4189340298B

DEIF A/S

Alarm

Alarm
INFO

JUMP

START

STOP

DEIF

Basic Gen-set Controller

multi-line BGC

AMF   SEMI-AUTO
G-L1 50.0 Hz   400V
G 0.901 PF   150kW
SETUP   V3   V2   V1

VIEW

LOG

Run   On   On

G ~   Load

SEL

BACK

MODE

Power

Self check ok

Alarm Inh.

Auto

1.

BGC,

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.

DEIF .

BGC.

BGC

BGC.

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BGC.

BGC.

BGC .

2.

DEIF

, , BGC, ,

, .

> **BGC.** ,
> .

. .

, multi-line 2

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, .

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

3.

BGC

DEIF.

BGC   ,
                                              -                    ,
       ,   .
        BGC   3-
                                                          .   BGC
                                                                                                                    .
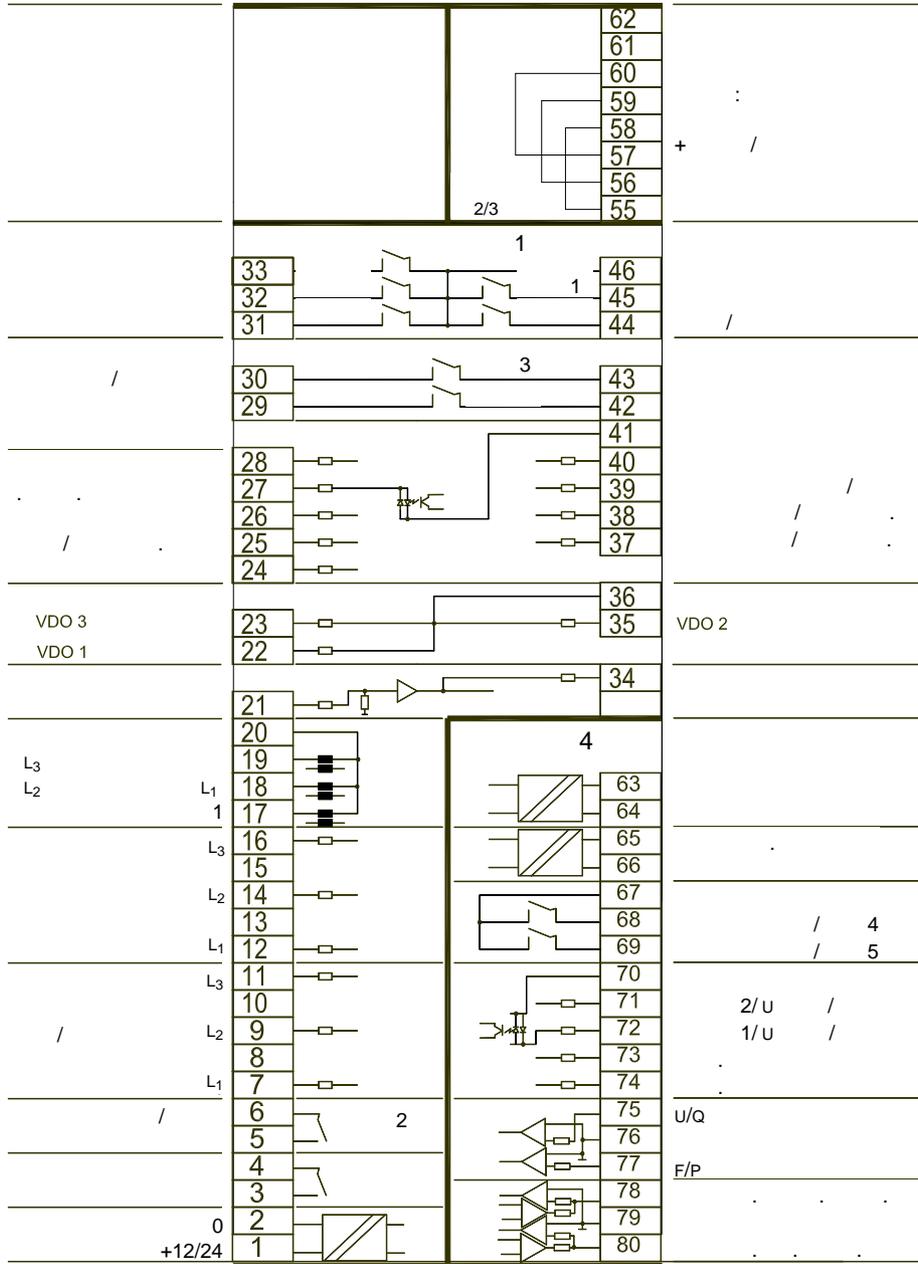
4. BGC

BGC

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BGC.

