (optional on production after September 2004)	
	9-pin Sub D Female Shield on housing Pin 2 TXD Pin 3 RXD Pin 5 GND Galvanic Isolation 1500 V
Port Configuration	
Baudrate	1200, 2400, 4800, 9600, 19200, 38400 Baud
Data-bits	7, 8
Start-bits	1
Stop-bits	1, 2
Parity	none, even, odd

Device Identification

ID-Number	8088
Name	'Fabius GS', 'Fabius GS <i>premium</i> ', 'Fabius Tiro', 'Fabius plus', 'Fabius OS', 'Fabius MRI'
MEDIBUS Version	4.00

Supported Commands and Data

Languages

Fabius will support a large set of languages. Generally, MEDIBUS will output alarm strings and text messages in the language that is currently selected for the display. All languages that use the 'ASCII/Western European' character set will be supported in MEDIBUS. When the selected display language uses a different character set, MEDIBUS alarm strings and text messages will be output in English.

Abbreviation	Language
bg	Bulgarian
cs	Czech
da	Danish
de	German
en	British English
es	Spanish
fr	French
hr	Croatian
hu	Hungarian
it	Italian
ja	Japanese
nl	Dutch
no	Norwegian
pl	Polish
pt	Portuguese
ro	Romanian
ru	Russian
sk	Slovak
sv	Swedish
tr	Turkish
US	American English
zh	Chinese

Applications

Fabius attempts to receive gas concentration data values from the connected device. In the case where it can receive valid expiratory Desflurane, CO₂, and N₂O percentage concentration values, it will use these values to enhance the accuracy of the Spirolog expiratory flow sensor.

Code	Data description	Unit	Format
AFH	Exp. Desflurane	%	XX.X
DBH	End Tidal CO ₂	%	XX.X
FCH	Exp. N ₂ O %	%	XXX_

Available Data

Current Measured Data, Low and High Alarm Limits, Real Time Traces, Device Settings, and Text Messages are available for Fabius device software version 1.39.3, 1.39.4, or 2.06 and up.

Transmitted commands

Code	Command specification
24H	Request Current Measured Data
30H	Do nothing (NOP)
51H	Initialize Communication (ICC)
52H	Request Device Identification

Processed and responded commands

Code	Command specification
24H	Request current Measured Data
25H	Request current LOW ALARM LIMITS
26H	Request current HIGH ALARM LIMITS
27H	Request current ALARMS
28H	Request current DATE and TIME
29H	Request current DEVICE SETTINGS
2AH	Request current TEXT MESSAGES
2EH	Request current ALARMS (code page 2)
30H	Do nothing (NOP)
51H	Initialize Communication (ICC)
52H	Request Device Identification
53H	Request Real Time Configuration
54H	Configure Real Time Transmission
55H	Stop Communication

Measured Data, Low and High Alarm Limits

The underscore character used in the format column is transmitted as an ASCII "space" character (20H).

A '*' ahead the format indicates that the value may be negative. In that case a '-' character will appear at the first space of the respective format.

Airway related Measured Data (M), Low (LL) and High (HL) Alarm Limits

Code	Data description	Unit	Format	M	LL	HL
73H	Mean Breathing Pressure	mbar ¹⁾	*_XX_	x	x	
74H	Plateau Pressure	mbar ¹⁾	*_XX_	x		
78H	PEEP Breathing Pressure	mbar ¹⁾	*_XX_	x		
7DH	Peak Breathing Pressure	mbar ¹⁾	*_XX_	x		
82H	Tidal Volume	L	X.XX	x		
B9H	Respiratory Minute Volume	L	XX.X	x	x	x
D7H	Respiratory Rate (Volume/Flow)	1/min	XX__	x		

1) 1 mbar = 1 cmH₂O

O₂ related Measured Data (M), Low (LL) and High (HL) Alarm Limits

Code	Data description	Unit	Format	M	LL	HL
F0H	Inspiratory O ₂	%	XXX_	x	x	x

Fresh gas related Measured Data (M), Low (LL) and High (HL) Alarm Limits

Not supported by Fabius plus.

Code	Data description	Unit	Format	M	LL	HL
DDH ¹⁾	N ₂ O Flow	mL/min	XXXX	x		
DEH ¹⁾	Air Flow	mL/min	XXXX	x		
E2H ¹⁾	O ₂ Flow	mL/min	XXXX	x		

1) Since software version 3.21: 9999 mL/min equals to 9999 mL/min or more.

Gas Analysis Data

Gas Analysis Data are available only on COM1 and only when this data is input on optional port COM2.

