

MEDIBUS for Primus, Primus IE, Apollo and Pallas

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 1.n, 2.n, 3.n, 4.n
Software Protocol**

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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 this document and the Instructions for Use of Primus, Primus IE, Apollo, or Pallas, as appropriate.

For general description of the protocol please refer to "Dräger RS 232 MEDIBUS Protocol Definition" (order-no. 90 28 258, 10th edition – December 2007).

Port Specification

Connector

Type RS-232-C
9-pin Sub D (female)

Pins Shield on connector`s housing
Pin 2 TXD
Pin 3 RXD
Pin 5 GND

Galvanic Isolation 1.5 kV

Position rear side of Primus/Primus IE/Apollo/Pallas, labeled with:
COM 1
COM 2

Cable Requirements

Shield one-sided, connected on the Primus/Primus IE/Apollo/Pallas end

Length maximal 3 m (9.8 ft)

Port Configuration (both ports independent)

Baudrate 1200, 9600 Baud

Data-bits 8

Start-bits 1

Stop-bits 1

Parity even

Device Identification

Device ID-Number Name¹⁾	Primus 8056 'Primus'	Primus IE 8056 'Primus'	Apollo 8057 'Apollo'	Pallas 8057 'Apollo'
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1) MEDIBUS-Version 4.03

Supported Commands and Data

Languages

Alarm phrases and text messages are supported in the following languages:

Abbreviation	Language	Since device version
D	German	1.00
GB	British English	1.00
F	French	1.00
I	Italian	1.01
NL	Dutch	1.00
E	Spanish	1.00
P	Portuguese	1.01
PL	Polish	1.01
S	Swedish	1.00
N	Norwegian	1.01
DK	Danish	1.05
US	American English	3.00

Other device-internal languages use the MEDIBUS protocol in British English.

Data throughpassing

In case a Dräger device (e.g. PM8060 vitara) is connected to any MEDIBUS port all current Measured Data, Low and High Alarm Limits, Alarm Status (codepage 1 and 2), Device Settings and Text Messages by this device will be available on the other MEDIBUS ports. Please refer to connected devices' MEDIBUS specification for supported data.

Transmitted commands

Code	Command specification
30H	Do nothing (NOP)
49H	Time changed
51H	Initialize Communication (ICC)
52H	Request Device Identification
56H	Realtime Configuration changed

Processed and responded commands

Code	Command specification
24H	Request current DATA
25H	Request current LOW ALARM LIMITS
26H	Request current HIGH ALARM LIMITS
27H	Request current ALARMS (Codepage 1)
28H	Request current DATE & TIME
29H	Request current DEVICE SETTINGS
2AH	Request current TEXT MESSAGES
2EH	Request current ALARMS (Codepage 2)
30H	Do nothing (NOP)
4AH	Configure Data Response
51H	Initialize Communication (ICC)
52H	Request Device Identification
53H	Request Realtime Configuration
54H	Configure Realtime Transmission
55H	Stop Communication

Measured Data, Low and High Alarm Limits

Measured Data (M) Low (LL) and High (HL) Alarm Limits are shown in the following tables.

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.

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

Code	Data description	Unit	Format	M	LL	HL
1BH ¹⁾	Consumption Halothane (Liquid)	mL	XXXX	x		
1CH ¹⁾	Consumption Enflurane (Liquid)	mL	XXXX	x		
1DH ¹⁾	Consumption Isoflurane (Liquid)	mL	XXXX	x		
1EH ¹⁾	Consumption Desflurane (Liquid)	mL	XXXX	x		
1FH ¹⁾	Consumption Sevoflurane (Liquid)	mL	XXXX	x		
50H ²⁾	Insp. Halothane	kPa	_X.X	x	x	x
51H ²⁾	Exp. Halothane	kPa	_X.X	x		
52H ²⁾	Insp. Enflurane	kPa	_X.X	x	x	x
53H ²⁾	Exp. Enflurane	kPa	_X.X	x		
54H ²⁾	Insp. Isoflurane	kPa	_X.X	x	x	x
55H ²⁾	Exp. Isoflurane	kPa	_X.X	x		
56H ²⁾	Insp. Desflurane	kPa	XX.X	x	x	x
57H ²⁾	Exp. Desflurane	kPa	XX.X	x		
58H ²⁾	Insp. Sevoflurane	kPa	XX.X	x	x	x
59H ²⁾	Exp. Sevoflurane	kPa	XX.X	x		
5AH ²⁾	Insp. Agent	kPa	XX.X	x		
5BH ²⁾	Exp. Agent	kPa	XX.X	x		
5CH ²⁾	2nd Insp. Agent	kPa	XX.X	x		
5DH ²⁾	2nd Exp. Agent	kPa	XX.X	x		
ACH	Insp. MAC	-	_X.X	x		
ADH	Exp. MAC	-	_X.X	x		
AEH	Insp. Desflurane	%	XX.X	x	x	x

Code	Data description	Unit	Format	M	LL	HL
AFH	Exp. Desflurane	%	XX.X	x		
B0H	Insp. Sevoflurane	%	XX.X	x	x	x
B1H	Exp. Sevoflurane	%	XX.X	x		
E9H	Insp. Agent	%	XX.X	x		
EAH	Exp. Agent	%	XX.X	x		
EDH	Insp. 2nd Agent	%	XX.X	x		
EEH	Exp. 2nd Agent	%	XX.X	x		
F4H	Insp. Halothane	%	_X.X	x	x	x
F5H	Exp. Halothane	%	_X.X	x		
F6H	Insp. Enflurane	%	_X.X	x	x	x
F7H	Exp. Enflurane	%	_X.X	x		
F8H	Insp. Isoflurane	%	_X.X	x	x	x
F9H	Exp. Isoflurane	%	_X.X	x		
FBH	Insp. N ₂ O	%	XXX_	x		
FCH	Exp. N ₂ O	%	XXX_	x		

1) new since device version 3.20

2) new since device version 1.05

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

Code	Data description	Unit	Format	M	LL	HL
05H	Breathing Pressure	mbar	*_XX_		x	x
06H	Compliance	mL/mbar	XX.X	x		
6BH	Ambient pressure	mbar	XXXX	x		
73H	Mean Breathing Pressure	mbar	*_XX_	x		
74H	Plateau Pressure	mbar	*_XX_	x		
78H	PEEP Breathing Pressure	mbar	*_XX_	x		
7DH	Peak Breathing Pressure	mbar	*_XX_	x		
88H	Tidal Volume	mL	XXXX	x		
8BH ¹⁾	Insp. Tidal Volume	mL	XXXX	x		
B4H ²⁾	Respiratory Rate (Pressure)	1/min	XX_	x		
B9H	Respiratory Minute Volume	L	XX.X	x	x	x
BDH	Apnea Duration	sec	XXX_	x		

Code	Data description	Unit	Format	M	LL	HL
D7H ²⁾	Respiratory Rate (Volume/Flow)	1/min	XX__	x		
D9H ²⁾	Respiratory Rate (derived)	1/min	XX__	x		

1) new since device version 3.20

2) Since software version 4.10:

99 1/min equals to 99 1/min or more.

CO₂ related Measured Data (M) Low (LL) and High (HL) Alarm Limits

Code	Data description	Unit	Format	M	LL	HL
D5H ¹⁾	Respiratory Rate (CO ₂)	1/min	XX__	x		
DAH	Insp. CO ₂ in %	%	XX.X	x		x
DBH	Endtidal CO ₂ in %	%	XX.X	x	x	x
E3H	Endtidal CO ₂ in kPa	kPa	XX.X	x	x	x
E5H	Insp. CO ₂ mmHg	mmHg	XX__	x		x
E6H	Endtidal CO ₂ in mmHg	mmHg	XX__	x	x	x
FFH	Insp. CO ₂ kPa	kPa	XX.X	x		x

1) Since software version 4.10:

99 1/min equals to 99 1/min or more.

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

Code	Data description	Unit	Format	M	LL	HL
C4H	Delta O ₂ (Insp. O ₂ - Exp. O ₂)	%	*_XXX	x		
EFH	Exp. O ₂	%	XXX_	x		
F0H	Insp. O ₂	%	XXX_	x	x	x
64H ¹⁾	O ₂ Uptake	10mL/min	XXXX	x		

1) New since device version 2.02 but not in device version 3.0n

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.

SpO₂ related Measured Data (M) Low (LL) and High (HL) Alarm Limits

Code	Data description	Unit	Format	M	LL	HL
E1H	Pulse Rate (OXIMETER)	1/min	XXX_	x	x	x
EBH	Oxygen Saturation	%	XXX_	x	x	x
DFH	Pulse Rate (derived)	1/min	XXX_	x		

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

Code	Data description	Unit	Format	M	LL	HL
B2H	Leakage mL/min	mL/min	_XXX	x		

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

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

1) new since device version 3.20

2) Since software version 4.10:
9999 mL/min equals to 9999 mL/min or more.

Realtime Data

Code	Realtime data	Unit
00H	Airway Pressure	mbar
01H	Flow (insp./exp.)	L/min
02H	Oxygen Saturation Pulse (Pleth.)	% Full Scale
05H	O ₂ (insp./exp.)	%
06H	CO ₂	mmHg
07H	CO ₂	kPa
08H	CO ₂	%
0AH	Agent (insp./exp.)	%
0BH	Halothane (insp./exp.)	%
0CH	Enflurane (insp./exp.)	%
0DH	Isoflurane (insp./exp.)	%
0EH	Desflurane (insp./exp.)	%
0FH	Sevoflurane (insp./exp.)	%
2AH ¹⁾	Agent (insp./exp.)	kPa
2BH ¹⁾	Halothane (insp./exp.)	kPa
2CH ¹⁾	Enflurane (insp./exp.)	kPa
2DH ¹⁾	Isoflurane (insp./exp.)	kPa
2EH ¹⁾	Desflurane (insp./exp.)	kPa
2FH ¹⁾	Sevoflurane (insp./exp.)	kPa

1) new since device version 1.05

Realtime Data is available on Port "COM 1" only.

NOTE

Only the first three, configured realtime traces (see Dräger RS 232 MEDIBUS Protocol Definition, section "Configure Realtime Transmission Command") will be accepted. Further trace configurations will be disregarded.

Realtime Sync-Commands

Code	Argument	Meaning
C6H	C0H	Start of Ventilator Inspiratory Cycle

Realtime Sync-Commands are new since device version 2.00.

The sync-command "Start of Ventilator Inspiratory Cycle" is sent if flow realtime data (code 01H) are transmitted.