AMF ( )

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-
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-

/

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- 8 /

-
-
-
-

- , 2
-
- 3 VDO
- :
  - ○
    - 7
  - ○ - 5
    ( )
- (
).

- (–
    ,)
- (/ – ,
    400 ,)

.

/   BGC

1,   2,   3   4.

(i)   2   3   .   .   .   2   3   .

			62
			61
			60
			59	:
			58
			57	+ /
			56
	2/3		55

33	.	1	46
32		1	45
31			44	/

		3	
30			43
29			42
			41

/

28			40	
27			39	/ .
26			38	/ .
25			37	/ .
24				

.   .

/   .

VDO 3	23		36	
VDO 1	22		35	VDO 2
	21		34	
	20			

L_3
L_2 L_1
1

19		4	
18		63	
17		64	

L_3	16	65	.
	15	66	
L_2	14	67	
	13	68	/ 4
L_1	12	69	/ 5
L_3	11	70	
	10	71	2/ U / .
L_2	9	72	1/ U / .
	8	73	.
L_1	7	74	.
/	6	75	U/Q
	5	76	
	4	77	F/P
	3	78	. . .
0	2	79	
+12/24	1	80	. . .

/   2

(i)   4 - 9   (.   ).

2   3   .

2   3

54			62
53			61
52			60

BGC

BGC   .

(. .)	
(. .)	G2
, .	G3
	G2
	G2

		-			( )
(. .)	X	X	X	X
(. .)	X	X	X	X
	X	X		X
, .	X	X		X
	X	X	X	X
	X	X	X	X

ⓘ . 5.

(AMF)

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BGC

. BGC -

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- , , ,

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, BGC .

("mains OK delay U", "mains OK delay f"),

BGC .

:

, .

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BGC,

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. . 32.

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BGC, .

/ ,

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BGC

BGC -

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- , , ,

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, BGC

BGC

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BGC,

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BGC,

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GB BGC

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, BGC

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. BGC -

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BGC.

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BGC,

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BGC,

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BGC -

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BGC.

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BGC,
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. . 32.

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BGC, .
/ ,
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, , BGC
- .
, . BGC. '
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. / .

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BGC,
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. . 32.

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BGC, .
/ ,
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, BGC - .
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, - ,
, - 10%.
, BGC
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. . 32.

:

BGC, .

/ ,

.

BGC.

(   )

(   )

(   )

(   )

P
4-20mA

BGC

(   )

BGC

(   )

BGC

- BGC :
, .

, .

: , ,
/ , BGC.

" " ("Start
eng. + open MB", 4425)

f/U OK

U/f

«   » ("Start engine",   4425)