Code	Data description	Unit	Format	M	LL	HL
AEH	Insp. Desflurane	%	XX.X	x		
AFH	Exp. Desflurane	%	XX.X	x		
B0H	Insp. Sevoflurane	%	XX.X	x		
B1H	Exp. Sevoflurane	%	XX.X	x		
D5H	Frequency CO ₂	1/min	XX__	x		
DAH	Insp. CO ₂	%	XX.X	x		
DBH	Exp. CO ₂	%	XX.X	x		
E3H	Exp. CO ₂	kPa	XX.X	x		
E5H	Insp. CO ₂	mmHg	XX__	x		
E6H	Exp. CO ₂	mmHg	XX__	x		
E9H	Insp. Agent	%	XX.X	x		
EAH	Exp. Agent	%	XX.X	x		
F4H	Insp. Halothane	%	_X.X	x		
F5H	Exp. Halothane	%	_X.X	x		
F6H	Insp. Enflurane	%	_X.X	x		
F7H	Exp. Enflurane	%	_X.X	x		
F8H	Insp. Isoflurane	%	_X.X	x		
F9H	Exp. Isoflurane	%	_X.X	x		
FBH	Insp. N ₂ O	%	XXX_	x		
FCH	Exp. N ₂ O	%	XXX_	x		
FFH	Insp. CO ₂	kPa	XX.X	x		

Realtime Data

Code	Realtime data	Unit
00H	Airway Pressure	mbar ¹⁾
01H	Insp./exp. Flow	L/min
21H	Expiratory Flow	L/min

1) 1 mbar = 1 cmH₂O

Only the first four configured real time traces will be accepted. Further trace configurations will be disregarded.

'Start of Ventilator Inspiratory Cycle' sync command is supported.

Device Settings

Code	Device Setting	Unit	Format
04H	Inspiratory Tidal Volume	L	X.XXX
05H	Inspiratory Time	sec	XX.XX
07H	I:E I Part	no units	XXX.X
08H	I:E E Part	no units	XXX.X
0AH	Frequency IPPV	1/min	XXX.X
0CH	Intermittend PEEP	mbar ¹⁾	_XX.X
13H	Max. insp. Airway Pressure	mbar ¹⁾	XXX.X
27H	Insp. Pause/insp. Time	%	__XXX
29H	Flow Trigger Level	L/min	_XX.X
45H	Inspiratory pressure	mbar ¹⁾	XXX.X
4CH	Inspiratory Flow	L/sec	X.XXX
54H	Support Pressure	mbar ¹⁾	_XX.X

1) 1 mbar = 1 cmH₂O

Alarm Messages

Some alarm phrases contain abbreviations as follows:

ASCII Short Form	Meaning
\$&	LOW
"#	HIGH
'@	ALARM

The languages bg, ru, hu, ro, hr, cs, sk, zh and ja (see table on page 5) use the same string as US.

Alarm priorities given in parenthesis are as used before software version 3.20.

NOTE

At a baudrate setting of 9600 Baud and 10 active alarms, all alarms are sent upon request within less than 2 seconds.

Airway related Alarms

	Priority: 23/31	Apnea - No Vol. exhaled for 30 sec		
Code:	US:APNEA VOL	en: APNEA VOL	fr: APNEE SPIRO	es: APNEA VOL
0E	de: APNOE VOL	nl: APNOE VOL	pt: APNEIA VOL	pl: APNOE VOL
	sv: APNE VOL	it: APNEA - VOL	da: APNOE VOL	no: APNE VOL
	tr: APNE HAC			

	Priority: 23/31 ¹⁾	Apnea - Pressure absent for 15 sec		
Code:	US:APNEA PRES	en: APNEA PRES	fr:APNEE PRESS	es: APNEA PRES
0F	de: APNOE DRUCK	nl: APNOE DRUK	pt: APNEIA PRES	pl: APNOE CISN.
	sv: APNE TRYCK	it: APNEA - PRES	da: APNOE TRYK	no: APNE TRYKK
	tr: APNE BASINC			

1) Priority before software version 3.20: 24/31

	Priority: 31 ²⁾	Airway Pressure > High Limit		
Code: 10	US:PAW HIGH	en: PAW HIGH	fr: PRES RESP "#	es: PVR "#
	de: PAW "#	nl: PAW "#	pt: PRES V.A. "#	pl: PAW "#
	sv: PAW "#	it: PRES RESP "#	da: PAW "#	no: PAW "#
	tr: PAW "#			

2) Priority before software version 3.20: 27

	Priority: 22	Minute Volume < Low Limit		
Code: 19	US:MIN VOL LOW	en: MIN VOL LOW	fr: VOL MIN \$&	es: MIN VOL \$&
	de: AMV \$&	nl: MV \$&	pt: MIN VOL \$&	pl: MV \$&
	sv: MV \$&	it: VOL MIN \$&	da: MV \$&	no: MV \$&
	tr: DAK.HACMI \$&			