Device Settings

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

Code	Device Setting	Unit	Format
01H ¹⁾	O ₂	%	_XXX_
04H	Insp. Tidalvolume	L	X.XXX
05H	Inspiratory time	sec	_XX.X
0AH	Frequency	1/min	XXX.X
0CH	Intermittend PEEP	mbar	_XX.X
12H ²⁾	Pressure Support Pressure Δ PPS	mbar	__XX
13H	Max. insp. Airway Pressure	mbar	XXX.X
27H	Insp. Pause/insp. Time	%	__XXX
29H	Flow Trigger	L/min	_XX.X
2EH	Slope time (Ramp)	sec	_XX.X
2FH ¹⁾	Freshgas Flow	mL/min	XXXXX
42H ²⁾	Minimal Frequency	1/min	XXX.X
45H	Inspiratory pressure	mbar	__XX
4AH	Age	a	__XXX
4BH ²⁾	Weight	kg	__XXX

1) not in device Apollo and Pallas

2) new since device version 2.00

Alarm Messages

Some alarm phrases contain abbreviations as follows:

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

Alarm Priorities

Alarm priorities and classification in Primus/Primus IE/Apollo/Pallas:

Priority	Class
25 – 31	Warning
11 – 24	Caution
7 – 10	Advisory with tone
1 – 6	Advisory without tone

Please note that alarm priorities can change during operation. Alarm priorities may also vary from one Primus/Primus IE/Apollo/Pallas software version to the next.

Agent related Alarms

Codepage 1

Code: 09H	Priority: 10/24/31	Insp. Halothane > high Limit		
	D: FI HAL "#	GB: FI HAL "#	F: FI HAL "#	HAL INSP "#
	I: FI HALO "#	NL: FI HAL "#	E: HAL INSP "#	PL: FI HAL "#
	S: % HAL "#	N: FI HAL "#	DK: FI HAL "#	US: % HAL HIGH

Code: 0BH	Priority: 10/24/31	Insp. Enflurane > high Limit			
	D: FI ENF "#	GB:FI ENF "#	F: FI ENF "#	P: ENF INSP "#	
	I: FI ENFL "#	NL:FI ENF "#	E: ENF INSP "#	PL:FI ENF "#	
	S: % ENF "#	N: FI ENF "#	DK:FI ENF "#	US:% ENF HIGH	

Code: 0CH	Priority: 10/24/31	Insp. Isoflurane > high Limit			
	D: FI ISO "#	GB:FI ISO "#	F: FI ISO "#	P: ISO INSP "#	
	I: FI ISOF "#	NL:FI ISO "#	E: ISO INSP "#	PL:FI ISO "#	
	S: % ISO "#	N: FI ISO "#	DK:FI ISO "#	US:% ISO HIGH	

Code: 1FH	Priority: 10/24/31	Insp. Sevoflurane > high Limit			
	D: FI SEV "#	GB:FI SEV "#	F: FI SEV "#	P: SEV INSP "#	
	I: FI SEVO "#	NL:FI SEV "#	E: SEV INSP "#	PL:FI SEV "#	
	S: % SEV "#	N: % SEVO "#	DK:FI SEV "#	US:% SEV HIGH	

Code: 24H	Priority: 10/24/31	Insp. Desflurane > high Limit			
	D: FI DES "#	GB:FI DES "#	F: FI DES "#	P: DES INSP "#	
	I: FI DESF "#	NL:FI DES "#	E: DES INSP "#	PL:FI DES "#	
	S: % DES "#	N: FI DES "#	DK:FI DES "#	US:% DES HIGH	

Code: 29H	Priority: 16/15	Insp. Halothane < low Limit			
	D: FI HAL \$\$	GB:FI HAL \$\$	F: FI HAL \$\$	P: HAL INSP \$\$	
	I: FI HALO \$\$	NL:FI HAL \$\$	E: HAL INSP \$\$	PL:FI HAL \$\$	
	S: % HAL \$\$	N: FI HAL \$\$	DK:FI HAL \$\$	US:% HAL LOW	

Code: 2AH	Priority: 16/15	Insp. Enflurane < low Limit			
	D: FI ENF \$\$	GB:FI ENF \$\$	F: FI ENF \$\$	P: ENF INSP \$\$	
	I: FI ENFL \$\$	NL:FI ENF \$\$	E: ENF INSP \$\$	PL:FI ENF \$\$	
	S: % ENF \$\$	N: FI ENF \$\$	DK:FI ENF \$\$	US:% ENF LOW	

Code: 2BH	Priority: 16/15	Insp. Isoflurane < low Limit			
	D: FI ISO \$\$	GB:FI ISO \$\$	F: FI ISO \$\$	P: ISO INSP \$\$	
	I: FI ISOF \$\$	NL:FI ISO \$\$	E: ISO INSP \$\$	PL:FI ISO \$\$	
	S: % ISO \$\$	N: FI ISO \$\$	DK:FI ISO \$\$	US:% ISO LOW	

Alarm Messages

Code: 2CH	Priority: 16/15	Insp. Desflurane < low Limit		
	D: FI DES \$&	GB:FI DES \$&	F: FI DES \$&	P: DES INSP \$&
	I: FI DESF \$&	NL:FI DES \$&	E: DES INSP \$&	PL:FI DES \$&
	S: % DES \$&	N: FI DES \$&	DK:FI DES \$&	US:% DES LOW

Code: 32H	Priority: 16/15	Insp. Sevoflurane < low Limit		
	D: FI SEV \$&	GB:FI SEV \$&	F: FI SEV \$&	P: SEV INSP \$&
	I: FI SEVO \$&	NL:FI SEV \$&	E: SEV INSP \$&	PL:FI SEV \$&
	S: % SEV \$&	N: FI SEVO \$&	DK:FI SEV \$&	US:% SEV LOW

Code: 66H	Priority: 15	Mixed Agent detected		
	D: AGAS-GEMISCH	GB:MIXED AGENT	F: MIX HALOG	P: MIST.AGT.
	I: AGENTE MISTO	NL:AGAS GEMENGD	E: GAS-MEZCLA	PL:AGAS-MIESZ.
	S: MIX A-GAS	N: AGAS BLANDET	DK:BI. A-GAS	US:MIXED AGENT

Code: 67H	Priority: 1	Multi-Gas Monitor Device Failure		
	D: CO2/AGA INOP	GB:CO2/AGT ERR	F: ER CO2/HALOG	P: ERRO CO2/AGT
	I: CO2/AGT INOP	NL:CO2/ANG INOP	E: CO2/GAS INOP	PL:CO2/AGA USZK
	S: CO2/GAS FEL	N: CO2/AGT FEIL	DK:CO2/GAS FEJL	US:CO2/AGT ERR

Code: 69H	Priority: 1	N2O-Measurement inoperable		
	D: N2O INOP	GB:N2O ERR	F: N2O INOP	P: N2O INOP
	I: N2O INOP	NL:N2O INOP	E: N2O INOP	PL:N2O USZK.
	S: N2O FEL	N: N2O FEIL	DK:N2O FEJL	US:N2O ERR

Code: 6EH	Priority: 1	Agent-Measurement inoperable		
	D: AGAS INOP	GB:AGT ERR	F: HALOG INOP	P: AGT. INOP
	I: AGENTE INOP	NL:AGAS INOP	E: GAS A INOP	PL:AGAS USZK.
	S: A-GAS FEL	N: AGAS FEIL	DK:A-GAS FEJL	US:AGT ERR

Code: EEH	Priority: 7	Two Agents detected		
	D: 2. AGAS	GB:2nd AGENT	F: 2. HALOG	P: 2nd AGENT
	I: 2 AGEN ANEST	NL:2e AGAS	E: 2 AG. ANEST.	PL:2. AGAZ
	S: MIX A.GAS	N: 2nd AGENT	DK:ANDEN GAS	US:2nd AGENT

Codepage 2

Code: 3AH	Priority: 12	Insp. N2O high		
	D: FI N2O "#	GB:FI N2O "#	F: FI N2O "#	P: FI N2O "#
	I: FI N2O "#	NL:FI N2O "#	E: N2O INSP "#	PL:N2O WD."#
	S: INSP N2O "#	N: HOY FI N2O	DK:FI N2O "#	US:% N2O HIGH

Code: A2H	Priority: 31	Exp.Hal.>high limit		
	D: EXSP HAL "#	GB:EXP. HAL "#	F: EXP. HAL "#	P: HAL EXP. "#
	I: EXP. HALO "#	NL:EXP. HAL "#	E: HAL EXP. "#	PL:EXP. HAL "#
	S: EXP. HAL "#	N: EXP. HAL "#	DK:EXP. HAL "#	US:EXP. HAL HIGH

Code: A3H	Priority: 31	Exp.Enf.>high limit		
	D: EXSP. ENF "#	GB:EXP. ENF "#	F: EXP. ENF "#	P: ENF EXP. "#
	I: EXP. ENFL "#	NL:EXP. ENF "#	E: ENF EXP. "#	PL:EXP. ENF "#
	S: EXP. ENF "#	N: EXP. ENF "#	DK:EXP. ENF "#	US:EXP. ENF HIGH

Code: A4H	Priority: 31	Exp.Iso.>high limit		
	D: EXSP. ISO "#	GB:EXP. ISO "#	F: EXP. ISO "#	P: ISO EXP. "#
	I: EXP. ISOF "#	NL:EXP. ISO "#	E: ISO EXP. "#	PL:EXP. ISO "#
	S: EXP. ISO "#	N: EXP. ISO "#	DK:EXP. ISO "#	US:EXP. ISO HIGH

Code: A5H	Priority: 31	Exp.Des.>high limit		
	D: EXSP. DES "#	GB:EXP. DES "#	F: EXP. DES "#	P: DES EXP. "#
	I: EXP. DESF "#	NL:EXP. DES "#	E: DES EXP. "#	PL:EXP. DES "#
	S: EXP. DES "#	N: EXP. DES "#	DK:EXP. DES "#	US:EXP. DES HIGH

Code: A6H	Priority: 31	Exp.Sev.>high limit		
	D: EXSP. SEV "#	GB:EXP. SEV "#	F: EXP. SEV "#	P: SEV EXP. "#
	I: EXP. SEVO "#	NL:EXP. SEV "#	E: HAL SEV. "#	PL:EXP. SEV "#
	S: EXP. SEV "#	N: EXP. SEVO"#	DK:EXP. SEV "#	US:EXP. SEV HIGH

Code: D2H ¹⁾	Priority: 14/7	Calculated MAC value decreasing		
	D: MAC NIEDRIG?	GB:MAC LOW?	F: MAC BAS?	P: VALORMACBAIX
	I: MAC BASSO?	NL: CONTR. MAC	E: VALOR MAC?	PL: NISKIE MAC?
	S: MAC LAG?	N: MAC LAV ?	DK: MAC LAV	US:MAC LOW?

