

„Flextronic“ jungiamumo vadovas



- LIT** **Jungiamumo vadovas**
Montavimo ir naudojimo instrukcija
- „Flamconnect“ tinklų sietuvas
 - Analoginės išvestys
 - Skaitmeninės (diskrečiosios) išvestys
 - Pastato valdymo sistemos (PVS) sąsaja





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Šis dokumentas skirtas naudoti kaip gaminio montavimo ir naudojimo instrukcijos priedas. Šioje instrukcijoje konkrečiai aprašomi „Flamcomat G4“ saugos, naudojimo ir eksploataavimo principai.

Montavimo instrukcijų ir kitos dokumentacijos įvairiomis kalbomis ieškokite www.flamcogroup.com/manuals. Daugiau informacijos apie gamybą galite gauti atitinkamame „Flamco“ filiale.

Legenda

-  Pagrindinis ekranas
-  Nuostatos
-  Pagrindinės nuostatos
-  Techninės priežiūros informacija

1. Tinkamas naudojimas

„Flextronic“ valdymo blokas turi būti naudojamas pagal šį vadovą. Tebetaikoma originalios dokumentacijos atitikties deklaracija.

2. Gaminio aprašymas

„Flextronic“ yra universalus „Flamco“ automatų valdymo blokas.

Jame yra daugybė ryšio parinkčių, kurias galima suaktyvinti „Flextronic“ priedų meniu.

1. Eterneto prievadas, skirtas PVS integruoti ir užmegzti ryšį naudojant „Modbus“ arba „Bacnet“ protokolą.
2. USB prievadas, skirtas eksploataavimo žurnalui išsaugoti arba programinės-aparatinės įrangos atnaujinimui atlikti.
3. CAN magistralės prievada (susieti įrangos susiejimui), skirti keliems „Flamco“ automatams tarpusavyje sujungti.
4. RS-485 prievada (susieti įrangos susiejimui), skirti „Flamco Remote Service“ tinklų sietuvo ryšiui užmegzti („Flamconnect“) arba PVS integruoti per „Modbus“ arba „Bacnet“.
5. Belaidė sąsaja (2,400...2,485 GHz), naudojama norint susieti su išmaniuoju telefonu ar planšetiniu kompiuteriu.
6. Analoginės įtampos išvesties signalai, nuotoliniu būdu nurodantys lygį inde ir sistemos slėgį (0–10V).
7. Skaitmeninės (diskrečiosios) išvesties signalai (250 VAC, maks. 5 A, be potencialo). Naudojant „Flextronic“ pavojaus signalų meniu, pasirinktines klaidas ir įspėjimus galima sukonfigūruoti trijuose prievaduose.

Nenurodyti prievada skirti konkretiems automato priedams ar kitiems eksploataavimo tikslams. Jie neturi būti naudojami kliento sąsajai ar ryšiui užmegzti.