	Priority: 1	Volume Alarm Disabled		
Code: 5E	US:VOL ALRM OFF	en: VOL ALRM OFF	fr: ARR '@ SPIRO	es: '@ VOL DESC
	de: VOL '@ AUS	nl: VOL '@ UIT	pt: '@ VOL DES	pl: VOL '@ WYL.
	sv: VOL. '@ AV	it: '@ VOL OFF	da: VOL. '@ FRA	no: VOL '@ AV
	tr: VOL '@ KAPALI			

	Priority: 14 ³⁾	Minute Volume > High Limit		
Code: 9B	US:MIN VOL HIGH	en: MIN VOL HIGH	fr: VOL MIN "#	es: MIN VOL "#
	de: AMV "#	nl: MV "#	pt: VOL MIN "#	pl: MV "#
	sv: MINUTVOL "#	it: VOL MIN "#	da: MIN VOL "#	no: MV "#
	tr: DAK VOL "#			

3) Priority before software version 3.20: 13

	Priority: 4	Flow Calibration Necessary		
Code: A2	US:VOL CAL ?	en: VOL CAL ?	fr: CAL SPIRO ?	es: CAL FLUJO ?
	de: KALIB FLOW ?	nl: KALIB FLOW ?	pt: CAL FLUXO ?	pl: KALIB FLOW ?
	sv: KAL. FLODE?	it: CAL FLUSSO ?	da: FLOW KAL ?	no: FLOW KAL ?
	tr: HAC KAL ?			

	Priority: 25 ⁴⁾	Mean Airway Pressure < -2 mbar			
Code:	US:PAW NEGATIVE	en: PAW NEGATIVE	fr: PRES RESP <0	es: PVR NEGATIVO	
A3	de: PAW NEGATIV	nl: PAW NEGATIEF	pt: PVR NEGATIVO	pl: PAW UJEMNE	
	sv: PAW NEGATIV	it: PRES RESP <0	da: PAW NEGATIV	no: PAW NEGATIV	
	tr: PAW NEGATIF				

4) Priority before software version 3.20: 31

	Priority: 8	Pressure Measurement Inoperable			
Code:	US:PRESS ERR	en: PRESS ERR	fr: PRESS INOP	es: PRES INOP	
AD	de: DRUCK INOP	nl: DRUK INOP	pt: ERRO PRESS	pl: CISN. INOP	
	sv: TRYCKM. FEL	it: PRESS INOP	da: TRYKSENSOR ?	no: TRYKK FEIL	
	tr: BSNC ARIZA				

	Priority: 8	Flow Measurement Inoperable (Advisory)			
Code:	US:VOL ERR	en: VOL ERR	fr: SPIRO INOP	es: FLUJO INOP	
C1	de: FLOW INOP	nl: FLOW INOP	pt: ERRO FLUXO	pl: FLOW USZK.	
	sv: VOLYM FEL	it: FLUSSO INOP	da: VOLUMEN FEJL	no: FLOW FEIL	
	tr: HAC ARIZASI				

	Priority: 9 ⁵⁾	PEEP > high Limit			
Code:	US:PEEP HIGH	en: PEEP HIGH	fr: PEP "#	es: PEEP "#	
DA	de: PEEP "#	nl: PEEP "#	pt: PEEP "#	pl: PEEP "#	
	sv: PEEP "#	it: PEEP "#	da: PEEP "#	no: PEEP "#	
	tr: PEEP "#				

5) Priority before software version 3.20: 7

	Priority: 31	PEEP > Pressure Threshold for 15 sec			
Code:	US:CONT PRES	en:CONT PRES	fr: PRESS CONT	es: PRES CONT	
F8	de: KONT DRUCK	nl: CONT DRUK	pt: CONT PRES	pl: CISN STALE	
	sv: TRYCK KONT	it: PRES CONT	da: KONT. TRYK	no: KONT. TRYKK	
	tr: KONTR BASINC				

	Priority: 1 ⁶⁾	Pressure Apnea Alarm Disabled		
Code:	US:APN PRES OFF	en: APN PRES OFF	fr: ARR PRES APN	es: DESC APN PRE
F9	de: DRUCKAP AUS	nl: APN DRUK UIT	pt: APN PRES OFF	pl: CIS BEZD WYL
	sv: APNETRYCK AV	it: PRES APN DIS	da: APN.TRYK FRA	no: APNE TRYKK'@
	tr: APN BSNC KAP			