1) new since device version 4.00

Airway related Alarms

Codepage 1

Code: 00H	Priority: 24/31	Apnea combined source			
	D: APNOE	GB:APNEA	F: APNEE	P: APNEIA	
	I: APNEA	NL:APNOE	E: APNEA	PL:APNOE	
	S: APNE	N: APNEA	DK:APNOE	US:APNEA	

Code: 0EH	Priority: 24/31	Apnea - No Volume exhaled for 30 Seconds			
	D: APNOE VOL	GB:APNEA VOL	F: APNEE SPIRO	P: APNEIA VOL	
	I: APNEA – VOL	NL:APNOE VOL	E: APNEA VOL	PL:APNOE VOL	
	S: APNE VOL	N: APNEA VOL	DK:APNOE VOL	US:APNEA VOL	

Code: 0FH	Priority: 24/31	Apnea - Pressure absent for 15 Seconds			
	D: APNOE DRUCK	GB:APNEA PRES	F: APNEE PRESS	P: APNEIA PRES	
	I: APNEA – PRES	NL:APNOE DRUK	E: APNEA PRES	PL:APNOE CISP.	
	S: APNE TRYCK	N: APNEA TRYKK	DK:APNOE TRYK	US:APNEA PRES	

Code: 10H	Priority: 27	Airway Pressure > high Limit			
	D: PAW "#	GB:PAW "#	F: PRES RESP "#	P: PRES V.A. "#	
	I: PRES RESP "#	NL:PAW "#	E: PVR "#	PL:PAW "#	
	S: PAW "#	N: LVT "#	DK:PAW "#	US:PAW HIGH	

Code: 19H	Priority: 22	Minute Volume < low Limit			
	D: AMV \$&	GB:MIN VOL \$&	F: VOL MIN \$&	P: MIN VOL \$&	
	I: VOL MIN \$&	NL:MV \$&	E: MIN VOL \$&	PL:MV \$&	
	S: MV \$&	N: MIN VOL \$&	DK:MV \$&	US:MIN VOL LOW	

Code: 9BH	Priority: 13	Minute Volume > high Limit			
	D: AMV "#	GB:MIN VOL "#	F: VOL MIN "#	P: VOL MIN "#	
	I: VOL MIN "#	NL:MV "#	E: MIN VOL "#	PL:MV "#	
	S: MINUTVOL "#	N: MIN VOL "#	DK:MIN VOL "#	US:MIN VOL HIGH	

Code: A3H	Priority: 30	Mean Airway Pressure < -2 mbar			
	D: PAW NEGATIV	GB:PAW NEGATIVE	F: PRES RESP <0	P: PVR NEGATIVO	
	I: PRES RESP <0	NL:PAW NEGATIEF	E: PVR NEGATIVO	PL:PAW UJEMNE	
	S: PAW NEGATIV	N: NEGATIVT LVT	DK:PAW NEGATIV	US:PAW NEGATIVE	

Code: ACH	Priority: 1	Minute volume alarms off			
	D: AMV '@ AUS	GB:MV '@ OFF	F: ARRET '@ VOL	P: @ VM DES	
	I: '@ VM OFF	NL:AMV '@ UIT	E: '@ M.V. DESC	PL:MV '@WYL.	
S: MV '@ AV	N: MV '@ AV	DK:MV '@ FRA	US:MV ALRM OFF		

Code: ADH	Priority: 8	Pressure Measurement inoperable			
	D: DRUCK INOP	GB:PRESS ERR	F: PRESS INOP	P: ERRO PRESS	
	I: PRESS INOP	NL:DRUK INOP	E: PRES INOP	PL:CISN. INOP	
S: TRYCKM. FEL	N: TRYKK FEIL	DK:TRYKSENSOR ?	US: PRESS ERR		

Code: BAH	Priority: 26	Airway Temperature > high Limit			
	D: AW-TEMP "#	GB:AW-TEMP "#	F: TEMP-AW "#	P: TEMP VA "#	
	I: TEMP. GAS "#	NL:AW-TEMP "#	E: TEMP VR "#	PL:AW-TEMP "#	
S: INSP.TEMP"#	N: LV-TEMP "#	DK:INSP.TP. "#	US:AW-TEMP HIGH		

Code: C1H	Priority: 8	Flow Measurement inoperable			
	D: FLOW INOP	GB:VOL ERR	F: SPIRO INOP	P: ERRO FLUXO	
	I: FLUSSO INOP	NL:FLOW INOP	E: FLUJO INOP	PL:FLOW USZK.	
S: VOLYM FEL	N: FLOW FEIL	DK:VOLUMEN FEJL	US:VOL ERR		

Code: DAH 1)	Priority: 14	PEEP > high Limit			
	D: PEEP "#	GB:PEEP "#	F: PEP "#	P: PEEP "#	
	I: PEEP "#	NL:PEEP "#	E: PEEP "#	PL:PEEP "#	
S: PEEP "#	N: PEEP "#	DK:PEEP "#	US:PEEP HIGH		

1) new since device version 2.00

Code: F8H ¹⁾	Priority: 31	PEEP > Pressure Threshold for 15 sec			
	D: KONT DRUCK	GB:CONT PRES	F: EXCES PRESS	P: PRESS CONT	
	I: PRESS. CONT	NL:PEEP>Pmax	E: UMB. PR. >15 S	PL:CISN KONST	
S: KONT. HOG. PAW	N: KONTR TRYKK	DK:CONT PRES	US:CONT PRES		

1) new since device version 3.00

Codepage 2

Code: A8H	Priority: 8	Insp. Flow sensor inoperable		
	D: IN VOL INOP	GB:INSP VOL ERR	F: CAPT.FL.INOP	P: ERR.FLUX.INS
	I: SEN.FLU.INOP	NL:INSP VOL ERR	E: FALL VOL INS	PL:USZK.POM. TV
S: INSP.VOL.FEL	N: INSP.VOL.ERR	DK:INSPVOL FEJL	US:INSP VOL ERR	

Code: 67H ¹⁾	Priority: 1	Minute volume low alarm off		
	D: MV TIEF'@AUS	GB:MV LOW'@ OFF	F: ARRET '@B.VL	P: '@VM BAIXOFF
	I: '@VM BAS.OFF	NL:MV LAAG'@UIT	E: '@VM BAJ.OFF	PL:PM NISK.WYL.
S: MV UNDR'E@AV	N: MV LAV '@ AV	DK:MV LAV'@ FRA	US:MV LOW OFF	

1) new since device version 4.00

CO2 related Alarms

Codepage 1

Code: 0DH	Priority: 10/24/31	Apnea - No CO2 Fluct. for 30 Seconds		
	D: APNOE CO2	GB:APNEA CO2	F: APNEE CO2	P: APNEIA CO2
	I: APNEA - CO2	NL:APNOE CO2	E: APNEA CO2	PL:APNOE CO2
S: APNE CO2	N: APNEA CO2	DK:APNOE CO2	US:APNEA CO2	

Code: 27H	Priority: 18	Endtidal CO2 < low Limit		
	D: ET CO2 \$&	GB:ET CO2 \$&	F: ET CO2 \$&	P: CO2 ET\$&
	I: ET CO2 \$&	NL:ET CO2 \$&	E: CO2 FE \$&	PL:ET CO2 \$&
S: ET CO2 \$&	N: ET CO2 \$&	DK:ET CO2 \$&	US:ET CO2 LOW	

Code: 28H	Priority: 18	Endtidal CO2 > high Limit		
	D: ET CO2 "#	GB:ET CO2 "#	F: ET CO2 "#	P: CO2 ET "#
	I: ET CO2 "#	NL:ET CO2 "#	E: CO2 FE "#	PL:ET CO2 "#
S: ET CO2 "#	N: ET CO2 "#	DK:ET CO2 "#	US:ET CO2 HIGH	

Code: 3CH	Priority: 11	Inspiratory CO2 > high Limit			
	D: INSP CO2 "#	GB:INSP CO2 "#	F: CO2 INSP "#	P: CO2 INSP "#	
	I: CO2 INSP "#	NL:INSP CO2 "#	E: CO2 INSP "#	PL:INSP CO2 "#	
	S: INSP.CO2 "#	N: INSP CO2 "#	DK:INSP.CO2 "#	US:INSP CO2 HI	

Code: 3DH	Priority: 7	CO2 Patient Sensor Line blocked			
	D: CO2 LEITUNG?	GB:CO2 LINE BLK	F: TUYAU CO2 ?	P: LINHA CO2 ?	
	I: LINEA CO2 ?	NL:CO2 LEIDING?	E: TOMA CO2 ?	PL:BLOK. CO2	
S: CO2-SLANG?	N: CO2 SLANGE?	DK:CO2LINE BLOK	US:CO2 LINE BLK		

Code: 57H	Priority: 1	CO2 Alarm disabled			
	D: CO2 '@ AUS	GB:CO2 '@ OFF	F: ARRET '@ CO2	P: '@ CO2 DES	
	I: '@ CO2 OFF	NL:CO2 '@ UIT	E: '@ CO2 DESC	PL:CO2 '@ WYL.	
S: CO2 '@ AV	N: CO2 '@ AV	DK:CO2 '@ FRA	US:CO2 ALRM OFF		

Code: 6AH	Priority: 1	CO2 Device Failure			
	D: CO2 INOP	GB:CO2 ERR	F: CO2 INOP	P: CO2 INOP	
	I: CO2 INOP	NL:CO2 INOP	E: CO2 INOP	PL:CO2 USZK.	
S: CO2 FEL	N: CO2 FEIL	DK:CO2 FEJL	US:CO2 ERR		

Code: F7H	Priority: 1	Insp. CO2 alarms off			
	D: FICO2 '@ AUS	GB:FICO2 '@ OFF	F: ARRET '@FICO2	P: FICO2 '@ OFF	
	I: CO2 IN '@OFF	NL:FICO2 '@ UIT	E: FICO2 '@DESC	PL:FICO2 WYL.	
S: FICO2 '@ AV	N: FI CO2 '@ AV	DK:FICO2 '@ FRA	US:FICO2 '@ OFF		

Miscellaneous Alarms

Codepage 1

Code: 4BH	Priority: 13/7	Battery low			
	D: BATT. LEER	GB:BATTERY LOW	F: BAT. VIDE	P: BAT SEM CARG	
	I: BATT SCARCIA	NL:BATT. LEEG	E: BAT. VACIA	PL:SLABA BAT.	
S: BATTERI \$&	N: BATTERI LAV	DK:BATTERI \$&	US:BATTERY LOW		

Alarm Messages

Code: 65H	Priority: 1	Primary Speaker Failure		
	D: HUPE INOP	GB:SPEAKER FAIL	F: ALR SON INOP	P: FALHA SONORA
	I: SPEAKER FAIL	NL:AL.TOON INOP	E: ALARMA INOP	PL:GL.GLOS.USZK
	S: LJUDFEL	N: LYD FEIL	DK:LYDFEJL	US:SPEAKER FAIL

Code: 78H	Priority: 1	Communication Error on Port 'COM 2'		
	D: PRIMUS COM2?	GB:PRIMUS COM2?	F: PRIMUS COM2?	P: PRIMUS COM2?
	I: PRIMUS COM2?	NL:PRIMUS COM2?	E: PRIMUS COM2?	PL:PRIMUS COM2?
S: PRIMUS COM2?	N: PRIMUS COM2?	DK:PRIMUS COM2?	US:APOLLO COM2?	