f/U

BGC
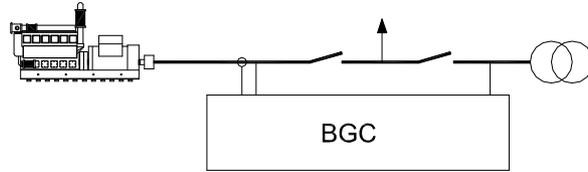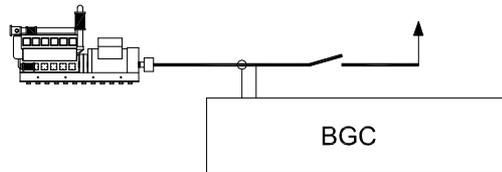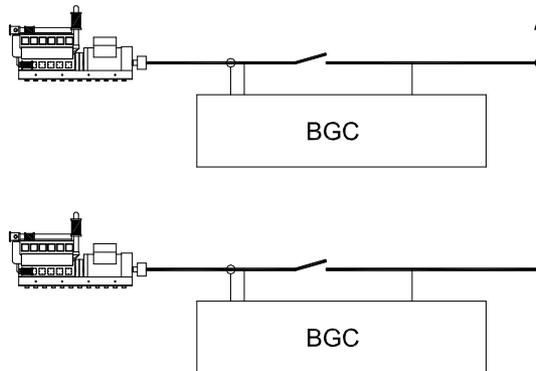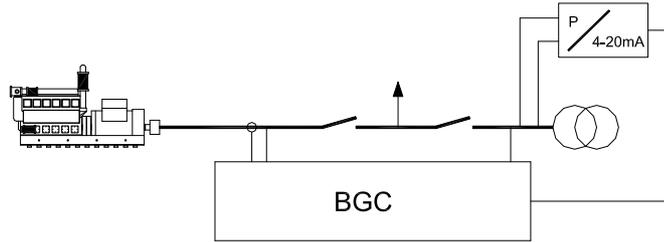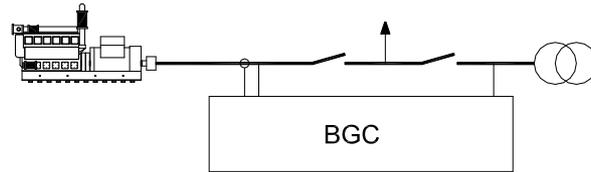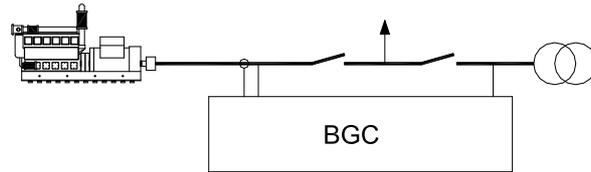
4425.
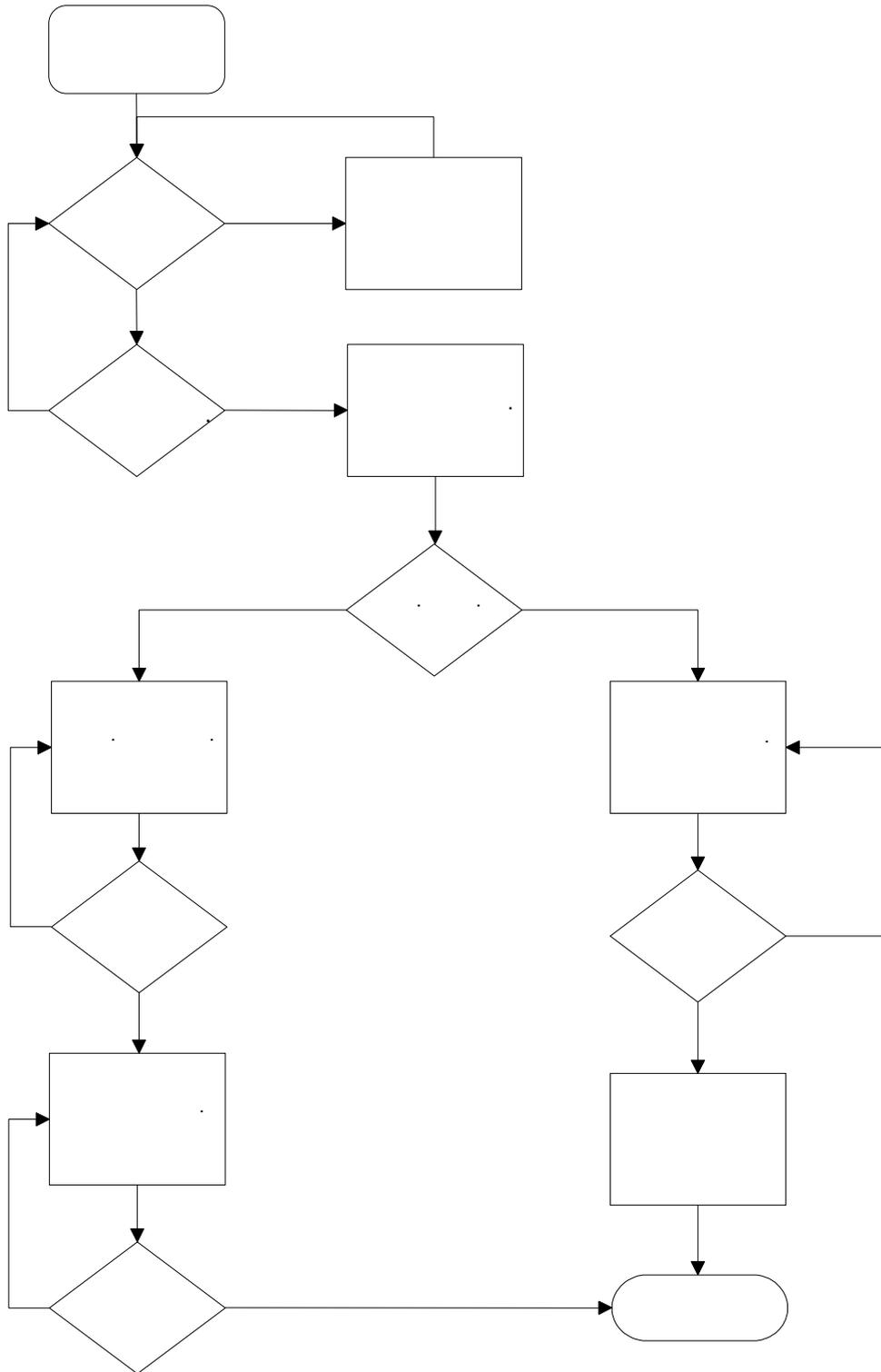
BGC (,
,).
- .
. /
G2 G3.