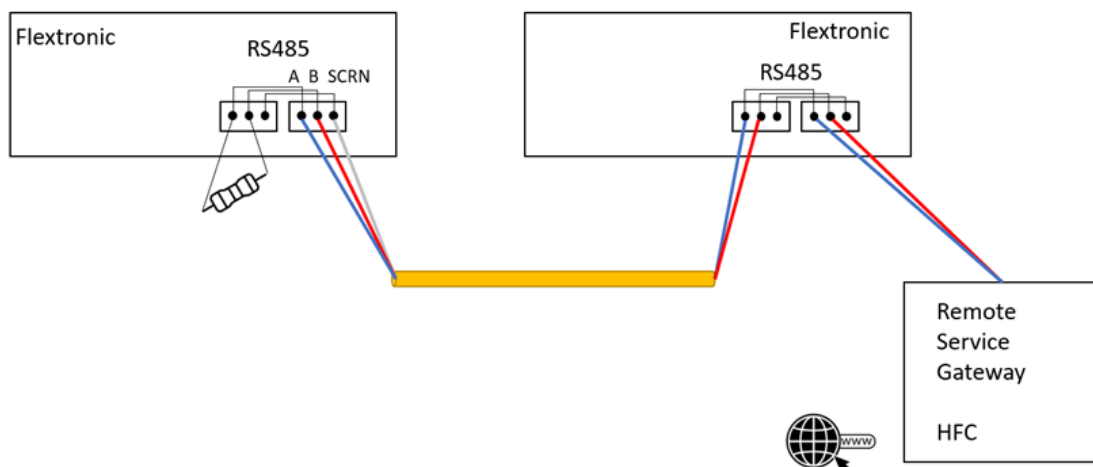
2.1 Išsami instaliacijos informacija



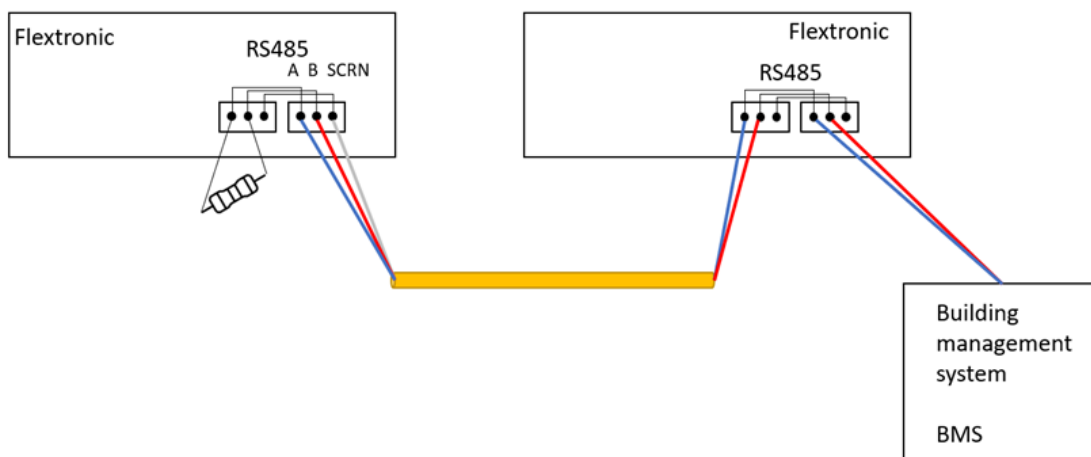
Montavimą, duomenų apdorojimą ir paleidimą turi atlikti išmokyti, kvalifikuoti ir kompetentingi darbuotojai. Reikia laikytis atitinkamų nacionalinių standartų, įstatymų ir taisyklių. Montavimo instrukcijų ir kitos dokumentacijos įvairiomis kalbomis ieškokite www.flamcogroup.com/manuals.

- „Flamco“ neprideda ir neteikia papildomų kabelių.
- „Flamco“ rekomenduoja naudoti susuktą vienos poros ekranuotą kabelį.
- Apkrovos rezistorius yra 120 omų vertės.
- Maksimalus leistinas kabelių ilgis yra 500 m.

2.2 „Flamconnect“ tinklų sietuvas



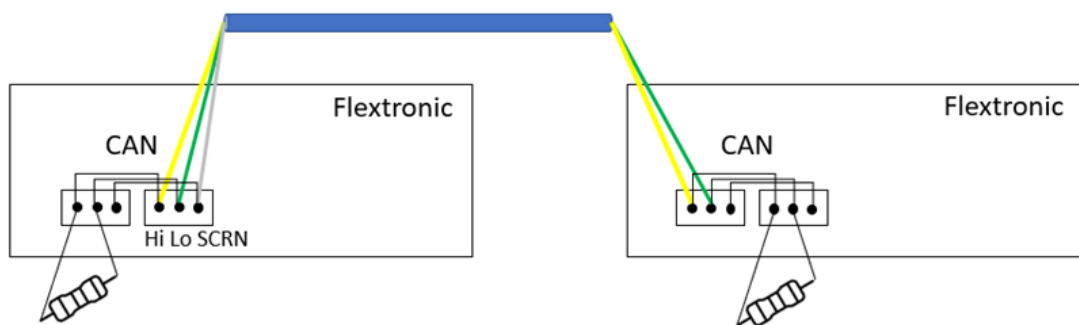
2.3 PVS prijungimas per „Modbus“ ir „Bacnet“



Tuo pačiu metu RS-485 magistralėje negalima naudoti „Modbus“ ir „Bacnet“ ryšio. Jei reikalingi abu protokolai, vienas iš jų turi veikti per eterneto jungtį (IP).

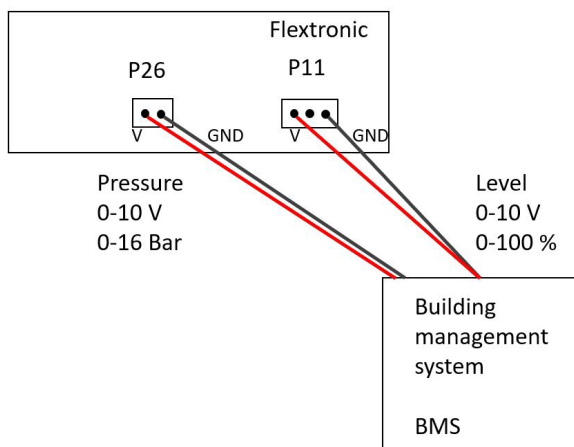
Naudojant „Flamconnect Remote Service“ tinklų sietuvą, šiai funkcijai yra skirtas RS485 prievadas. Jei taip pat reikalingas „Modbus“ arba „Bacnet“, tai galima padaryti tik naudojant eterneto jungtį (IP).

2.4 Tarpusavyje sujungti „Flamco“ automatai



2.5 Analoginės išvesties signalai (klientas)

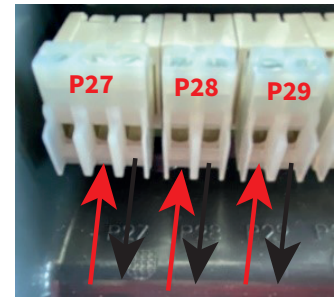
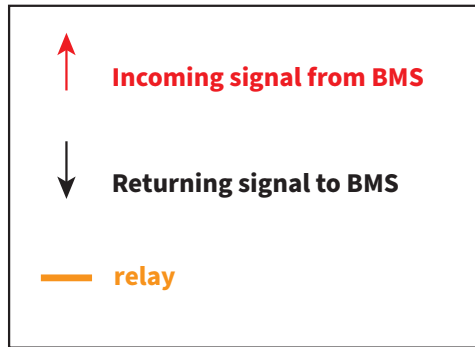
Skirti sistemos slėgio ir lygio inde įtampos analoginiam signalui gauti.