Code: 79H	Priority: 1	Communication Error on Port 'COM 1'		
	D: PRIMUS COM1?	GB:PRIMUS COM1?	F: PRIMUS COM1?	P: PRIMUS COM1?
	I: PRIMUS COM1?	NL:PRIMUS COM1?	E: PRIMUS COM1?	PL:PRIMUS COM1?
S: PRIMUS COM1?	N: PRIMUS COM1?	DK:PRIMUS COM1?	US:APOLLO COM1?	

Code: C9H	Priority: 10/29	Internal Temperature high		
	D: INT.TMP.HOCH	GB:INT.TMP.HIGH	F: TMP.INT.HAUT	P: TEMP.INT.ALT
	I: TMP.INT.ALTA	NL:INT.TMP.HOOG	E: TMP.INT.ALTA	PL:WYS.TEMP.WEW
S: INT.TMP.HOG	N: INT.TEMP.HOY	DK:INT.TP. HOEJ	US:INT.TMP.HIGH	

Code: CAH	Priority: 6	Fan failure		
	D: LUEFTER INOP	GB:FAN ERR	F: VENT INOP	P: ERRO VENT
	I: ERR VENTOLA	NL:VENT INOP	E: VENT INOP	PL:BRAK CHLODZ.
S: FLAKT FEL	N: VIFTE FEIL	DK:VENT.HJUL?	US:FAN ERR	

Code: EFH	Priority: 7/10/12	Power fail		
	D: NETZAUSFALL	GB:POWER FAIL	F: PANNE SECT.	P: FALHA ELETR.
	I: INTERR ELETR	NL:NET UITVAL	E: ALIM. ELECT	PL:BRAK ZASIL.
S: INGEN STROM	N: NETT FEIL	DK:STR.FEJL	US:POWER FAIL	

Codepage 2

Code: A1H	Priority: 1	Power supply error			
	D: NETZTEIL ?	GB: INTERN.POWER?	F: PB SECTEUR	P: FONTE ALIM?	
	I: ALIM.INTERN?	NL:VOEDINGSFOUT	E: FALLO ALIM.?	PL:ZASIL.AWAR.?	
	S: INT.STROM?	N: INT. STROEM?	DK:INT. STROEM?	US:PWR SPLY ERR	

Code: D3H ¹⁾	Priority: 7	Gas analyser water trap expired			
	D: WASSERF. ALT?	GB:WATERTR. OLD?	F: PIEGE E. IN ?	P: COPO VELHO	
	I: TRAPP. ESAUR?	NL:WATERTR. OUD?	E: T.AGUA VIEJA	PL:STARA P WOD?	
S: V. FALLA UTG.	N: VANNF. GML?	DK:vandfl. GI?	US:WATERTR. OLD?		

1) new since device version 4.00, only present in Primus IE

Code: D4H ¹⁾	Priority: 7	CO2 absorbent depleted			
	D: ABSORB. ALT?	GB:ABSORB. OLD?	F: ABSORB PERI?	P: ABSORV VAZIO	
	I: ASSOR. ESAUR?	NL:ABSORB. OUD?	E: ABSRB. VIEJO?	PL:ZUZYT P CO2?	
S: ABSORB. UTG.	N: KALK GML?	DK:ABSORB. GL.?	US:ABSORB. OLD?		

1) new since device version 4.00, only present in Primus IE

Code: D5H ¹⁾	Priority: 11	CO2 absorbent disconnected			
	D: ABSOR. FEHLT?	GB:ABS. PRESENT?	F: ABSORB PRES?	P: ABSORV COLOC	
	I: ASSOR. PRES?	NL:ABSORB. MIST?	E: FALTA ABSRB?	PL:P CO2 OBE CN?	
S: ABS. SAKNAS	N: KALK MONTERT	DK:ABSORB MONT?	US:ABS. PRESENT?		

1) new since device version 4.00, only present in Primus IE

Code: D6 ¹⁾	Priority: 11	Infinity ID breathing hose mismatch			
	D: SCHL. FALSCH?	GB:HOSES MIXED?	F: TUYAUX INT.?	P: TUBOSMUDADOS	
	I: TUBI SCAMB.?	NL:SLANGENVERW?	E: MANG. ERRON?	PL:ZAMIANA PRZ?	
S: SLANG MIX	N: SLANG. BLAND?	DK:SLANGEMIX	US:HOSES MIXED?		

1) new since device version 4.00, only present in Primus IE

Code: D7 ¹⁾	Priority: 11	Infinity ID breathing hose incompatible			
	D: SCHL. INKOMP?	GB:WRONG HOSES?	F: FAUX TUYAUX?	P: TUBSINCOMPAT	
	I: TUBI INCOMP?	NL:VERKEERDE SL	E: MANG. INCOMP?	PL:NIEPR PRZEW?	
S: FEL SLANGAR?	N: GALT HUS	DK:FORKERTE SL?	US:WRONG HOSES?		

1) new since device version 4.00, only present in Primus IE

Code: Dg ¹⁾	Priority: 7	Infinity ID functions inoperable		
	D: ID-FUNK. INOP	GB:ID-FUNC-INOP	F: FNCT ID INOP	P: D-FUNC-INOP
	I: ID-FUNC-INOP	NL:ID-FUNK.INOP	E: FUNC.ID INOP	PL:F ID NIEAKT
	S: ID-FUNK.FEL	N: ID DEFEKT	DK:ID-FUNK-INOP	US:ID-FUNC-INOP

1) new since device version 4.00, only present in Primus IE

Code: Dg ¹⁾	Priority: 7	Infinity ID breathing hose expired		
	D: SCHLCH. ALT?	GB:HOSE OLD?	F: TUYAU USE?	P: TUBOS VELHOS
	I: TUBI SCADUT?	NL:SLANGEN OUD?	E: MANG. VIEJA?	PL:STARY PRZEW?
	S: SLANG UTG.	N: PAS. SL. GML ?	DK:SLANG. GL?	US:HOSE OLD?

1) new since device version 4.00, only present in Primus IE

Code: F2 ¹⁾	Priority: 7	Infinity ID breathing hose missing		
	D: SCHLCH. FEHLT?	GB:HOSE MISSING	F: PAS DE TUYAU	P: TUB DESCONEC
	I: MANC. TUBO	NL:SLANG ONTBR.	E: FALTA TUBO	PL:BRAK WEZA
	S: SLANG SAKNAS	N: SLANGESETT?	DK:SLANGE MANGL	US:HOSE MISSING

1) new since device version 4.20, only present in Primus IE

O2 related Alarms

Codepage 1

Code: 08H	Priority: 31	Insp. Oxygen < low Limit		
	D: FI O2 \$&	GB:FI O2 \$&	F: FI O2 \$&	P: O2 INSP \$&
	I: FI O2 \$&	NL:FI O2 \$&	E: O2 INSP \$&	PL:FI O2 \$&
	S: FIO2 \$&	N: FIO2 \$&	DK:FI O2 \$&	US:% O2 LOW

Code: 37H	Priority: 12	% Oxygen > high Limit		
	D: FI O2 "#	GB:FI O2 "#	F: FI O2 "#	P: O2 INSP "#
	I: FI O2 "#	NL:FI O2 "#	E: O2 INSP "#	PL:FI O2 "#
	S: FIO2 "#	N: FIO2 "#	DK:FIO2 "#	US:% O2 HIGH

Code: BEH	Priority: 8/11	O2 Measurement inoperable		
	D: O2 INOP	GB:O2 ERR	F: O2 INOP	P: ERR O2
	I: O2 INOP	NL:O2 INOP	E: O2 INOP	PL:O2 USZK.
	S: O2 FEL	N: O2 FEIL	DK:O2 FEJL	US:% O2 ERR

SpO2 related Alarms

Codepage 1

Code: 01H	Priority: 31	No SpO2 Pulse for 10 Seconds		
	D: SPO2 PULS ?	GB:NO SPO2 PULS	F: POULS SAT ?	P: PULSO SPO2 ?
	I: POLSO SPO2 ?	NL:SPO2 POLS ?	E: PULSO SPO2 ?	PL:SPO2 PULS ?
	S: SPO2 PULS ?	N: SPO2 PULS ?	DK:SPO2 PULS?	US:NO SPO2 PULS

Code: 02H	Priority: 31	SpO2 Pulse < low Limit		
	D: PULS SPO2 \$&	GB:SPO2 PULS \$&	F: POULS SAT \$&	P: PULSO SPO2\$&
	I: POLSO SPO2\$&	NL:PULS SPO2 \$&	E: PULSO SPO2\$&	PL:PULS SPO2 \$&
	S: SPO2 PULS \$&	N: SPO2 PULS \$&	DK:SPO2 PULS \$&	US:SPO2 PULS LO

Code: 07H	Priority: 31	Oxygen Saturation < low Limit		
	D: SPO2 \$&	GB:SPO2 \$&	F: SPO2 \$&	P: SPO2 \$&
	I: SPO2 \$&	NL:SPO2 \$&	E: SPO2 \$&	PL:SPO2 \$&
	S: SPO2 \$&	N: SPO2 \$&	DK:SPO2 \$&	US:SPO2 LOW

Code: 1EH	Priority: 21	SpO2 Pulse > high Limit		
	D: PULS SPO2 "#	GB:SPO2 PULS "#	F: POULS SAT "#	P: PULSO SPO2"#
	I: POLSO SPO2"#	NL:POLS SPO2 "#	E: PULSO SPO2"#	PL:PULS SPO2 "#
	S: SPO2 PULS "#	N: SPO2 PULS "#	DK:SPO2 PULS "#	US:SPO2 PULS HI

Code: 22H	Priority: 21	Oxygen Saturation > high Limit		
	D: SPO2 "#	GB:SPO2 "#	F: SPO2 "#	P: SPO2 "#
	I: SPO2 "#	NL:SPO2 "#	E: SPO2 "#	PL:SPO2 "#
	S: SPO2 "#	N: SPO2 "#	DK:SPO2 "#	US:SPO2 HIGH