/ :

1. – BGC,
.
.

2. –
BGC, - , .
.

(f – 1) (49 /59),' BGC
.

f/U OK   f/U

.
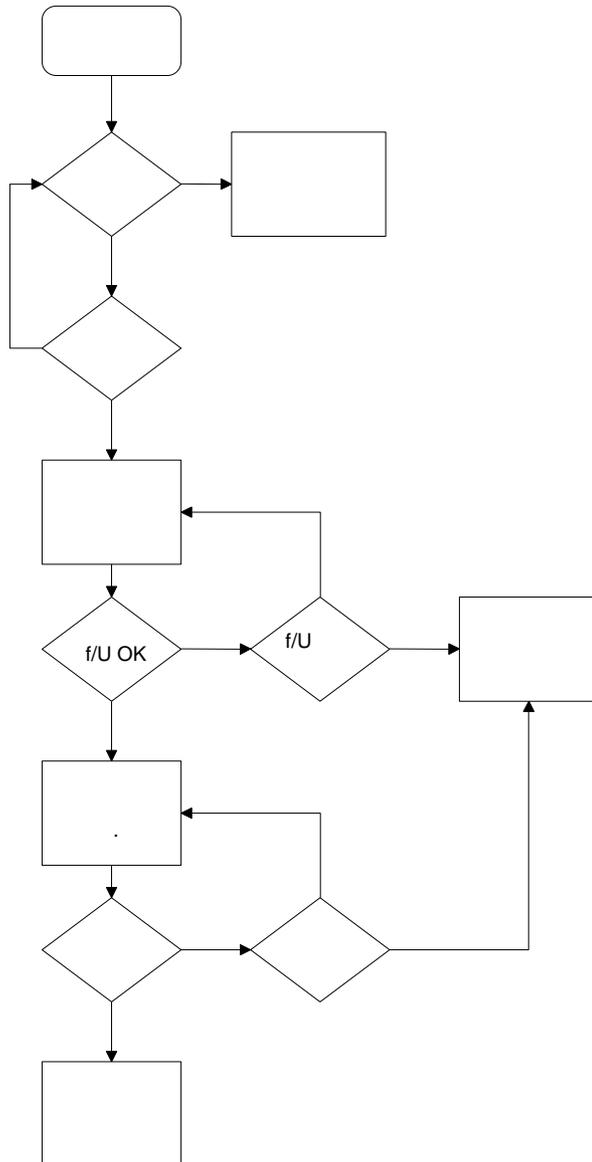
BGC   ,   ,   ·   ,
                                                    ("Start enable").
                ,
              (   ).

5.

4-   20

129 x 248 (   ).

INFO:

JUMP:
BGC.   ,
JUMP
(.   ).

VIEW:
SETUP, JUMP, INFO   LOG (. .   ,
).

LOG: (
,   BGC).
150   BGC.

◁ :   .

△ :   .

SEL: (
).

▽ :   .

▷ :   .