2.6 Skaitmeninės (diskrečiosios) išvesties signalai

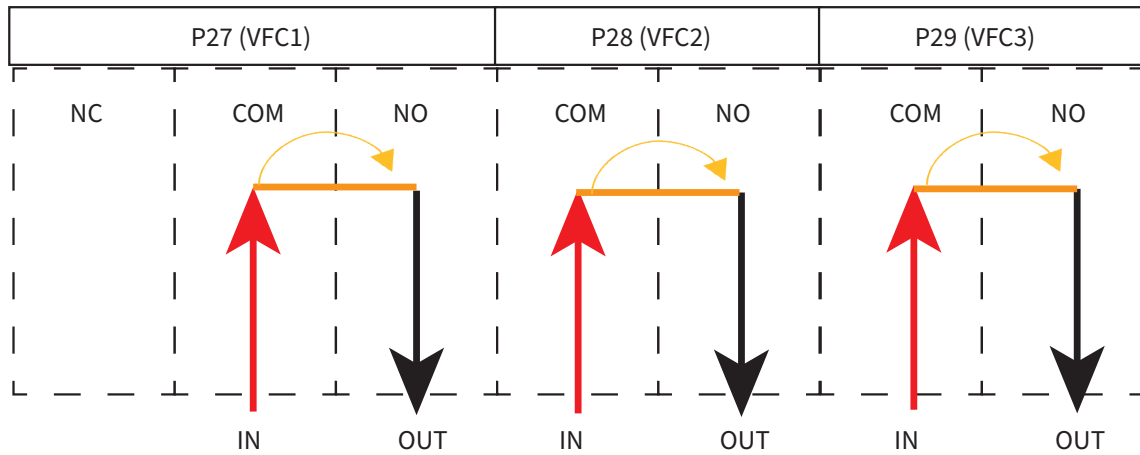
GUI settings:
Invert polarity: off

Specifications of VFC:
5A @ 240VAC (non-inductive)



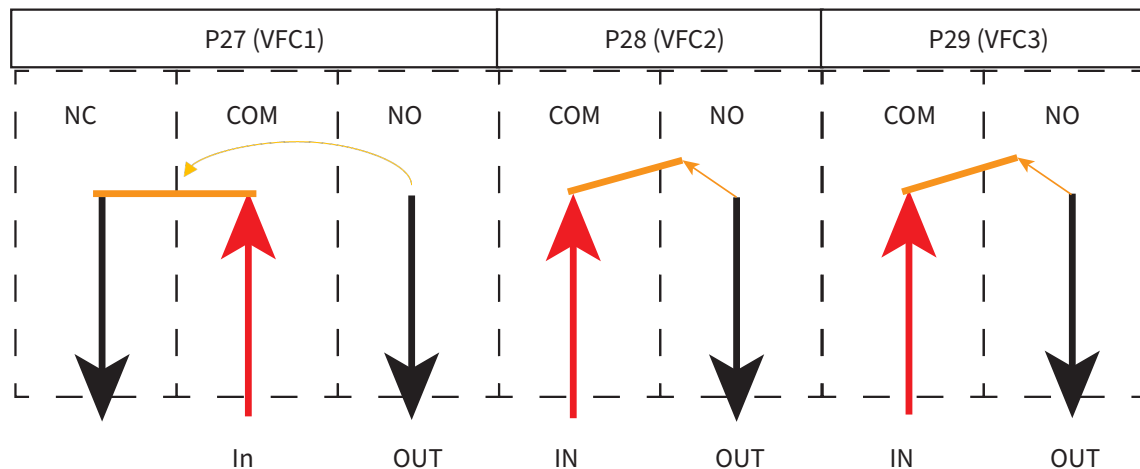
No Fault

(NO) Relay closed at (NO) OUT when controller powered up and running without error



Faulty

(NO) Relay openend at (NO) OUT when controller is powered down, running with error or cable broken





Skirti automato būsenai gauti. Pasirinktinė triktis gali būti priskirta kiekvienai išvesčiai.
P29 išvestis yra > 110 °C režimo katilo blokavimo signalas, šiuo režimu jo negalima naudoti kaip įspėjimo.

3. Belaidžio ryšio konfigūracija ir nuostatos



Konfigūraciją galima atlikti naudojant „Flamconnect“ programėlę.

Norėdami susieti: įveskite slaptažodį. Jis nurodomas automato QR kodo etiketėje arba ekrane.



	Sistemos informacija	Skirta automato ir valdiklio informacijai peržiūrėti	
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Kliento sąsajų ir ryšio protokolų konfigūraciją galima pasiekti valdiklio meniu.

	Priedai	Skirti išplėstiniam automato priedams suaktyvinti	
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3.1 Ryšio sąsajos nustatymai

Eternetas:

IP adresas	192.168.100.150
IP šablonas	255.255.255.0
IP tinklų sietuvas	192.168.100.1

RS-485:

„Flextronic“ yra valdomasis įrenginys.

Įrenginio ID pasirenkama

Sparta bodais 19200

Lyginumas 8-n-1





Tai pačiai sąsajai vienu metu galima priskirti tik vieną protokolą. Prijungus „Remote Service“ tinklų sietuvą, „Modbus“ ir „Bacnet“ nepasiekiami per RS-485. PVS integruoti naudokite eterneto prievadą.

3.2 Skaitmeninių (diskrečiųjų) išvesčių programavimas

Galimoms laisvoms skaitmeninėms (diskrečiosioms) išvestims galima priskirti pasirinktinę (-es) triktį (-is) (klaidas ir įspėjimus). Jei tai pačiai išvesčiai priskirta daugiau nei viena triktis, išvestis suaktyvinama, jei bet kuri tai išvesčiai priskirta triktis yra aktyvi.

Triktis galima konfigūruoti „Flextronic“ meniu.