Code: 35H	Priority: 10	SpO2 Sensor disconnected or fault		
	D: SPO2 SENSOR?	GB:SPO2SEN DISC	F: CAPT SPO2 ?	P: SENSOR SPO2?
	I: SENSOR SPO2?	NL:SPO2 SENSOR?	E: SENSOR SPO2?	PL:CZUJ. SPO2?
	S: SPO2 SENSOR?	N: SPO2 SENSOR?	DK:SPO2 SENSOR	US:SPO2SEN DISC

Code: 5BH	Priority: 1	Oximeter Alarm disabled		
	D: SPO2 '@ AUS	GB:SPO2 '@ OFF	F: ARRET '@ SAT	P: '@ SPO2 DES
	I: '@ SPO2 OFF	NL:SPO2 '@ UIT	E: '@ SPO2 DESC	PL:SPO2 '@ WYL.
S: SPO2 '@ AV	N: SPO2 '@ AV	DK:SPO2 '@ FRA	US:SPO2 ALRM OF	

Code: 68H	Priority: 1	Oximeter Device Failure		
	D: SPO2 INOP	GB:SPO2 ERR	F: SPO2 INOP	P: SPO2 INOP
	I: SPO2 INOP	NL:SPO2 INOP	E: SPO2 INOP	PL:SPO2 USZK.
S: SPO2 FEL	N: SPO2 FEIL	DK:SPO2 FEJL	US:SPO2 ERR	

Ventilator related Alarms

Codepage 1

Code: 11H	Priority: 7/16/31	Check Gas Supply		
	D: FRISCHGAS ?	GB:FRESH GAS ?	F: GAZ FRAIS ?	P: GAS FRESCO?
	I: GAS FRESCHI?	NL:VERSGAS ?	E: GAS FRESCO ?	PL:SWIEZY GAZ?
S: FAERSKGAS?	N: FRISKGASS?	DK:FRISK GAS?	US:FRESH GAS ?	

Code: 12H	Priority: 10	Check Air Supply		
	D: AIR AUSFALL	GB:AIR SUPPLY ?	F: MANQUE AIR	P: ALIM. DE AR
	I: MANCANZA AIR	NL:AIR UITVAL	E: ALIM. AIRE ?	PL:BRAK AIR
S: EJ TRYCKLUFT	N: TRYKKLUFT?	DK:LUFTFORSYN.?	US:AIR SUPPLY ?	

Code: 13H	Priority: 11/31	Check O2 Supply		
	D: O2 AUSFALL	GB:O2 SUPPLY ?	F: MANQUE O2	P: ALIM. DE O2
	I: MANCANZA O2	NL:O2 UITVAL	E: ALIM. O2 ?	PL:BRAK O2
S: EJ O2-TRYCK	N: O2 TILF.?	DK:O2-FORSYN.?	US:O2 SUPPLY ?	

Code: 9FH	Priority: 10/28	Problems with Ventilator			
	D: VENT INOP	GB:VENT ERR	F: VENTIL INOP	P: ERRO VENT	
	I: VENT INOP	NL:VENT. INOP	E: VENT INOP	PL:VENT USZK.	
	S: VENT. FEL	N: VENT FEIL	DK:VENT. FEJL	US:VENT ERR	

Code: A0H	Priority: 30/10	Ventilator Communication lost			
	D: VENT KOM ?	GB:COM VENT ERR	F: COM VENTIL ?	P: ERRO COM VEN	
	I: ERR COM VENT	NL:VENT. COMM ?	E: COM VENT ?	PL:VENT KOM ?	
S: KOMM. VENT ?	N: COM VENT ?	DK:COM VENT ?	US:COM VENT ERR		

Code: BDH	Priority: 10/11	Check O2 Supply (Advisory)			
	D: SAUERSTOFF ?	GB:LO O2 SUPPLY	F: ALIM O2 ?	P: OXIGENIO?	
	I: OSSIGENO ?	NL:ZUURSTOF ?	E: OXIGENO ?	PL:TLEN ?	
S: O2-TYCK LAG	N: O2 TILF:?	DK:O2-FORS.?	US:LO O2 SUPPLY		

Code: C4H	Priority: 13	Pressure Limited Respiratory Volume			
	D: DRUCK LIMIT.	GB:PRESSURE LIM	F: PRESS LIMITE	P: PRES LIMITDA	
	I: PRESS LIMIT.	NL:DRUK GELIM.	E: PRES LIMITDA	PL:PRES. LIMIT.	
S: TRYCKBEGR.	N: TRYKK BEGREN	DK:TRYKBEGR.VOL	US:PRESSURE LIM		

Code: C8H	Priority: 29/10	Fresh gas delivery failure			
	D: MISCHER INOP	GB:MIXER INOP	F: MELANG INOP	P: MIXER INOP	
	I: MIXER INOP	NL:MIXER INOP	E: MEZCLAD INOP	PL:MIKSER USZK.	
S: GASMIXER FEL	N: MIKSER FEIL	DK:MIXER FEJL	US:MIXER INOP		

Code: EDH	Priority: 10	Check N2O Supply			
	D: N2O AUSFALL	GB:N2O SUPPLY ?	F: MANQUE N2O	P: ALIM. DE N2O	
	I: MANCANZA N2O	NL:N2O UITVAL	E: ALIM. N2O ?	PL:BRAK N2O	
S: N2O-TRYCK?	N: N2O TILKOBL?	DK:N2O FORS.?	US:N2O SUPPLY ?		

Code: F1H	Priority: 12	Check Setting of Pmax.			
	D: P MAX?	GB:P MAX?	F: P MAX?	P: P MAX?	
	I: P MAX?	NL:P MAX?	E: P MAX?	PL:P MAX?	
S: P MAX ?	N: P MAX?	DK:P MAX?	US:P MAX?		

Code: F3H ¹⁾	Priority: 26/9	No fresh gas		
	D: KEIN FRISCHG	GB:NO FRESHGAS	F: GAZ FRAIS	P: GASES FRESC?
	I: GAS FRESCHI	NL:GEEN VERSGAS	E: GAS FRESCO	PL:BRAK SW. GAZ
	S: FAERSKGAS	N: FRISKGASS	DK:FRISK GAS	US:NO FRESHGAS

1) new since device version 3.20

Code: F4H	Priority: 18	O2-Safety flow open during normal operation		
	D: O2-NOTDOS AN	GB:SAFETY O2 ON	F: DEBITSECU O2	P: O2 SEGURANCA
	I: O2 EMERGENZA	NL:O2 NOODFLOW	E: O2 SEGURIDAD	PL:AWARYJNY O2
	S: O2SAKERHETFL	N: SIKKER-O2	DK:O2 AKTIV	US:SAFETY O2 ON

Codepage 2

Code: 31H	Priority: 10	O2 cylinder pressure low without wall supply		
	D: O2 CYLIND.\$&	GB:O2CYLIND.LOW	F: O2 CYL. BAS	P: CILIN.O2 VAZ
	I: CIL.O2 P.BAS	NL:O2 CYL. LAAG	E: BOT. O2 BAJO	PL:BUTLAO2NIEP.
	S: O2RESERV LAG	N: O2 FL. TOM	DK:O2CYLIND.LAV	US:NO O2 SUPPLY

Code: 32H	Priority: 28/7	O2 cylinder empty without wall supply		
	D: O2 CYL.LEER	GB:O2 CYL. ?	F: CYL. O2 VIDE	P: CILIND. O2?
	I: CIL.O2 VUOTO	NL:O2 CYL. LEEG	E: BOTELLA O2?	PL:BUTLA O2 ?
	S: O2RESERV TOM	N: O2 FL. ?	DK:O2 CYLIND. ?	US:CHK O2 CYL

Code: 33H	Priority: 28	O2 cylinder not connected		
	D: O2 CYLIND.?	GB:O2CYL.DISCON	F: CYL.O2 DISC.	P: CILIN.O2 DES
	I: CIL.O2 SCOL.	NL:GEEN O2 CYL.	E: BOT.O2 DESC	PL:BRAK BUTLIO2
	S: O2RES.EJ ANS	N: O2 FRAKOPLET	DK:O2CYL.DISKON	US:O2CYL.DISCON

Code: 34H	Priority: 25/7	N2O cylinder empty		
	D: N2O CYL.LEER	GB:N2O CYL. ?	F: CYL.N2O VIDE	P: CILIN. N2O?
	I: N2O VUOTO	NL:N2O CYL LEEG	E: BOT. N2O ?	PL:BUTLA N2O ?
	S: N2O RES. TOM	N: N2O FLASKE ?	DK:N2O CYLIND.?	US:CHK N2O CYL

Code: 35H	Priority: 10/25/31	N2O delivery failure		
	D: N2O AUSFALL	GB:NO N2O	F: N2O PANNE	P: SEM N2O
	I: NO EROG.N2O!	NL:GEEN N2O	E: FALLO N2O	PL:BRAK N2O
	S: INGEN N2O	N: INGEN N2O	DK:INGEN N2O	US:NO N2O DELIV

Code: 36H	Priority: 31/11	O2 delivery failure		
	D: O2 AUSFALL	GB:NO OXYGEN	F: O2 PANNE	P: SEM O2
	I: NO EROG. O2!	NL:GEEN O2	E: FALLO O2	PL:BRAK TLENU
S: INGEN O2	N: INGEN O2	DK:INGEN ILT	US:NO O2 DELIV.	

Code: 37H	Priority: 10/25/31	AIR delivery failure		
	D: AIR AUSFALL	GB:NO AIR	F: AIR PANNE	P: SEM AR
	I: NO EROG.ARIA	NL:GEEN AIR	E: FALLO AIRE	PL:BRAK POW.
S: INGEN LUFT	N: INGEN LUFT	DK:INGEN LUFT	US:NO AIR DELIV	

Code: 38H	Priority: 14/10	Set fresh gas flow not attained		
	D: FG LMITIERT	GB:FG LIMITED	F: GF PAS CORR	P: GF BAIXO
	I: FGF ERRATO	NL:VERSGAS LIM.	E: AJUSTE FGF?	PL:LIMIT S.G.
S: FG BEGR	N: BEGRENSSET FG	DK:FG BEGR.	US:FG.FLOW LIM.	

Code: 39H	Priority: 30/10	Internal/external switch over valve error		
	D: FG EXTERN?	GB:FG EXTERN?	F: GF EXTERN?	P: GF EXTERN?
	I: SEL.FGF ERR!	NL:A-CONUS ERR.	E: FGF EXTERNO?	PL:ZEWN. S.G.?
S: FG EXTERN?	N: EKSTERN FG?	DK:FG EXTERN?	US:FG X-OVER ?	