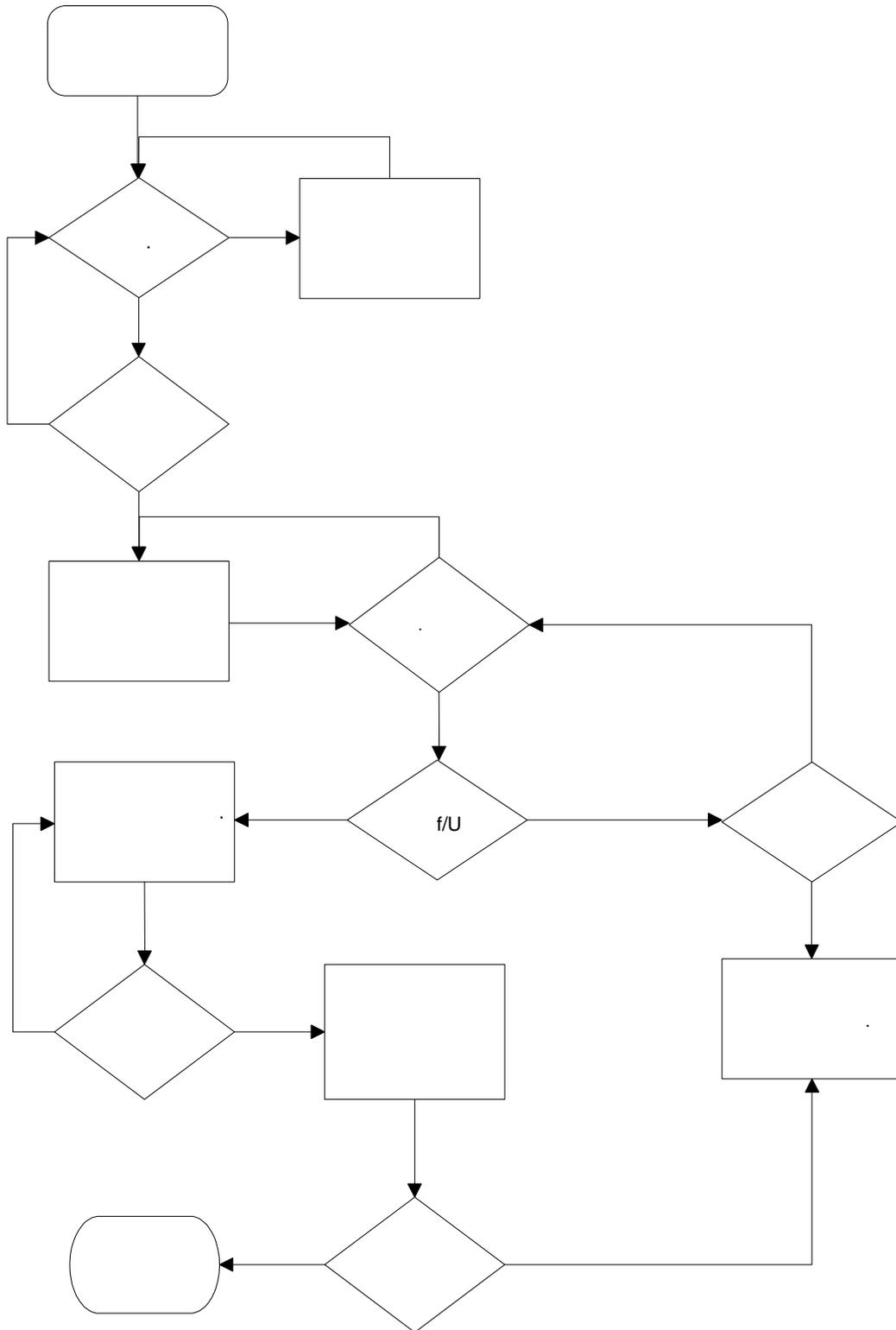BACK: .

START: -   ,   .

STOP: -   ,   .

(GB) ON: ,
.

(MB) ON: ,
.

MODE: BGC: ,   . .
.

INFO:

JUMP:

START:

STOP:

VIEW:

LOG:

SEL:

BACK:

MODE:
                    BGC

10   .

ALARM: ,   .