6) Priority before software version 3.20: 5

	Priority: 2 ⁷⁾	Pressure Threshold Low		
Code:	US:THRESHOLD LO	en: THRESHOLD LO	fr: SEUIL BAS	es: UMBRAL BAJO
FA	de: DRKSCH NIEDR	nl: GRENS LAAG	pt: THRESHOLD LO	pl: NIS PROG CIS
	sv: TROSKEL LAG	it: SOG PRES BAS	da: TAERSKEL LAV	no: TERSKEL LAV
	tr: BSNC ESG DUS			

7) Priority before software version 3.20: 7

Miscellaneous Alarms

	Priority 7/17 ¹⁾	Battery Low		
Code:	US:BATTERY LOW	en: BATTERY LOW	fr: BAT. VIDE	es: BAT. VACIA
4B	de: BATT. LEER	nl: BATT. LEEG	pt: BAT SEM CARG	pl: SLABA BAT.
	sv: BATTERI \$&	it: BATT SCARCIA	da: BATTERI \$&	no: BATTERI LAV
	tr: AKU BOS			

1) Priority before software version 3.20: 7/12

	Priority: 7 ²⁾	Battery Inoperable		
Code:	US:BATTERY ERR	en: BATTERY ERR	fr: BAT INOP	es: BAT INOP
4B	de: BAT INOP	nl: BAT INOP	pt: ERRO BAT	pl: USZK.BATERIA
	sv: BATTERIFEL	it: ERR BAT	da: BATTERIFEJL	no: BATTERI FEIL
	tr: AKU BOS			

2) Priority before software version 3.20: 1

Alarm Messages

	Priority: 1	Primary Speaker Failure			
Code: 65	US:SPEAKER FAIL	en: SPEAKER FAIL	fr: ALR SON INOP	es: ALARMA INOP	
	de: HUPE INOP	nl: AL.TOON INOP	pt: FALHA SONORA	pl: GL.GLOS.USZK	
	sv: LJUDFEL	it: SPEAKER FAIL	da: LYDFEJL	no: LYD FEIL	
	tr: HOPARL ARIZA				

	Priority: 7	Communication Error RS232 Port			
Code: 78 ³⁾	US:RS232COM ERR	en: RS232COM ERR	fr: ERR RS232	es: COM RS232 ?	
	de: RS232 KOM?	nl: RS232 KOM?	pt: ERRO RS232 (pl: RS232 KOM?	
	sv: KOMM. RS232	it: ERROR RS232			

3) up to SW 2.10a

	Priority: 1 ⁴⁾	Communication Error Port 1			
Code: 78	US:PORT 1 ERROR	en: PORT 1 ERROR	fr: ERR PORT 1	es: COM PORT 1 ?	
	de: PORT 1 KOM ?	nl: PORT 1 KOM ?	pt: ERRO PORT 1	pl: PORT 1 KOM ?	
	sv: KOMM. PORT 1	it: ERROR PORT 1	da: COM PORT 1 ?	no: COM 1 FEIL	
	tr: ARIZA PORT 1				

4) Priority before software version 3.20: 7

	Priority: 1 ⁵⁾	Communication Error Port 2			
Code: 79	US:PORT 2 ERROR	en: PORT 2 ERROR	fr: ERR PORT 2	es: COM PORT 2 ?	
	de: PORT 2 KOM ?	nl: PORT 2 KOM ?	pt: ERRO PORT 2	pl: PORT 2 KOM ?	
	sv: KOMM. PORT 2	it: ERROR PORT 2	da: COM PORT 2 ?	no: COM 2 FEIL	
	tr: ARIZA PORT 2				

5) Priority before software version 3.20: 7

	Priority: 7	Power Fail			
Code: EF	US:POWER FAIL	en: POWER FAIL	fr: PANNE SECT.	es: ALIM. ELECT	
	de: NETZAUSFALL	nl: NET UITVAL	pt: FALHA ELETR.	pl: BRAK ZASIL.	
	sv: INGEN STROM	it: INTERR ELETR	da: STR.FEJL	no: NETTSP. FEIL	
	tr: 220V YOK				

O2 related Alarms

	Priority: 31	Inspiratory Oxygen < low Limit (Alarm)		
Code: 08	US:% O2 LOW	en: % O2 LOW	fr: FI O2 \$\$	es: O2 INSP \$\$
	de: FI O2 \$\$	nl: FI O2 \$\$	pt: O2 INSP \$\$	pl: FI O2 \$\$
	sv: FIO2 \$\$	it: FI O2 \$\$	da: FI O2 \$\$	no: FIO2 \$\$
	tr: FI O2 \$\$			