Code: 6AH	Priority: 25	Circle occluded		
	D: INSP.STENOSE	GB:STENOSIS	F: CIRCIUT?	P: CIRCU.OBSTR
	I: CIRC.OCCLUISO	NL:STENOSE?	E: ESTENOSIS?	PL:OKLUZJA
S: CIRK.OCKL.	N: TETT PAS.SYS	DK:STENOSE	US:CIRCLE OCCL	

Code: 8DH	Priority: 15/31	Breathing system disconnected		
	D: VENT OFFEN	GB:VENT ASSEMBL	F: CIRCUIT PAT?	P: CIRC.VENT.
	I: DIAC.S.PAZ.	NL:PAT. SYST.?	E: VENT DESC.	PL:DRENY PACJ.?
S: KONTR.VENT.	N: MONT. VENT.	DK:SAML VENTSYS	US:VENT DISC	

Alarm Messages

Code: 91H	Priority: 14/1	Loss of data		
	D: DATENVERLUST	GB:LOSS OF DATA	F: PERDE DATA	P: INF.PERDIDA
	I: PERDITA DATI	NL:DATAVERLIES	E: PERD. DATOS	PL:STRAC.DANE
	S: DATAFORLUST	N: DATA TAPT	DK:DATATAB	US:LOSS OF DATA

Code: 93H ¹⁾	Priority: 11/9	Apnea ventilation		
	D: APNOE VENT	GB:APNEA VENT	F: APNEE VENT	P: VENT APNEIA
	I: APNEA VENT	NL:APNOE VENT	E: APNEA VENTIL	PL:APNOE VENT
S: APNE VENT.	N: APNEA VENT	DK:APNOE VENT.	US:APNEA VENT	

1) new since device version 2.00

Code: 9CH	Priority: 7	Circle leakage		
	D: LECKAGE	GB:LEAKAGE	F: FUITE CIRC.	P: FUGA
	I: PERDITA CIRC	NL:LEKKAGE	E: FUGA CIRCU.	PL:NIESZCZEL.
S: LACKAGE	N: LEKKASJE	DK:LAEKAGE	US:LEAKAGE	

Code: A0H	Priority: 27/10	Ventilator not in locked position		
	D: VENT DISKONN	GB:VENT.UNLOCKD	F: VENT PAS POS	P: VENT.DESBL.
	I: VEN.NON BLOC	NL:VENT.SLUITEN	E: POSIC. VENT?	PL:WENTYLATOR?
S: VENT.EJ LAST	N: VENT. ULAAST	DK:VENT.ULAEST.	US:VENT.UNLOCKD	

Code: A7H	Priority: 12	Set tidal volume not attained		
	D: TIDAL VOL.?	GB:TIDAL VOL.?	F: VC PAS CON.	P: VOL.CORRENT?
	I: TIDAL VOL.?	NL:TIDAL VOL.?	E: TIDAL VOL.?	PL:TV ?
S: TIDAL VOL.?	N: TIDALVOLUM?	DK:TIDAL VOL.?	US:VT LOW	

Code: A9H	Priority: 14	Setting canceled		
	D: AEND.VERWORF	GB:SET.CANCELED	F: REGL. ANUL.	P: AJUS.CANCEL.
	I: SETT.ANULL.	NL:GEEN SETTING	E: AJUSTE ANUL.	PL:SPR. NASTAWY
S: INST.UPPHAVD	N: INNST.AVVIST	DK:INDST.AFBR.	US:SET.CANCELED	

Code: ACH ¹⁾	Priority: 14	Fresh-Gas Flow too high		
	D: FG ZU HOCH	GB:FG TOO HIGH	F: DGF ELEVE	P: GF ALTO
	I: GF ELEVATI	NL:VGAS TE HOOG	E: FGF DEM ALTO	PL:FG ZA WYSOKI
S: FG FOR HOGT	N: FG FLOW HOY	DK:FG FOR HOEJ	US:FG TOO HIGH	

1) new since device version 3.00

Code: ADH 1)	Priority: 13	Fresh-Gas Flow active			
	D: FG AKTIV	GB:FG ACTIVE	F: DGF ACTIF	P: GF ACTIVO	
	I: GF ATTIVI	NL:VGAS ACTIEF	E: FGF ACTIVO	PL:FG AKTYWNY	
	S: FG AKTIV	N: FG AKTIV	DK:FG AKTIV	US:FG ACTIVE	

1) new since device version 3.00

Code: AFH ¹⁾	Priority: 7	Oxygen Cylinder open			
	D: O2 CYL OFFEN	GB:O2 CYL OPEN	F: BOUT O2 OUV	P: GAR O2 ABER	
	I: BOMB O2 APER	NL:O2 CIL OPEN	E: BOT O2 ABIER	PL:O2 BUTLA WL	
	S: O2TUB OPPEN	N: O2 FL.APEN	DK:O2FL AABEN	US:O2 CYL OPEN	

1) new since device version 3.00, only present in Apollo

Code: B0H ¹⁾	Priority: 7	N2O Cylinder open			
	D: N2O CYL OFF.	GB:N2O CYL OPEN	F: BOUT N2O OUV	P: GAR N2O ABER	
	I: BOM N2O APER	NL:N2O CIL OPEN	E: BOT N2O ABIE	PL:N2O BUTLA WL	
	S: N2OTUB OPPEN	N: N2O FL.APEN	DK:N2OFL AABEN	US:N2O CYL OPEN	

1) new since device version 3.00, only present in Apollo

Code: B1H ¹⁾	Priority: 7	Air Cylinder open			
	D: AIR CYL OFF.	GB:AIR CYL OPEN	F: BOUT AIR OUV	P: GAR AR ABER	
	I: BOM AIR APER	NL:AIR CIL OPEN	E: BOT AIR ABIE	PL:AIR BUTLA WL	
	S: LUFTUB OPPEN	N: LUFT FL.APEN	DK: AIRFL AABEN	US:AIR CYL OPEN	

1) new since device version 3.00, only present in Apollo

Code: B2H ¹⁾	Priority: 8	N2O Cylinder Sensor not connected			
	D: N2OCYL.SENS?	GB:N2OCYL.SENS?	F: CR BOUT N2O?	P: SEN.GAR N2O?	
	I: SENSBOMN2O?	NL:N2OCIL.SENS?	E: SENS BOTN2O?	PL:N2O CZUJ ODL	
	S: N2OTUB SENS?	N: SENS.N2O FL?	DK:N2OFL DISKON	US:N2OCYL.SENS?	

1) new since device version 2.00

Code: B3H ¹⁾	Priority: 8	Air Cylinder Sensor not connected			
	D: AIRCYL.SENS?	GB:AIRCYL.SENS?	F: CR BOUT AIR?	P: SEN.GAR AR?	
	I: SENSBOMAIR?	NL:AIRCIL.SENS?	E: SENS BOTAIR?	PL:AIR CZUJ ODL	
	S: LUFTUB SENS?	N: SENS LUFTFL?	DK:AIRFL DISKON	US:AIRCYL.SENS?	

1) new since device version 2.00

Alarm Messages

Code: B4H ¹⁾	Priority: 8	O2 Cylinder Sensor not connected		
	D: O2 CYL.SENS?	GB:O2 CYL.SENS?	F: CR BOUT O2?	P: SEN.GAR O2?
	I: O2 CYL.SENS?	NL:O2 CYL.SENS?	E: SENS BOT O2?	PL:O2 CZUJ ODL
	S: O2TUB SENS?	N: SENS O2 FL?	DK:O2 FL DISKON	US:O2 CYL.SENS?

1) new since device version 2.00

Code: B5H ¹⁾	Priority: 7/24	Air Cylinder Pressure low		
	D: AIR CYL.LEER?	GB:AIR CYL.?	F: CYL.AIR VIDE	P: CILIN. AR?
	I: ARIA VUOTO	NL:AIR CYL LEEG	E: BOT AIRE?	PL:BUTLA POW.?
	S: LUFT RES.TOM	N: LUFT FLASKE?	DK:LUFT CYL.?	US:AIR CYL.?

1) new since device version 2.00

Code: C7H ¹⁾	Priority: 11	Air Fresh Gas Flow Measurement inoperable		
	D: FG AIR SENS?	GB:FG AIR SENS?	F: CAP DEB. AIR?	P: FG AIR SENS?
	I: SENS AIR GF?	NL:VG AIR SENS?	E: GF AIR INOP	PL:CZ PRZ POW?
	S: FG LUFT SENS	N: FG SENS LUFT	DK:FG AIR SENS?	US:FG AIR SENS?

1) new since device version 3.00

Code: C8H ¹⁾	Priority: 11	O2 Fresh Gas Flow Measurement inoperable		
	D: FG O2 SENS?	GB:FG O2 SENS?	F: CAP GF. O2 ?	P: FG O2 SENS?
	I: SENS O2 GF?	NL:VG O2 SENS?	E: GF O2 INOP	PL:CZ PRZEP O2?
	S: FG O2 SENS?	N: FR SEN. O2 ?	DK:FG O2 SENS?	US:FG O2 SENS?

1) new since device version 3.00

Code: C9H ¹⁾	Priority: 11	N2O Fresh Gas Flow Measurement inoperable		
	D: FG N2O SENS?	GB:FG N2O SENS?	F: CAP GFN2O?	P: FG N2O SENS?
	I: SENS N2O GF?	NL:VG N2O SENS?	E: GF N2O INOP	PL:CZ PRZ NO2?
	S: FG N2O SENS?	N: FG SENS N2O?	DK:FG N2O SENS?	US:FG N2O SENS?