	<p>Pavojaus signalai</p>	<p>Skirti pavojaus pranešimui (-ams) priskirti prie potencialo neturinčios išvesties (-čių)</p>	
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4. „Modbus“ susiejimo lentelė

4.1 Flamcomat

Register	Access	Name	Type	Unit	Range
0x0001	R	Current working pressure	UINT16	cbar	0..16000
0x0002	R	Current vessel level	UINT16	%	0...100
0x0003	R	Outputs state (1-on)	UINT16		Bit 0: P35 M1 Active (pump/compressor) Bit 1: P36 M2 Active (pump/compressor) Bit 2: P33 V1 active (Valve 1) Bit 3: P34 V2 active (Valve 2) Bit 4: P31 V3 Active (Valve 3/ Refill pump) Bit 8: Degassing On (Enabled)* Bit 9: Degassing mode (0-normal, 1-turbo)*
0x0004	R	Error table 1 1-error active)	UINT16		Bit 0: Single pump/ compressor maximum run time error Bit 1: Redundant pumps/ compressor maximum run time error Bit 2: Load dependant pumps/ compressor maximum run time error Bit 3: Single pump/ compressor current error Bit 4: Pump A current error (double pump/ compressor configuration) Bit 5: Pump B current error (double pump/ compressor configuration) Bit 6: Pumps A and B current error (double pump/ compressor configuration) Bit 7: Pump C/ compressor current error Bit 8: Self-learning valve correction error Bit 9: Self-learning pump correction error Bit 10: Pressure sensor current exceeded Bit 11: Pressure sensor no current Bit 12: Load cell current exceeded Bit 13: Load cell no current Bit 14: Pump A/ compressor power consumption too high Bit 15: Pump B/ compressor power consumption too high
0x0005	R	Error table 2 1-error active)	UINT16		Bit 0: Pump C power consumption too high Bit 1: Maximum Runtime P35 M1 exceeded Bit 2: Maximum Runtime P36 M2 exceeded Bit 3: Maximum suplation threaded water amount exceeded Bit 4: Pump running, no decrease of water level in vessel* Bit 5: Valve open, no increase of water level in vessel* Bit 6: Maximum runtime P33 V1 exceeded Bit 7: Maximum runtime P34 V2 exceeded Bit 8: To run quick fill* Bit 9: To run system fill* Bit 10: System run in auto mode Bit 11: Quick system filling active, V to stop* Bit 12: System filling active, V to stop* Bit 13: Manual mode active, press V to start automat Bit 14: Diaphragm rupture Bit 15: Spare

Register	Access	Name	Type	Unit	Range
0x0006	R	Error table 3 (1-error active)	UINT16		Bit 0: Water level increase in vessel without Flamcomat activity* Bit 1: Water level decrease in vessel without Flamcomat activity* Bit 2: Maintenance 1 is due Bit 3: Initial fill failed Bit 4: Maximum refill time exceeded Bit 5: Maximum drain time exceeded* Bit 6: No refill flow Bit 7: Amount refill water too much Bit 8: Spare Bit 9: Spare Bit 10: Spare Bit 11: Initial fill active Bit 12: Manual initial fill active Bit 13: System fill timer expired Bit 14: Quick fill timer expired* Bit 15: Maintenance 2 is due
0x0007	R	Error table 4 (1-error active)	UINT16		Bit 0: Maintenance 3 is due Bit 1: Maintenance 4 is due Bit 2: Spare Bit 3: Spare Bit 4: Spare Bit 5: Spare Bit 6: Spare Bit 7: Spare Bit 8: Spare Bit 9: Spare Bit 10: Spare Bit 11: Spare Bit 12: Spare Bit 13: Spare Bit 14: Spare Bit 15: Spare
0x0008	R	Operational hours total	UINT16	hours	
0x0009	R	Availability (0 - No, 1 - Yes)	UINT16		Bit 0: P35 M1 pressure increase Bit 1: P36 M2 Pressure increase Bit 2: P33 V1 (pressure decrease/ compressor valve) Bit 3: P34 V2 (pressure decrease/ compressor valve) Bit 4: P31 V3 (filling pump/ valve) Bit 8: Minimum pressure limiter Bit 9: Diaphragm rupture sensor Bit 10: Maximum temperature sensor
0x000A	R	Pressure setpoint	UINT16	cbar	0..16000
0x000B	R	Minimum water level (absolute)	UINT16	%	
0x000C	R	Level refeeding On (absolute)	UINT16	%	
0x000D	R	Level refeeding Off (absolute)	UINT16	%	
0x000E	R	Minimum level alarm limit	UINT16	%	
0x000F	R	Maximum level alarm limit	UINT16	%	
0x0010	R	Nominal volume of vessel	UINT16	l	
0x0011	R	Operational mode	UINT16		0 - single mode, 1 - redundant mode 2 - load-dependent
0x0012	R	Total refill liters	UINT16	l	
0x0013	R	Total refill minutes	UINT16	minute	