	Priority: 13 ¹⁾	Inspiratory Oxygen > high Limit (Caution)		
Code: 37	US:% O2 HIGH	en: % O2 HIGH	fr: FI O2 "#	es: O2 INSP "#
	de: FI O2 "#	nl: FI O2 "#	pt: O2 INSP "#	pl: FI O2 "#
	sv: FIO2 "#	it: FI O2 "#	da: FIO2 "#	no: FIO2 "#
	tr: FI O2 "#			

1) Priority before software version 3.20: 12

	Priority: 6 ²⁾	Oxygen Analyzer Not Calibrated		
Code: 3B	US:CAL % O2 ?	en: CAL % O2 ?	fr: CAL FI O2 ?	es: CAL O2 INSP?
	de: KALIB FI O2?	nl: CALIB FI O2?	pt: CAL O2 INSP?	pl: KALIBR. O2?
	sv: FIO2 KALIBR	it: CALIB FI O2?	da: FIO2 KAL?	no: FIO2 KAL ?
	tr: CAL FI O2 ?			

2) Priority before software version 3.20: 4

	Priority: 8	O2 Measurement inoperable		
Code: BE	US:% O2 ERR	en: % O2 ERR	fr: FI O2 INOP	es: O2 INSP INOP
	de: FI O2 INOP	nl: FI O2 INOP	pt: ERRO O2 INSP	pl: FIO2 USZK.
	sv: FIO2 FEL	it: FI O2 INOP	da: FIO2 FEJL	no: FIO2 FEIL
	tr: FI O2 ERR			

Ventilator Related Alarms

	Priority: 21 ¹⁾	Fresh Gas Low			
Code: 11	US:FRESH GAS ?	en: FRESH GAS ?	fr: GAZ FRAIS ?	es: GAS FRESCO ?	
	de: FRISCHGAS ?	nl: VERSGAS ?	pt: GAS FRESCO?	pl: SWIEZY GAZ?	
	sv: FAERSKGAS?	it: GAS FRESCHI?	da: FRISK GAS?	no: FRISKGASS?	
	tr: TAZE GAZ ?				

1) Priority before software version 3.20: 11

	Priority: 30 ²⁾	O2 Supply Press Low (Warning)			
Code: 13	US:LO O2 SUPPLY	en: LO O2 SUPPLY	fr: ALIM O2 ?	es: OXIGENO ?	
	de: SAUERSTOFF ?	nl: ZUURSTOF ?	pt: OXIGENIO ?	pl: TLEN?	
	sv: O2-TRYCK LAG	it: MANCA O2	da: O2-FORSYN.?	no: O2 TILF. LAV	
	tr: LO O2 SUPPLY				

2) Priority before software version 3.20: 31

	Priority: 16 ³⁾	Expiratory Pressure > High Limit			
Code: 18	US:PRESS EXP HI	en: PRESS EXP HI	fr: PRESS EXP"#	es: PRES ESP "#	
	de: DRUCK EXSP"#	nl: DRUK EXP. "#	pt: PRES EXP "#	pl: CISN. EXP"#	
	sv: EXP.TRYCK "#	it: PRESS ESP "#	da: EKSSP.TRYK"#	no: EKSP.TRYKK"#	
	tr: PRESS EXP "#				

3) Priority before software version 3.20: 12

	Priority: 20 ⁴⁾	Ventilation APNEA			
Code: g3 ⁵⁾	US:APNEA VENT	en: APNEA VENT	fr: APNEE VENT	es: APNEA VENTIL	
	de: APNOE VENT	nl: APNEA VENT	pt: VENT APNEIA	pl: APNOE VENT	
	sv: APNE VENT.	it: APNEA VENT	da: APNOE VENT.	no: APNE VENT	
	tr: APNE VENT				

4) Priority before software version 3.20: 11

5) Code Page 2

	Priority: 28 ⁶⁾	Problems with Respirator		
Code: 9F	US:VENT ERR	en: VENT ERR	fr: VENTIL INOP	es: VENT INOP
	de: VENT INOP	nl: VENT. INOP	pt: ERRO VENT	pl: VENT USZK.
	sv: VENT. FEL	it: VENT INOP	da: VENT. FEJL	no: VENT. FEIL
	tr: VENT HATASI			

6) Priority before software version 3.20: 25

	Priority: 15 ⁷⁾	Check Expiration-Valve		
Code: B0	US:EXP-VALVE ?	en: EXP-VALVE ?	fr: VALVE EXP ?	es: VALVULA ESP?
	de: EXSP-V. INOP	nl: EXP VENTIEL?	pt: VALVULA EXP?	pl: EXSP-V.USZK.
	sv: EXP. VENTIL	it: VALVOLA ESP?	da: EKSSP.VENT.?	no: EKSP-VENTIL?
	tr: EXP-VALFI ?			