1) new since device version 3.00

Code: CAH	Priority: 25/10	No Air Supply		
	D: AIR AUSFALL	GB:NO AIR	F: AIR PANNE	P: SEM AR
	I: NO EROG. ARIA	NL:GEEN AIR	E: FALLO AIR	PL:BRAK POW.
	S: INGEN LUFT	N: INGEN LUFT	DK:INGEN LUFT	US:NO AIR

	Priority: 25/10	No N2O Supply		
Code:	D: N2O AUSFALL	GB:NO N2O	F: N2O PANNE	P: SEM N2O
CBH	I: NO EROG.N2O	NL:GEEN N2O	E: FALLO N2O	PL: BRAK N2O
	S: INGEN N2O	N: INGEN N2O	DK:INGEN N2O	US:NO N2O

	Priority: 10	Pressure relief valve opened		
Code:	D: DRUCKABBAU	GB:PRESS RELIEF	F: BAISSSE PRESS	P: VALVESCAPEAB
D0H ¹⁾	I: VALV SFIATO	NL:DRUKONTLAST.	E: CAIDA PRES.	PL: NEUTR CISN
	S: TRYCKFALL	N: TRYKKVENTIL	DK:Trykafhj.	US:PRESS RELIEF

1) new since device version 3.20

Text Messages

Code: 01H ¹⁾	Ventilationmode IPPV	
D: Beatmungsmode IPPV	GB:Ventilationmode IPPV	F: mode ventilatoire VC
I: Modi di ventilazione IPPV	NL:beademings-mode IPPV	E: Modo de ventilacion IPPV
P: Modo de ventilacao IPPV	PL:Wentylacja typu IPPV	S: Ventilationssaett IPPV
N: Ventilasjonsmodus IPPV	DK:Modus IPPV	US:Ventilationmode IPPV

1) only up to device version 1.06

Code: 06H ¹⁾	Ventilationmode SIMV	
D: Beatmungsmode SIMV	GB:Ventilationmode SIMV	F: mode ventilatoire VACI
I: Modi di ventilazione SIMV	NL:beademings-mode SIMV	E: Modo de ventilacion SIMV
P: Modo de ventilacao SIMV	PL:Wentylacja typu SIMV	S: Ventilationssaett SIMV
N: Ventilasjonsmodus SIMV	DK:Modus SIMV	US:Ventilationmode SIMV

1) only up to device version 1.06

Code: 1EH	Ventilator is in Standby-Mode	
D: Ventilator STANDBY	GB:Ventilator STANDBY	F: Ventilateur ATTENTE
I: Ventilatore STANDBY	NL:ventilator STANDBY	E: Ventilador STANDBY
P: Ventilador STANDBY	PL:Wentylator STANDBY	S: Ventilationssaett STANDBY
N: Ventilator STANDBY	DK:Ventilator STANDBY	US:Ventilator STANDBY

Code: 22H	Selected CO2 Unit is mmHg	
D: mmHg	GB:mmHg	F: mmHg
I: mmHg	NL:mmHg	E: mmHg
P: mmHg	PL:mmHg	S: mmHg
N: mmHg	DK:mmHg	US:mmHg

Code: 23H	Selected CO2 Unit is kPa	
D: kPa	GB:kPa	F: kPa
I: kPa	NL:kPa	E: kPa
P: kPa	PL:kPa	S: kPa
N: kPa	DK:kPa	US:kPa

Code: 24H	Selected CO2 Unit is %	
D: %	GB:%	F: %
I: %	NL:%	E: %
P: %	PL:%	S: %
N: %	DK:%	US:%

Code: 25H	Halothane detected	
D: Anaesthesie-Gas HAL- OTHANE	GB:Anaesthesia gas HAL- OTHANE	F: Halogene HALOTHANE
I: Gas anestetico ALOTHANE	NL:anaesthesie-gas HALOTHAN	E: Gas anestesico HAL- OTHANE
P: Gas anestesico HALOTANO	PL:Gazu anestetycznego HALO- TAN	S: Anestesigas HALOTAN
N: Anestesigass HALOTANE	DK:A-GAS HALOTAN	US:Anasthesia gas HAL- OTHANE

Code: 26H	Enflurane detected	
D: Anaesthesie-Gas ENFLU- RANE	GB:Anaesthesia gas ENFLU- RANE	F: Halogene ENFLURANE
I: Gas anestetico ENFLUO- RANE	NL:anaesthesie-gas ENFLU- RANE	E: Gas anestesico ENFLURANE
P: Gas anestesico ENFLU- RANO	PL:Gazu anestetycznego ENFLURAN	S: Anestesigas ENFLURAN
N: Anestesigass ENFLURANE	DK:A-GAS ENFLURAN	US:Anasthesia gas ENFLU- RANE

Code: 27H	Isoflurane detected	
D: Anaesthesie-Gas ISOFLU- RANE	GB:Anaesthesia gas ISOFLU- RANE	F: Halogene ISOFLURANE
I: Gas anestetico ISOFLUO- RANE	NL:anaesthesie-gas ISOFLU- RANE	E: Gas anestesico ISOFLU- RANE
P: Gas anestesico ISOFLU- RANO	PL:Gazu anestetycznego IZOF- LURAN	S: Anestesigas ISOFLURAN
N: Anestesigass ISOFLURANE	DK:A-GAS ISOFLURAN	US:Anasthesia gas ISOFLU- RANE

Code: 28H	Desflurane detected	
D: Anaesthesie-Gas DESFLURANE	GB:Anaesthesia gas DESFLURANE	F: Halogene DESFLURANE
I: Gas anestetico DESFLURANE	NL:anaesthesie-gas DESFLURANE	E: Gas anestesico DESFLURANE
P: Gas anestesico DESFLURANO	PL:Gazu anestetycznego DESFLURAN	S: Anestesigas DESFLURAN
N: Anestesigass DESFLURANE	DK:A-GAS DESFLURAN	US:Anesthesia gas DESFLURANE

Code: 29H	Sevoflurane detected	
D: Anaesthesie-Gas SEVOFLURANE	GB:Anaesthesia gas SEVOFLURANE	F: Halogene SEVOFLURANE
I: Gas anestetico SEVOFLURANE	NL:anaesthesie-gas SEVOFLURANE	E: Gas anestesico SEVOFLURANE
P: Gas anestesico SEVOFLURANO	PL:Gazu anestetycznego SEVOFLURAN	S: Anestesigas SEVOFLURAN
N: Anestesigass SEVOFLURANE	DK:A-GAS SEVOFLURAN	US:Anesthesia gas SEVOFLURANE

Code: 2AH	No Anaesthesia Gas detected	
D: kein Anaesthesie-Gas	GB:No anaesthesia gas	F: Pas d'halogene
I: Nessun gas anestetico	NL:geen anaesthesie-gas	E: Sin gas anestesico
P: Sem gas anestesico	PL:Brak gazu anestetycznego	S: Ingen Anestesigas
N: Ingen anestesigass	DK:INGEN A-GAS	US:No anesthesia gas

Code: 2BH	Ventilationmode man./spont.	
D: Beatmungsmodus Man./Spont.	GB:Ventilationmode man./spont.	F: mode ventilatoire Man./Spont.
I: Modi di ventilazione Man./Spont.	NL:beademings-mode man./spont.	E: Modo de ventilacion man./espont.
P: Modo de vent. man./espont.	PL:Wentylacja typu man./spont.	S: Ventilationssaett MAN/SPONTAN
N: Ventilasjonsmodus Man./Spont.	DK:Modus MAN/SPON	US:Ventilationmode man./spont.

Code: 2CH	Selected Language	
D: deutsch	GB:English	F: francais
I: italiano	NL:Nederlands	E: espanol
P: portugues	PL:polski	S: svenska
N: Norsk	DK:dansk	US:English

Code: 34H ¹⁾	Ventilationmode PCV	
D: Beatmungsmode PCV	GB:Ventilationmode PCV	F: mode ventilatoire VPC
I: Modi di ventilazione PCV	NL:beademings-mode PCV	E: Modo de ventilacion PCV
P: Modo de ventilacao PCV	PL:Wentylacja typu PCV	S: Ventilationssaett PCV
N: Ventilasjonsmodus PCV	DK:Ventilationsmodus PCV	US:Ventilationmode PCV

1) only up to device version 1.06

Code: 36H	Ventilationmode FRESH GAS EXTERNAL	
D: Beatmungsmode FRISCHGAS EXTERN	GB:Ventilationmode FRESH GAS EXT.	F: mode ventilatoire GAZ FRAIS EXT.
I: Ventilazione GAS FRESCO EXTERN	NL:beademings-mode VERS-GAS EXTERN	E: Modo ventilatorio GAS FRESCO EXT
P: Modo vent. GAS FRESCO EXT	PL:Wentylacja GAZ EXTERNAI	S: Ventilationssaett EXT. FRISK-GAS
N: Ventilasjonsmodus EXT. FRISKGASS	DK:Ventilationsmodus EXT. FRISKGAS	US:Ventilationmode FRESH GAS EXT.

Code: 37H ¹⁾	Selected Carrier Gas is Air	
D: Traeergas AIR	GB:Carrier Gas AIR	F: Gaz vectuer AIR
I: Gas Portante ARIA	NL:Draag gas AIR	E: GAS Portador AIRE
P: Gas Portador AR	PL:Gaz nosny AIR	S: Baergas LUFT
N: Grunngass LUFT	DK:Baeregas LUFT	US:Carrier Gas AIR

1) not in device Apollo and Pallas

Code: 38H ¹⁾	Selected Carrier Gas is N2O	
D: Traeergas N2O	GB:Carrier Gas N2O	F: Gaz vectuer N2O
I: Gas Portante N2O	NL:Draag gas N2O	E: GAS Portador N2O
P: Gas Portador N2O	PL:Gaz nosny N2O	S: Baergas N2O
N: Grunngass N2O	DK:Baeregas N2O	US:Carrier Gas N2O

1) not in device Apollo and Pallas

Code: 4AH	2nd Agent Halothane detected	
D: 2. Anaesthesie-Gas HAL-OTHANE	GB:2nd Anaesthesia gas HAL-OTHANE	F: 2. Halogene HALOTHANE
I: Sec. gas anestetico HALOTHANE	NL:2nd volatile agent HAL-OTHANE	E: 2. gas anestesico HAL-OTHANE
P: 2. gas anestesico HALOTANO	PL:2. gazu anestetycznego HALOTAN	S: 2:a anestesigas HAL-OTHANE
N: 2. anestesigass HAL-OTHANE	DK:Anden anaest.gas Hal.	US:2nd Anesthesia gas HAL-OTHANE

Code: 4BH	2nd Agent Enflurane detected	
D: 2. Anaesthesie-Gas ENFLURANE	GB:2nd Anaesthesia gas ENFLURANE	F: 2. Halogene ENFLURANE
I: Sec. gas anestetico ENFLURANE	NL:2nd volatile agent ENFLURANE	E: 2. gas anestesico ENFLURANE
P: 2. gas anestesico ENFLURANO	PL:2. gazu anestetycznego ENFLURAN	S: 2:a anestesigas ENFLURANE
N: 2. anestesigass ENFLURANE	DK:Anden anaest.gas Enfl	US:2nd Anesthesia gas ENFLURANE

Code: 4CH	2nd Agent Isoflurane detected	
D: 2. Anaesthesie-Gas ISOFLURANE	GB:2nd Anaesthesia gas ISOFLURANE	F: 2. Halogene ISOFLURANE
I: Sec. gas anestetico ISOFLURANE	NL:2nd volatile agent ISOFLURANE	E: 2. gas anestesico ISOFLURANE
P: 2. gas anestesico ISOFLURANO	PL:2. gazu anestetycznego IZOFLURAN	S: 2:a anestesigas ISOFLURANE
N: 2. anestesigass ISOFLURANE	DK:Anden anaest.gas Isofl.	US:2nd Anesthesia gas ISOFLURANE