* Not applicable for the Flamcomat MK-U G4

4.2 FlexFiller

Object ID	Access	Object name	Type	Unit	Formatting
OBJECT_ANALOG_VALUE:0	R	"alarms"	U64	Binary	Bit 0: ALR_SYSTEM_PRESSURE_LOW Bit 1: ALR_SYSTEM_PRESSURE_BELOW_MINIMUM Bit 2: ALR_SYSTEM_PRESSURE_BELOW_MINIMUM Bit 3: ALR_SYSTEM_PRESSURE_SENSOR_OOB_HIGH Bit 4: ALR_SYSTEM_PRESSURE_HIGH Bit 5: ALR_SYSTEM_FILL_TIMER_EXPIRED Bit 6: ALR_SAFETY_VALVE_ACTIVE Bit 7: ALR_VESSEL_PRECHARGE_LOST Bit 8: ALR_PUMP_1_OVER_CURRENT Bit 9: ALR_PUMP_2_OVER_CURRENT Bit 10: ALR_PUMP_1_NO_CURRENT Bit 11: ALR_PUMP_2_NO_CURRENT
OBJECT_ANALOG_VALUE:1	R	"warnings"	U64	Binary	Bit 0: WRN_SYSTEM_PRESSURE_HIGH Bit 1: WRN_MAX_AMOUNT_TOPUP_WATER Bit 2: WRN_SYSTEM_PRESSURE_LOW Bit 3: WRN_NUMBER_OF_TOPUPS Bit 4: WRN_SUPPLY_PRESSURE_TOO_LOW Bit 5: WRN_SUPPLY_PRESSURE_TOO_HIGH Bit 6: WRN_SUPPLY_PRESSURE_SENSOR_OOB_LOW Bit 7: WRN_SUPPLY_PRESSURE_SENSOR_OOB_HIGH Bit 8: WRN_SYSTEM_FILL_SELF_LEARNING Bit 9: WRN_MANUAL_MODE Bit 10: WRN_MAXIMUM_TOPUP_TIME_EXCEEDED Bit 11: WRN_NO_TOPUP_FLOW Bit 12: WRN_MAINTENANCE_1_DUE Bit 13: WRN_MAINTENANCE_2_DUE Bit 14: WRN_MAINTENANCE_3_DUE Bit 15: WRN_MAINTENANCE_4_DUE Bit 16: WRN_SYSTEM_FILL_ACTIVE Bit 17: WRN_SYSTEM_FILL_ON_HOLD Bit 18: WRN_ANTI_LEGIONELLA_RUNNING Bit 19: WRN_DEVICE_REBOOT Bit 20: WRN_TANK_LEVEL_SENSOR_OOB_LOW Bit 21: WRN_TANK_LEVEL_SENSOR_OOB_HIGH Bit 22: WRN_PUMP_DRY_RUN Bit 23: WRN_TANK_OVERFLOW Bit 24: WRN_MANUAL_SYSTEM_FILL Bit 25: WRN_PUMP_1_RUNTIME Bit 26: WRN_PUMP_2_RUNTIME Bit 27: WRN_ANTI_LEGIONELLA_RECOVERY
OBJECT_ANALOG_VALUE:2	R	"current system pressure"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:3	R	"current supply pressure"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:4	R	"current tank level"	U16	%	Decimal
OBJECT_ANALOG_VALUE:5	R	"current vacuum pressure"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:6	R	"pressure setpoint"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:7	R	"safety valve setting"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:8	R	"low pressure alarm limit"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:9	R	"high pressure alarm limit"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:10	R	"vessel volume"	U16	l	Decimal
OBJECT_ANALOG_VALUE:11	R	"digital input"	U16	Binary	NA

OBJECT_ANALOG_VALUE:12	R	"digital output"	U16	Binary	Bit 0: P36 (Pump 2 / NC) Bit 1: P35 (Pump 1/MV1 topup valve) Bit 2: P34 (NC) Bit 3: P33 (NC) Bit 4: P32 (NC) Bit 5: P31 (Inlet valve/MV2 Drain Valve) Bit 6: P29 (VFC 1) Bit 7: P28 (VFC 2) Bit 8: P27 (VFC 3)
OBJECT_ANALOG_VALUE:13	R	"accessories"	U32	Binary	NA
OBJECT_ANALOG_VALUE:14	R	"days to next maintenance 1"	U16	count	Decimal
OBJECT_ANALOG_VALUE:15	R	"days to next maintenance 2"	U16	count	Decimal
OBJECT_ANALOG_VALUE:16	R	"days to next maintenance 3"	U16	count	Decimal
OBJECT_ANALOG_VALUE:17	R	"days to next maintenance 4"	U16	count	Decimal
OBJECT_ANALOG_VALUE:18	R	"overall runtime"	U32	h	Decimal
OBJECT_ANALOG_VALUE:19	R	"total filled volume"	U32	ml	Decimal
OBJECT_ANALOG_VALUE:20	R	"refill minutes"	U32	s	Decimal
OBJECT_ANALOG_VALUE:21	R	"activations MV1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:22	R	"activations MV2"	U32	count	Decimal
OBJECT_ANALOG_VALUE:23	R	"runtime MV1"	U32	s	Decimal
OBJECT_ANALOG_VALUE:24	R	"runtime MV2"	U32	s	Decimal
OBJECT_ANALOG_VALUE:25	R	"activations Pump1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:26	R	"activations Pump2"	U32	count	Decimal
OBJECT_ANALOG_VALUE:27	R	"activations Valve1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:28	R	"runtime Pump1"	U32	s	Decimal
OBJECT_ANALOG_VALUE:29	R	"runtime Pump2"	U32	s	Decimal
OBJECT_ANALOG_VALUE:30	R	"runtime Valve1"	U32	s	Decimal
OBJECT_ANALOG_VALUE:31	R	"nrOfNormalTopUps"	U32	count	Decimal
OBJECT_ANALOG_VALUE:32	R	"nrOfEmergencyStops"	U32	count	Decimal
OBJECT_ANALOG_VALUE:33	R	"safetyValveActivations"	U32	count	Decimal
OBJECT_ANALOG_VALUE:34	R	"activationsVfc1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:35	R	"activationsVfc2"	U32	count	Decimal
OBJECT_ANALOG_VALUE:36	R	"activationsVfc3"	U32	count	Decimal
0x0050	R	OverallRuntime_H	U16	h	Decimal (Combine 0x0050&0x0051 to read the full U32 value)
0x0051	R	OverallRuntime_L	U16	h	Decimal (Combine 0x0050&0x0051 to read the full U32 value)
0x0052	R	TotalFilledVolume_H	U16	ml	Decimal (Combine 0x0052&0x0053 to read the full U32 value)
0x0053	R	TotalFilledVolume_L	U16	ml	Decimal (Combine 0x0052&0x0053 to read the full U32 value)
0x0054	R	TotalFillTime_H	U16	s	Decimal (Combine 0x0054&0x0055 to read the full U32 value)
0x0055	R	TotalFillTime_L	U16	s	Decimal (Combine 0x0054&0x0055 to read the full U32 value)
0x0056	R	ActivationsMv1_H	U16	count	Decimal (Combine 0x0056&0x0057 to read the full U32 value)
0x0057	R	ActivationsMv1_L	U16	count	Decimal (Combine 0x0056&0x0057 to read the full U32 value)
0x0058	R	ActivationsMv2_H	U16	count	Decimal (Combine 0x0058&0x0059 to read the full U32 value)
0x0059	R	ActivationsMv2_L	U16	count	Decimal (Combine 0x0058&0x0059 to read the full U32 value)
0x005A	R	RuntimeMv1_H	U16	s	Decimal (Combine 0x005A&0x005B to read the full U32 value)