7) Priority before software version 3.20: 14

	Priority: 11 ⁸⁾	Time Limited Respiratory Volume		
Code: C3	US:TIME LIMITED	en: TIME LIMITED	fr: TEMPS LIMITE	es: TIEMPO LIMIT
	de: ZEIT LIMIT.	nl: TIJD GELIM.	pt: TEMPO LIMIT	pl: CZAS LIMIT.
	sv: TIDSBEGR. VO	it: TEMPO LIMIT.	da: TIDSBEGR.VOL	no: TIDSBEGRENS
	tr: ZAMAN LIMITI			

8) Priority before software version 3.20: 7

	Priority: 9	Pressure Limited Respiratory Volume		
Code: C4	US:PRESSURE LIM	en: PRESSURE LIM	fr: PRESS LIMITE	es: PRES LIMITDA
	de: DRUCK LIMIT.	nl: DRUK GELIM.	pt: PRES LIMITDA	pl: PRES. LIMIT.
	sv: TRYCKBEGR.	it: PRESS LIMIT.	da: TRYKBEGR.VOL	no: TRYKKBEGRENS
	tr: BASINC LIM			

	Priority: 31 ⁹⁾	No Fresh gas		
Code: F3 ¹⁰⁾	US:NO FRESHGAS	en: NO FRESHGAS	fr: GAZ FRAIS	es: GAS FRESCO
	de: KEIN FRISCHG	nl: GEEN VERSGAS	pt: GASES FRESC?	pl: BRAK SW. GAZ
	sv: FAERSKGAS	it: GAS FRESCHI	da: FRISK GAS	no: INGEN FRISKG
	tr: TAZE GAZ YOK			

9) Priority before software version 3.20: 30

10) Not supported by Fabius plus.

	Priority: 26	Check APL Valve		
Code:	US: APL VALVE ?	en: APL VALVE ?	fr: VALVE APL ?	es: VALVULA APL ?
FB	de: APL-VENTIL ?	nl: APL VALVE ?	pt: APL VALVE ?	pl: APL VALVE ?
	sv: APL VALVE ?	it: APL VALVE ?	da: APL VENTIL ?	no: APL VENTIL ?
	tr: APL VENTIL			

Text Messages

Code: 01	Ventilation Mode IPPV		
US: Ventilationmode CMV	en: Ventilationmode IPPV	fr: mode ventilatoire VC	
es: Modo de ventilacion IPPV	de: Beatmungsmode IPPV	nl: Ventilationmode CMV	
pt: Ventilationmode CMV	pl: Ventilationmode CMV	sv: Ventilationmode CMV	
it: Ventilationmode CMV	ru: Ventilationmode CMV	hu: Ventilationmode CMV	
ro: Ventilationmode CMV	hr: Ventilationmode CMV	cs: Ventilationmode CMV	
sk: Ventilationmode CMV	zh: Ventilationmode CMV	ja: Ventilationmode CMV	

Code: 06	Ventilation Mode SIMV		
US: Ventilationmode SIMV	en: Ventilationmode SIMV	fr: mode ventilatoire VACI	
es: Modo de ventilacion SIMV	de: Beatmungsmode SIMV	nl: beademings-mode SIMV	
pt: Modo de ventilaco SIMV	pl: Wentylacja typu SIMV	sv: Ventilationssaett SIMV	
it: Modi di ventilazione SIMV	ru: Ventilationmode SIMV	hu: Ventilationmode SIMV	
ro: Ventilationmode SIMV	hr: Ventilationmode SIMV	cs: Ventilationmode SIMV	
sk: Ventilationmode SIMV	zh: Ventilationmode SIMV	ja: Ventilationmode SIMV	
bg: Ventilationmode SIMV	da: Modus SIMV	no: Ventilasjonsmodus SIMV	
tr: Ventilasyon modu SIMV			

Code: 1E	Ventilator is in Standby-Mode	
US: Ventilator STANDBY	en: Ventilator STANDBY	fr: Ventilateur ATTENTE
es: Ventilador STANDBY	de: Ventilator STANDBY	nl: Ventilator STANDBY
pt: Ventilator STANDBY	pl: Wentylator STANDBY	sv: Ventilationsstaett STANDBY
it: Ventilatore STANDBY	ru: Ventilator STANDBY	hu: Lelegezteto STANDBY
ro: Ventilator STANDBY	hr: Ventilator STANDBY	cs: Ventilator STANDBY
sk: Ventilator STANDBY	zh: Ventilator STANDBY	ja: Ventilator STANDBY
bg: Ventilator STANDBY	da: Ventilator STANDBY	no: Ventilator STANDBY
tr: Ventilator STANDBY		