                    ,

           (   ).
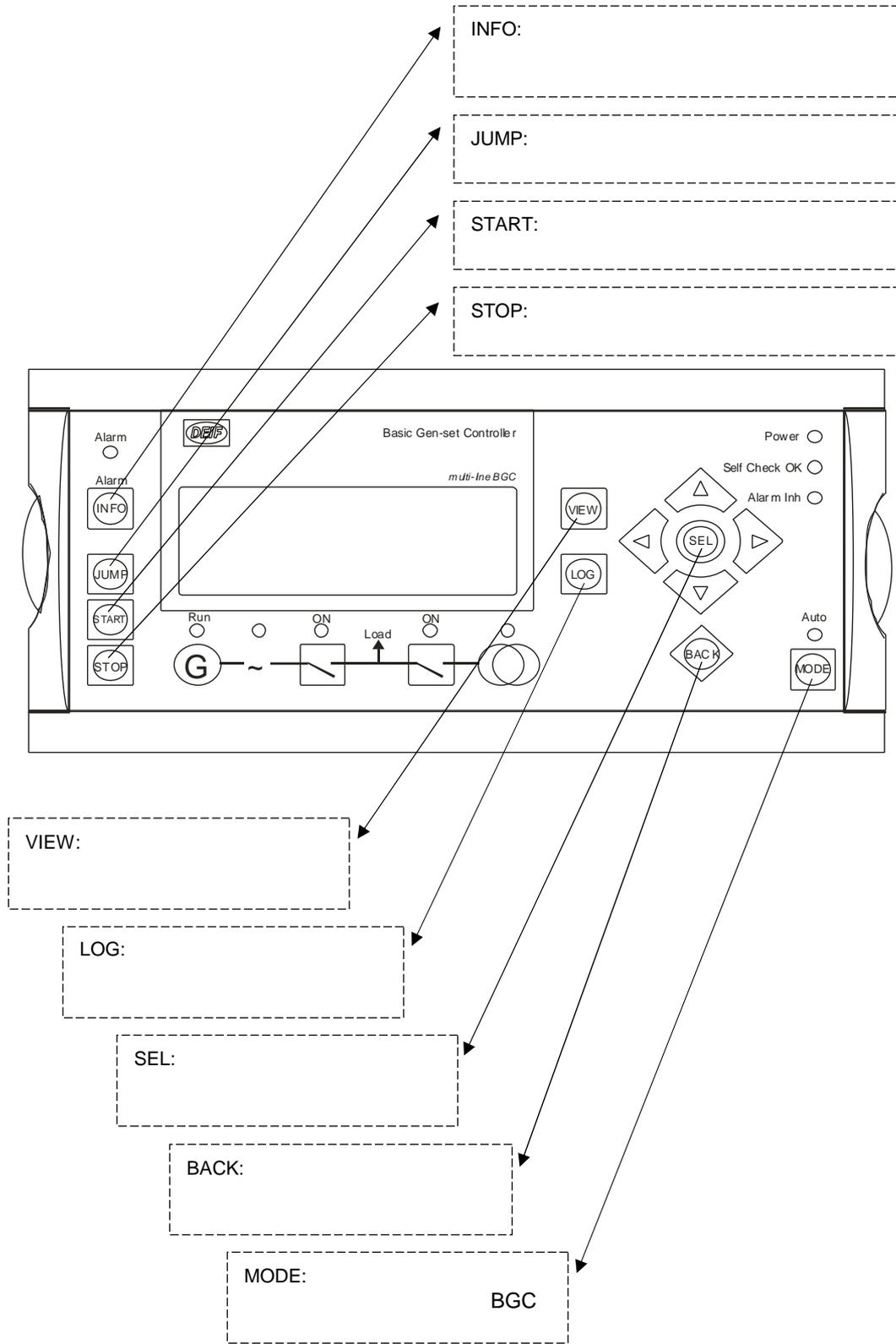
POWER: (   ).

Self check OK: BGC –,   BGC

ALARM INH: ,

                    .

RUN: ,   (   ).

(GEN.) OK: ,   (   ).

(GB) ON: ,   (   ).

(MB) ON: ,   (   ).

(MAINS) OK: -   .

          -          .

          .

AUTO: ,   ,

                    BGC.

.

Alarm:

-

-

Power:

Self check OK: BGC

Alarm inh:

Alarm

<DEIF>   Basic Gen-set Controller

                                              multi-lne BGC

Alarm

(INFO)

(JUMP)

(START)

(STOP)

Run   ON   Load   ON   Auto

G   ~   /   /

(VIEW)   △
           ◁ (SEL) ▷
(LOG)   ▽

Power
Self Check OK
Alarm Inh

(BACK)

(MODE)

U/f   OK

OK

BGC

BGC

.   ,   BGC
.

15
.