0x005B	R	RuntimeMv1_L	U16	s	Decimal (Combine 0x005A&0x005B to read the full U32 value)
0x005C	R	RuntimeMv2_H	U16	s	Decimal (Combine 0x005C&0x005D to read the full U32 value)
0x005D	R	RuntimeMv2_L	U16	s	Decimal (Combine 0x005C&0x005D to read the full U32 value)
0x005E	R	ActivationsPump1_H	U16	count	Decimal (Combine 0x005E&0x005F to read the full U32 value)
0x005F	R	ActivationsPump1_L	U16	count	Decimal (Combine 0x005E&0x005F to read the full U32 value)
0x0060	R	ActivationsPump2_H	U16	count	Decimal (Combine 0x0060&0x0061 to read the full U32 value)
0x0061	R	ActivationsPump2_L	U16	count	Decimal (Combine 0x0060&0x0061 to read the full U32 value)
0x0062	R	ActivationsValve1_H	U16	count	Decimal (Combine 0x0062&0x0063 to read the full U32 value)
0x0063	R	ActivationsValve1_L	U16	count	Decimal (Combine 0x0062&0x0063 to read the full U32 value)
0x0064	R	RuntimePump1_H	U16	s	Decimal (Combine 0x0064&0x0065 to read the full U32 value)
0x0065	R	RuntimePump1_L	U16	s	Decimal (Combine 0x0064&0x0065 to read the full U32 value)
0x0066	R	RuntimePump2_H	U16	s	Decimal (Combine 0x0066&0x0067 to read the full U32 value)
0x0067	R	RuntimePump2_L	U16	s	Decimal (Combine 0x0066&0x0067 to read the full U32 value)
0x0068	R	RuntimeValve1_H	U16	s	Decimal (Combine 0x0068&0x0069 to read the full U32 value)
0x0069	R	RuntimeValve1_L	U16	s	Decimal (Combine 0x0068&0x0069 to read the full U32 value)
0x006A	R	NrOfNormalTopUps_H	U16	count	Decimal (Combine 0x006A&0x006B to read the full U32 value)
0x006B	R	NrOfNormalTopUps_L	U16	count	Decimal (Combine 0x006A&0x006B to read the full U32 value)
0x006C	R	NrOfEmergencyStops_H	U16	count	Decimal (Combine 0x006C&0x006D to read the full U32 value)
0x006D	R	NrOfEmergencyStops_L	U16	count	Decimal (Combine 0x006C&0x006D to read the full U32 value)
0x006E	R	SafetyValveActivations_H	U16	count	Decimal (Combine 0x006E&0x006F to read the full U32 value)
0x006F	R	SafetyValveActivations_L	U16	count	Decimal (Combine 0x006E&0x006F to read the full U32 value)
0x0070	R	ActivationsVfc1_H	U16	count	Decimal (Combine 0x0070&0x0071 to read the full U32 value)
0x0071	R	ActivationsVfc1_L	U16	count	Decimal (Combine 0x0070&0x0071 to read the full U32 value)
0x0072	R	ActivationsVfc2_H	U16	count	Decimal (Combine 0x0072&0x0073 to read the full U32 value)
0x0073	R	ActivationsVfc2_L	U16	count	Decimal (Combine 0x0072&0x0073 to read the full U32 value)
0x0074	R	ActivationsVfc3_H	U16	count	Decimal (Combine 0x0074&0x0075 to read the full U32 value)
0x0075	R	ActivationsVfc3_L	U16	count	Decimal (Combine 0x0074&0x0075 to read the full U32 value)