Code: 2B	Ventilation Mode Man./Spont.	
US: Ventilationmode man./spont.	en: Ventilationmode man./spont.	fr: mode ventilatoire Man./Spont.
es: Modo de ventilacion man./es-pont.	de: Beatmungsmode Man./Spont.	nl: Ventilationmode man./spont.
pt: Ventilationmode man./spont.	pl: Ventilationmode man./spont.	sv: Ventilationmode man./spont.
it: Ventilationmode man./spont.	ru: Ventilationmode man./spont.	hu: Ventilationmode man./spont.
ro: Ventilationmode man./spont.	hr: Ventilationmode man./spont.	cs: Ventilationmode man./spont.
sk: Ventilationmode man./spont.	zh: Ventilationmode man./spont.	ja: Ventilationmode man./spont.
bg: Ventilationmode man./spont.	da: Modus MAN/SPON	no: Ventilasjonsmodus Man/Spont
tr: Ventilasyon modu man./spont.		

Code: 2C	Selected Language	
US: English	en: English	fr: francais
es: espanol	de: deutsch	nl: Nederlands
pt: portugues	pl: Polski	sv: Svenska
it: Italiano	ru: Russian	hu: Magyar
ro: Romana	hr: Hrvatski	cs: Czechian
sk: Sloveneina	zh: English	ja: English
bg: English	da: dansk	no: norsk
tr: Turkish		

Code: 34	Ventilation Mode PCV	
US: Ventilationmode PCV	en: Ventilationmode PCV	fr: mode ventilatoire VPC
es: Modo de ventilacion PCV	de: Beatmungsmode PCV	nl: Ventilationmode PCV
pt: Ventilationmode PCV	pl: Ventilationmode PCV	sv: Ventilationmode PCV
it: Ventilationmode PCV	ru: Ventilationmode PCV	hu: Ventilationmode PCV
ro: Ventilationmode PCV	hr: Ventilationmode PCV	cs: Ventilationmode PCV
sk: Ventilationmode PCV	zh: Ventilationmode PCV	ja: Ventilationmode PCV

Code: 3E	Ventilation Mode PSV	
US: Mode PSV	en: Mode PSV	fr: mode AI
es: Modo PSV	de: Betriebsart PSV	nl: Mode PSV
pt: Modo PSV	pl: Wentylacja typu PSV	sv: Ventilationssaett PSV
it: Modo PSV	ru: Mode PSV	hu: PSV mod
ro: Mode PSV	hr: Modo PSV	cs: Modus PSV
sk: Modus PSV	zh: Mode PSV	ja: Mode PSV

Code: 59	Volume controlled Ventilation Mode	
US: Volume Mode	en: Volume Mode	fr: Mode en volume
es: Modo volumetrico	de: Volume Mode	nl: Volume Modus
pt: Modo volumetrico	pl: Tryb Objetosciowy	sv: Volymkontrollerad mode
it: Modalita Volumetrica	ru: Volume Mode	hu: Volume Mode
ro: Volume Mode	hr: Volume Mode	cs: Volume Mode
sk: Volume Mode	zh: Volume Mode	ja: Volume Mode
bg: Volume Mode	da: Volumen modus	no: Volumkontrollert modus
tr: Hacim modu		

Code: 5A	Pressure controlled Ventilation Mode	
US: Pressure Mode	en: Pressure Mode	fr: Mode en pression
es: Modo presiometrico	de: Pressure Mode	nl: Druk Modus
pt: Modo pressiometrico	pl: Tryb Cisnieniowy	sv: Tryckkontroll mode
it: Modalita Pressometrica	ru: Pressure Mode	hu: Pressure Mode
ro: Pressure Mode	hr: Pressure Mode	cs: Pressure Mode
sk: Pressure Mode	zh: Pressure Mode	ja: Pressure Mode
bg: Pressure Mode	da: Pressure modus	no: Trykkontrollert modus
tr: Basinc modu		

Code: 5B	Pressure Support Mode	
US:Pressure Support Mode	en: Pressure Support Mode	fr: Aide inspiratoire
es: Presion de soporte	de: Pressure Support Mode	nl: Pressure Support Modus
pt: Modo pressao de suporte	pl: Tryb Cisnieniowy z wspomaganie.	sv: Tryckunderstod mode
it: Modalita Pressure Support	ru: Pressure Support Mode	hu: Pressure Support Mode
ro: Pressure Support Mode	hr: Pressure Support Mode	cs: Pressure Support Mode
sk: Pressure Support Mode	zh: Pressure Support Mode	ja: Pressure Support Mode
bg: Pressure Support Mode	da: Pressure support modus	no: Trykkstotte modus
tr: Basinc destek modu		