Code: 4DH	2nd Agent Desflurane detected	
D: 2. Anaesthesie-Gas DESFLURANE	GB:2nd Anaesthesia gas DESFLURANE	F: 2. Halogene DESFLURANE
I: Sec. gas anestetico DESFLURANE	NL:2nd volatile agent DESFLURANE	E: 2. gas anestesico DESFLURANE
P: 2. gas anestesico DESFLURANO	PL:2. gazu anestetycznego DESFLURAN	S: 2:a anestesigas DESFLURANE
N: 2. anestesigass DESFLURANE	DK:Anden anaest.gas Desfl.	US:2nd Anesthesia gas DESFLURANE

Code: 4EH	2nd Agent Sevoflurane detected	
D: 2. Anaesthesie-Gas SEVOFLURANE	GB:2nd Anaesthesia gas SEVOFLURANE	F: 2. Halogene SEVOFLURANE
I: Sec. gas anestetico SEVOFLUORANE	NL:2nd volatile agent SEVOFLURANE	E: 2. gas anestesico SEVOFLURANE
P: 2. gas anestesico SEVOFLURANO	PL:2.gazu anestetycznego SEWOFLURAN	S: 2:a anestesigas SEVOFLURANE
N: 2. anestesigass SEVOFLURANE	DK:Anden anaest.gas Sevofl.	US:2nd Anesthesia gas SEVOFLURANE

Code: 4FH	No 2nd Anesthesia Gas detected	
D: kein 2. Anaesthesie-Gas	GB:No 2nd anaesthesia gas	F: Pas 2. d'halogene
I: Nessun sec. gas anestetico	NL:geen 2nd anaesthesie-gas	E: Sin 2. gas anestesico
P: Sem 2. gas anestesico	PL:Brak 2. gazu anestetycznego	S: Ingen 2:a Anestesigas
N: Ingen 2. anestesigass	DK:Ingen anden A-GAS	US:No 2nd anesthesia gas

Code: 53H	Device is performing leakage test	
D: LECKAGETEST laeuft	GB:performing LEAKAGE TEST	F: Appareil en TEST "FUITE"
I: Test perditte	NL: doet LEKTEST	E: CHEQUEO FUGA
P: realizando teste de fugas	PL:Przeprowadz TEST SZCZELNOSCI	S: Utfor LACKAGETEST
N: utf. lekkasje test	DK:Udfoer laekagetest	US:performing LEAKAGE TEST

Code: 54H	Device is in Standby-Mode	
D: Betriebsart STANDBY	GB:Mode STANDBY	F: mode ATTENDE
I: Modo STANDBY	NL:mode STANDBY	E: Modo STANDBY
P: Modo STANDBY	PL:Urządzenie jest w modzie STANDBY	S: Mode STANDBY
N: Modus STANDBY	DK:Modus STANDBY	US:Mode STANDBY

Code: 56H ¹⁾	Selected Agent Unit is kPa	
D: kPa	GB:kPa	F: kPa
I: kPa	NL:kPa	E: kPa
P: kPa	PL:kPa	S: kPa
N: kPa	DK:kPa	US:kPa

1) new since device version 1.05

Text Messages

Code: 57H ¹⁾	Selected Agent Unit is %	
D: %	GB:%	F: %
I: %	NL:%	E: %
P: %	PL:%	S: %
N: %	DK:%	US:%

1) new since device version 1.05

Code: 58H ¹⁾	HLM Mode active	
D: HLM-Mode aktiv	GB:HLM Mode active	F: Mode CEC actif
I: Modalita HLM attiva	NL:HLM modus actief	E: Modo BEC activo
P: Modo HLM activo	PL:HLM aktywny	S: HLM Mode aktiv
N: HLM Modus aktiv	DK:HLM modus activ	US:HLM Mode active

1) new since device version 2.00

Code: 59H ¹⁾	Volume controlled Ventilation Mode	
D: Volume Mode	GB:Volume Mode	F: Mode en volume
I: Modalita Volumetrica	NL:Volume Modus	E: Modo volumetrico
P: Modo volumetrico	PL:Tryb Objetosciowy	S: Volymkontrollerad mode
N: Volumkontrollert modus	DK:Volumen modus	US:Volume Mode

1) new since device version 2.00

Code: 5AH ¹⁾	Pressure controlled Ventilation Mode	
D: Pressure Mode	GB:Pressure Mode	F: Mode en pression
I: Modalita Pressometrica	NL:Druck Modus	E: Modo presiometrico
P: Modo pressiometrico	PL:Tryb Cisnieniowy	S: Tryckkontroll mode
N: Trykkontrollert modus	DK:Tryk modus	US:Pressure Mode

1) new since device version 2.00

Code: 5BH ¹⁾	Pressure Support Mode	
D: Pressure Support Mode	GB:Pressure Support Mode	F: Aide inspiratoire
I: Modalita Pressure Support	NL:Pressure Support Modus	E: Presion de soporte
P: Modo pressao de suporte	PL:Tryb Cisnieniowy z wspomaganiem.	S: Tryckunderstod mode
N: Trykkstotte modus	DK:Tryk stotte modus	US:Pressure Support Mode

1) new since device version 2.00

Code: 5CH ¹⁾	Pressure Support added to intermittent Ventilation Mode	
D: Pressure Support aktiv	GB:Pressure Support added	F: Add. Aide inspiratoire
I: Modalita Pressure Support +	NL:Pressure Support Actief	E: Presion de soporte anadida
P: Pressao de suporte adicionalada	PL:Tryb Cisn ze Wspom. dodana.	S: Tryckunderstod tillagg
N: Trykkstotte tilfort	DK:Tryk stotte tilfort	US:Pressure Support added

1) new since device version 2.00

Code: 5DH ¹⁾	Synchronized intermittent Ventilation	
D: Synchronized Ventilation	GB:Synchronized Ventilation	F: Ventilation synchronisee
I: Ventilazione Sincronizzata	NL:Gesynchron. ventilatie	E: Ventilacion sincronizada
P: Ventilacao sincronizada	PL:Wentylacja Synchroniczna	S: Synkroniserad ventilation
N: Synkroniseret ventilasjon	DK:Synkroniseret ventilation	US:Synchronized Ventilation

1) new since device version 2.00

Code: 5EH ¹⁾	AutoFlow added to Volume Mode	
D: AutoFlow	GB:AutoFlow	F: AutoFlow
I: AutoFlow	NL:AutoFlow	E: AutoFlow
P: AutoFlow	PL:AutoFlow	S: AutoFlow
N: AutoFlow	DK:AutoFlow	US:AutoFlow

1) new since device version 4.00

Change History

Primus/ Apollo/ Pallas Version	Data Type	Data Description	Code (hex)/ Codepage	Change Description
1.00	Base Revision			
1.01	Alarms & Text Messages	all	all	additional languages: Italian, Portuguese, Polish and Norwegian
1.05	Alarms & Text Messages	all	all	additional language: Danish
	Text Message	Selected Agent Unit is kPa	56	new
	Text Message	Selected Agent Unit is %	57	new
	Measured Data	all agent data in unit kPa	50 - 5D	new
	Realtime Data	all agent data in unit kPa	2A - 2F	new
1.06	no changes			
2.00	Alarms	PEEP High	DA/1	new
		Apnea Ventilation	93/2	new
		N2O Cylinder not connected	B2/2	new
		Air Cylinder not connected	B3/2	new
		O2 Cylinder not connected	B4/2	new
		Air Cylinder Pressure low	B5/2	new
	Text Messages	Ventilation Mode IPPV	1	removed
		Ventilation Mode SIMV	6	removed
		Ventilation Mode PCV	34	removed
		HLM Mode	58	new
		Volume Mode	59	new
		Pressure Mode	5A	new
		Pressure Support Mode	5B	new
		Pressure Support added to inter- mittent ventilation mode	5C	new
Synchronized intermittent venti- lation	5D	new		

Primus/ Apollo/ Pallas Version	Data Type	Data Description	Code (hex)/ Codepage	Change Description
	Settings	Δ PPS	12	new
		Minimal Frequency	42	new
		Ideal Body Weight	4B	new
	Realtime Sync- Command	Start of Ventilator Insp. Cycle	command code C6 argument C0	new
2.02	Measured Data	O2 Uptake ¹⁾	64	new
3.00	Alarms	Air Flow Measurement Failure	C7/2	new
		O2 Flow Measurement Failure	C8/2	new
		N2O Flow Measurement Failure	C9/2	new
		Fresh Gas Flow too high	AC/2	new
		Stop Fresh Gas Flow	AD/2	new
		Close O2 Cylinder	AF/2	new
		Close N2O Cylinder	B0/2	new
		Close AIR Cylinder	B1/2	new
	Continuous Pressure	F8/1	new	
Alarms and Text Messages	all	all	additional language: American English	
3.20	Alarms	No Fresh Gas	F3/1	new
		Pressure Relief	D0/2	new
	Measured Data	all agent consumption data	1B-1F	new
		all fresh gas data	DD DE E2	new
		Insp. Tidal Volume	8B	new


Primus/ Apollo/ Pallas Version	Data Type	Data Description	Code (hex)/ Codepage	Change Description
4.00	Alarms	MAC LOW	D2/2	new
		MV Low Alarm OFF	67/2	new
		Water Trap Expired	D3/2	new
		CO2 Absorbent Depleted	D4/2	new
		CO2 Absorbent Disconnected	D5/2	new
		Hose Mismatch	D6/2	new
		Hose Incompatible	D7/2	new
		ID Functions INOP	D8/2	new
		Hose Expired	D9/2	new
		Continuous Pressure	F8/1	missing translations added
		No Fresh Gas	F3/1	missing translations added
		Air Flow Measurement Failure	C7/2	missing translations added
		O2 Flow Measurement Failure	C8/2	missing translations added
		N2O Flow Measurement Failure	C9/2	missing translations added
	Pressure Relief	D0/2	missing translations added	
Text Messages	Auto Flow	5E	new	
4.10	Measured Data	Fresh-gas flows	DD, DE, E2	Value 9999 transmitted for fresh-gas flows ≥ 9999 mL/min
		Respiratory rates	B4, D5, D7, D9	Value 99 transmitted for respiratory rates ≥ 99 1/min

Primus/ Apollo/ Pallas Version	Data Type	Data Description	Code (hex)/ Codepage	Change Description
4.20	Alarms	ID Hose Missing	F2/2	new
		several alarms	00/1	Alarm priorities corrected. No change in device behavior. Correction for deviations found in this document.
			29/1	
			2A/1	
			2B/1	
			2C/1	
			32/1	
			0D/1	
			BE/1	
			BD/1	
			38/2	
			91/2	
			CA/2	
			CB/2	


1) not present in version 3.0n




Directive 93/42/EEC
concerning Medical Device

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90 37 426 – TD 5132.011 en

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Edition: 11 – 2015-01

(Edition: 1 – 2001-09)

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As of 2015-08:
Dräger Medical GmbH
changes to
Drägerwerk AG & Co. KGaA