5. „Bacnet“ susiejimo lentelė

5.1 Flamcomat

Object identifier	Access	Object Name	Type	Unit	Range
OBJECT_ANALOG_VALUE:0	R	Current working pressure	UINT16	cbar	0..16000
OBJECT_ANALOG_VALUE:1	R	Current vessel level	UINT16	%	0...100
OBJECT_ANALOG_VALUE:2	R	Outputs state (1-on)	UINT16		Bit 0: P35 M1 active (pump/ compressor) Bit 1: P36 M2 active (pump/ compressor) Bit 2: P33 V1 active (valve 1) Bit 3: P34 V2 active (valve 2) Bit 4: P31 V3 active (valve 3) Bit 8: Degassing On (Enabled)* Bit 9: Degassing mode (0-normal, 1-turbo)*
OBJECT_ANALOG_VALUE:3	R	Error table 1 (1-error active)	UINT16		Bit 0: Single pump/ compressor maximum run time error Bit 1: Redundant pumps/ compressor maximum run time error Bit 2: Load dependent pumps/ compressor maximum run time error Bit 3: Single pump/compressor current error Bit 4: Pump A current error (double pump/ compressor configuration) Bit 5: Pump B current error (double pump/ compressor configuration) Bit 6: Pumps A and B/ compressor current error (double pump c configuration) Bit 7: Pump C/ compressor current error Bit 8: Self-learning valve correction error Bit 9: Self-learning pump/ compressor correction error Bit 10: Pressure sensor current exceeded Bit 11: Pressure sensor no current Bit 12: Load cell current exceeded Bit 13: Load cell no current Bit 14: Pump A/ compressor power consumption too high Bit 15: Pump B/ compressor power consumption too high
OBJECT_ANALOG_VALUE:4	R	Error table 2 (1-error active)	UINT16		Bit 0: Pump C/ compressor power consumption too high Bit 1: Maximum runtime P35 M1 exeeded Bit 2: Maximum runtime P36 M2 exeeded Bit 3: Maximum supplation threaded water amount exceeded Bit 4: Pump/ compressor running, no decrease of water level in vessel Bit 5: Valve open, no increase of water level in vessel Bit 6: Maximum runtime P33 V1 exeeded Bit 7: Maximum runtime P34 V2 exeeded Bit 8: To run quick fill* Bit 9: To run system fill* Bit 10: System run in auto mode Bit 11: Quick system filling active, V to stop* Bit 12: System filling active, V to stop* Bit 13: Manual mode active, press V to start automat Bit 14: Diaphragm rupture Bit 15: Spare

Object identifier	Access	Object Name	Type	Unit	Range
OBJECT_ANALOG_VALUE:5	R	Error table 3 (1-error active)	UINT16		Bit 0: Water level increase in vessel without Flamcomat activity* Bit 1: Water level decrease in vessel without Flamcomat activity* Bit 2: Maintenance 1 is due Bit 3: Initial fill failed Bit 4: Maximum refill time exceeded Bit 5: Maximum drain time exceeded* Bit 6: No refill flow Bit 7: Amount refill water too much Bit 8: Spare Bit 9: Spare Bit 10: Spare Bit 11: Initial fill active Bit 12: Manual initial fill active Bit 13: System fill timer expired* Bit 14: Quick fill timer expired* Bit 15: Maintenance 2 is due
OBJECT_ANALOG_VALUE:6	R	Error table 4 (1-error active)	UINT16		Bit 0: Maintenance 3 is due Bit 1: Maintenance 4 is due Bit 2: Spare Bit 3: Spare Bit 4: Spare Bit 5: Spare Bit 6: Spare Bit 7: Spare Bit 8: Spare Bit 9: Spare Bit 10: Spare Bit 11: Spare Bit 12: Spare Bit 13: Spare Bit 14: Spare Bit 15: Spare
OBJECT_ANALOG_VALUE:7	R	Operational hours total	UINT16	hours	
OBJECT_ANALOG_VALUE:8	R	Availability (0 - No, 1 - Yes)	UINT16		Bit 0: P35 M1 pressure increase Bit 1: P36 M2 Pressure increase Bit 2: P33 V1 (pressure decrease/ compressor valve) Bit 3: P34 V2 (pressure decrease/ compressor valve) Bit 4: P31 V3 (filling pump/ valve) Bit 8: Minimum pressure limiter Bit 9: Diaphragm rupture sensor Bit 10: Maximum temperature sensor
OBJECT_ANALOG_VALUE:9	R	Pressure setpoint	UINT16	cbar	0..16000
OBJECT_ANALOG_VALUE:10	R	Minimum water level (absolute)	UINT16	%	
OBJECT_ANALOG_VALUE:11	R	Level refeeding On (absolute)	UINT16	%	
OBJECT_ANALOG_VALUE:12	R	Level refeeding Off (absolute)	UINT16	%	
OBJECT_ANALOG_VALUE:13	R	Minimum level alarm limit	UINT16	%	
OBJECT_ANALOG_VALUE:14	R	Maximum level alarm limit	UINT16	%	
OBJECT_ANALOG_VALUE:15	R	Nominal volume of vessel	UINT16	l	
OBJECT_ANALOG_VALUE:16	R	Operational mode	UINT16		0 - single mode, 1 - redundant mode 2 - load-dependent
OBJECT_ANALOG_VALUE:17	R	Total refill liters	UINT16	l	
OBJECT_ANALOG_VALUE:18	R	Total refill minutes	UINT16	minute	