Code: 5C	Pressure Support added to SIMV	
US:Pressure Support added	en: Pressure Support added	fr: Add. Aide inspiratoire
es: Presion de soporte anadida	de: Pressure Support aktiv	nl: Pressure Support Actief
pt: Pressao de suporte adicional da	pl: Tryb Cisn ze Wspom. dodana.	sv: Tryckunderstod tillagg
it: Modalita Pressure Support +	ru: Pressure Support added	hu: Pressure Support added
ro: Pressure Support added	hr: Pressure Support added	cs: Pressure Support added
sk: Pressure Support added	zh: Pressure Support added	ja: Pressure Support added
bg: Pressure Support added	da: Pressure support tilfojet	no: Trykkstotte aktiv
tr: Basinc destek aktif		

Occasional, unexplainable communication errors

If Fabius or a data acquisition system (DAS) connected to Fabius display unexplainable communication errors despite proper functioning of MEDIBUS, the error avoidance procedure (see page 24) should be implemented into the DAS.

Standard sequence

Fabius sends periodic requests for current text messages (command code 2AH) and current data (command code 24H). These 2 commands are sent once every minute. First, the current text messages are requested. After reception of the text message response, the current data request is sent:

:

<1 minute>

:

Fabius Text message request (2AH)

DAS Text message response

Fabius Data request (24H)

DAS Data response

:

<1 minute>

:

:

Communication error sequence

In a few installations, however, the standard sequence sometimes changes to a sequence that repeats one of the 2 following commands (2AH or 24H) 4 times every 10 seconds before sending an ICC-command (51H) issuing an communication error:

Fabius Text message request (2AH) or data request (24H)

DAS Text message or data response

:

<10 seconds>

:

Fabius Text message request (2AH) or data request (24H)

DAS Text message or data response

:

<10 seconds>

:

Fabius Text message request (2AH) or data request (24H)

DAS Text message or data response

:

<10 seconds>

:

Fabius Text message request (2AH) or data request (24H)

DAS Text message or data response

:

<10 seconds>

:

Fabius: ICC command (51h) and communication error

Error avoidance procedure

If the DAS receives the same command (24H or 2AH) 3 times consecutively and with a 10 second interval, the DAS must not display any communication error but reinitialize immediately, sending an ICC command (51H) to Fabius.

This error avoidance procedure should not be applied to the following commands of Fabius as they shall be processed as usual:

Initialize communication	ICC	[51H]
Stop communication	STOP	[55H]
No operation	NOP	[30H]
Realtime configuration changed		[56H]
Time changed		[49H]

Change History

Device Version	Data Type	Data Description	Code (hex)/ Codepage	Change Description
1.39.3 1.39.4	Base Revisions (Versions prior to 1.39.3 must be upgraded to 1.39.3 or higher)			
2.00 through 2.05	These SW versions must be upgraded to 2.06 or higher.			
2.06	Alarms	Check APL Valve	FB/1	new
	Real Time Data	Airway Pressure	00	new
		Expiratory Flow	01	new
		Expiratory Flow	21	new
2.10a	Text Messages	Ventilation Mode Pressure Support	3E	new
	Settings	Flow Trigger Level	29	new
		Inspiratory Flow	4C	new
		Support Pressure	54	new
Alarms	Apnea Ventilation	93/2	new	
2.21	Measured Data	Gas Analysis Data	all	new
	Alarms	Port 1 Error	78/1	Text changed
	Alarms	Port 2 Error	79/1	new
	Real Time Data	Insp./Exp. Flow	01	changed
2.22	no changes			
3.03	Settings	Inspiratory Time	05	new
	Text Messages	Ventilation Mode IPPV	01	removed
		Ventilation Mode PCV	34	removed
		Ventilation Mode PSV	3E	removed
		Ventilation Mode SIMV	06	new
		Volume Mode	59	new
		Pressure Mode	5A	new
		Pressure Support Mode	5B	new
Pressure Support added	5C	new		
3.10	Device Identification	Fabius GS premium added		new
3.11	no changes			


Change History




Device Version	Data Type	Data Description	Code (hex)/ Codepage	Change Description
3.20	Device Identification	Fabius plus added		new
	Alarms	Priorities changed	0F, 10, 9B, A3, DA, F9, FA, 4B, 78, 79, 37, 3B, 11, 13, 18, 93, 9F, B0, C3, F3	changed
3.21	Measured Data	Fresh gas flows	DD, DE, E2	Value 9999 transmitted for fresh gas flows \geq 9999 mL/min
3.22	no changes			
3.30	Device Identification	Fabius OS, Fabius MRI added		new
	Alarms, Text Messages	Languages bg, da, no, tr added		new
3.31	no changes			
3.32	no changes			
3.33	no changes			

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Directive 93/42/EEC
concerning Medical Devices

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