* Not applicable for the Flamcomat MK-U G4

5.2 FlexFiller

Object ID	Access	Oject name	Type	Unit	Formatting
OBJECT_ANALOG_VALUE:0	R	"alarms"	U64	Binary	Bit 0: ALR_SYSTEM_PRESSURE_LOW Bit 1: ALR_SYSTEM_PRESSURE_BELOW_MINIMUM Bit 2: ALR_SYSTEM_PRESSURE_BELOW_MINIMUM Bit 3: ALR_SYSTEM_PRESSURE_SENSOR_OOB_HIGH Bit 4: ALR_SYSTEM_PRESSURE_HIGH Bit 5: ALR_SYSTEM_FILL_TIMER_EXPIRED Bit 6: ALR_SAFETY_VALVE_ACTIVE Bit 7: ALR_VESSEL_PRECHARGE_LOST Bit 8: ALR_PUMP_1_OVER_CURRENT Bit 9: ALR_PUMP_2_OVER_CURRENT Bit 10: ALR_PUMP_1_NO_CURRENT Bit 11: ALR_PUMP_2_NO_CURRENT
OBJECT_ANALOG_VALUE:1	R	"warnings"	U64	Binary	Bit 0: WRN_SYSTEM_PRESSURE_HIGH Bit 1: WRN_MAX_AMOUNT_TOPUP_WATER Bit 2: WRN_SYSTEM_PRESSURE_LOW Bit 3: WRN_NUMBER_OF_TOPUPS Bit 4: WRN_SUPPLY_PRESSURE_TOO_LOW Bit 5: WRN_SUPPLY_PRESSURE_TOO_HIGH Bit 6: WRN_SUPPLY_PRESSURE_SENSOR_OOB_LOW Bit 7: WRN_SUPPLY_PRESSURE_SENSOR_OOB_HIGH Bit 8: WRN_SYSTEM_FILL_SELF_LEARNING Bit 9: WRN_MANUAL_MODE Bit 10: WRN_MAXIMUM_TOPUP_TIME_EXCEEDED Bit 11: WRN_NO_TOPUP_FLOW Bit 12: WRN_MAINTENANCE_1_DUE Bit 13: WRN_MAINTENANCE_2_DUE Bit 14: WRN_MAINTENANCE_3_DUE Bit 15: WRN_MAINTENANCE_4_DUE Bit 16: WRN_SYSTEM_FILL_ACTIVE Bit 17: WRN_SYSTEM_FILL_ON_HOLD Bit 18: WRN_ANTI_LEGIONELLA_RUNNING Bit 19: WRN_DEVICE_REBOOT Bit 20: WRN_TANK_LEVEL_SENSOR_OOB_LOW Bit 21: WRN_TANK_LEVEL_SENSOR_OOB_HIGH Bit 22: WRN_PUMP_DRY_RUN Bit 23: WRN_TANK_OVERFLOW Bit 24: WRN_MANUAL_SYSTEM_FILL Bit 25: WRN_PUMP_1_RUNTIME Bit 26: WRN_PUMP_2_RUNTIME Bit 27: WRN_ANTI_LEGIONELLA_RECOVERY
OBJECT_ANALOG_VALUE:2	R	"current system pressure"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:3	R	"current supply pressure"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:4	R	"current tank level"	U16	%	Decimal
OBJECT_ANALOG_VALUE:5	R	"current vacuum pressure"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:6	R	"pressure setpoint"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:7	R	"safety valve setting"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:8	R	"low pressure alarm limit"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:9	R	"high pressure alarm limit"	U16	mbar	Decimal
OBJECT_ANALOG_VALUE:10	R	"vessel volume"	U16	l	Decimal
OBJECT_ANALOG_VALUE:11	R	"digital input"	U16	Binary	NA

OBJECT_ANALOG_VALUE:12	R	"digital output"	U16	Binary	Bit 0: P36 (Pump 2 / NC) Bit 1: P35 (Pump 1 / Direct drain valve) Bit 2: P34 (NC) Bit 3: P33 (NC) Bit 4: P32 (NC) Bit 5: P31 (Refill / Inlet valve) Bit 6: P29 (VFC 1) Bit 7: P28 (VFC 2) Bit 8: P27 (VFC 3)
OBJECT_ANALOG_VALUE:13	R	"accessories"	U32	Binary	NA
OBJECT_ANALOG_VALUE:14	R	"days to next maintenance 1"	U16	count	Decimal
OBJECT_ANALOG_VALUE:15	R	"days to next maintenance 2"	U16	count	Decimal
OBJECT_ANALOG_VALUE:16	R	"days to next maintenance 3"	U16	count	Decimal
OBJECT_ANALOG_VALUE:17	R	"days to next maintenance 4"	U16	count	Decimal
OBJECT_ANALOG_VALUE:18	R	"overall runtime"	U32	h	Decimal
OBJECT_ANALOG_VALUE:19	R	"total filled volume"	U32	ml	Decimal
OBJECT_ANALOG_VALUE:20	R	"total fill time"	U32	s	Decimal
OBJECT_ANALOG_VALUE:21	R	"activations MV1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:22	R	"activations MV2"	U32	count	Decimal
OBJECT_ANALOG_VALUE:23	R	"runtime MV1"	U32	s	Decimal
OBJECT_ANALOG_VALUE:24	R	"runtime MV2"	U32	s	Decimal
OBJECT_ANALOG_VALUE:25	R	"activations Pump1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:26	R	"activations Pump2"	U32	count	Decimal
OBJECT_ANALOG_VALUE:27	R	"activations Valve1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:28	R	"runtime Pump1"	U32	s	Decimal
OBJECT_ANALOG_VALUE:29	R	"runtime Pump2"	U32	s	Decimal
OBJECT_ANALOG_VALUE:30	R	"runtime Valve1"	U32	s	Decimal
OBJECT_ANALOG_VALUE:31	R	"nrOfNormalTopUps"	U32	count	Decimal
OBJECT_ANALOG_VALUE:32	R	"nrOfEmergencyStops"	U32	count	Decimal
OBJECT_ANALOG_VALUE:33	R	"safetyValveActivations"	U32	count	Decimal
OBJECT_ANALOG_VALUE:34	R	"activationsVfc1"	U32	count	Decimal
OBJECT_ANALOG_VALUE:35	R	"activationsVfc2"	U32	count	Decimal
OBJECT_ANALOG_VALUE:36	R	"activationsVfc3"	U32	count	Decimal

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