⬆ ⬇.
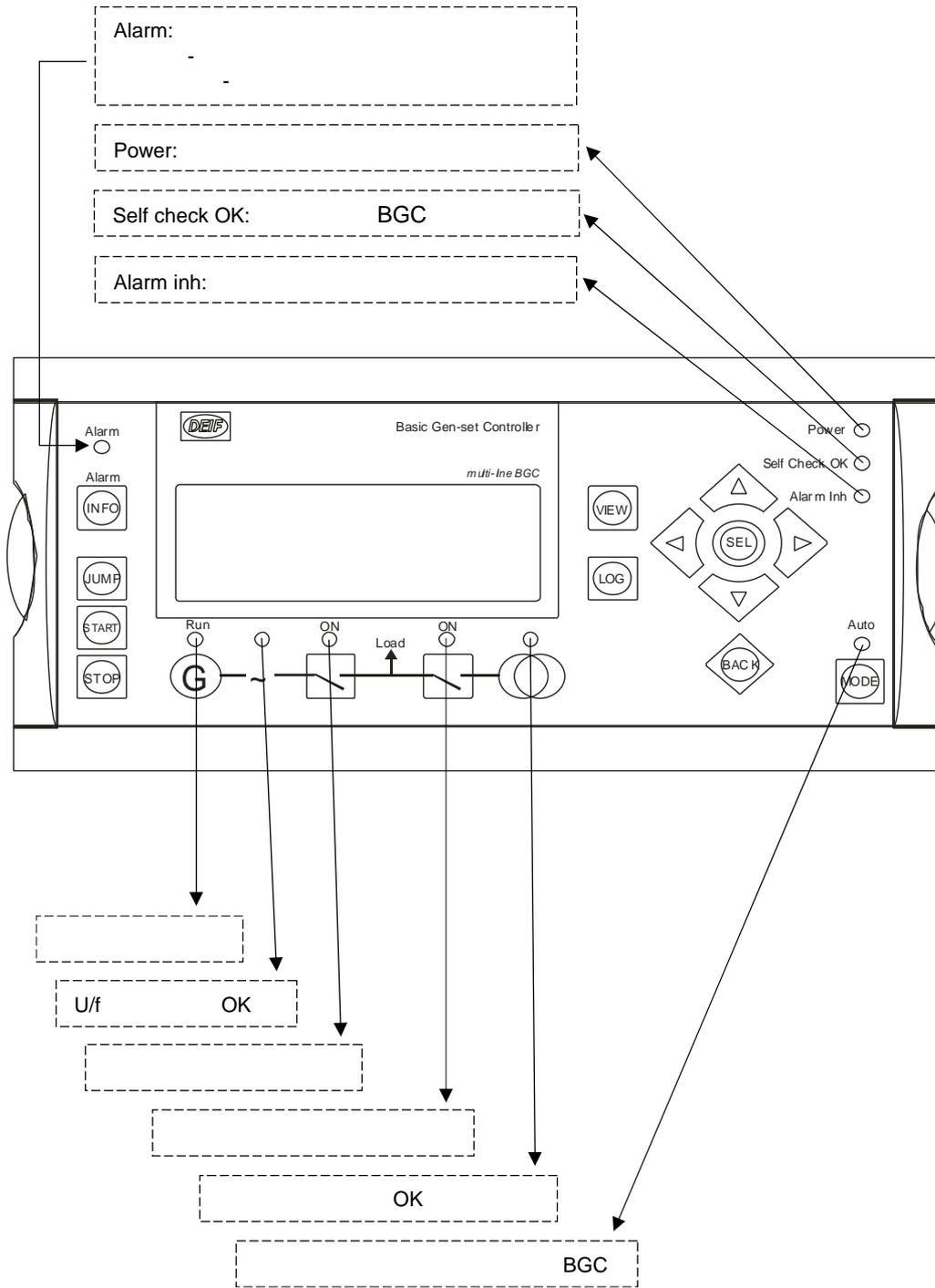
BGC
.
.

.
BGC.   3-   BACK.

ⓘ   ,   BGC
.

```
┌─────────────────────────────────────────┐
│                                          │
│  ┌─────┐              Basic Gen-Set Controller │
│  │DEIF │                                  │
│  └─────┘                                  │
│                           multi-line BGC  │
│  ┌─────────────────────────────────────┐ │
│  │ Gov FIXED FREQ. Int                 │ │
│  │ G  0.80i   PF      745kW            │ │
│  │ G    931kVA     559kvar            │ │
│  │ SETUP   V3      V2      V1          │ │
│  └─────────────────────────────────────┘ │
│                                          │
└─────────────────────────────────────────┘
```

(V1, V2   V3)

.

/

Basic Gen-Set Controller

multi-line BGC

G   440   438   440V
G-L1 50Hz   440V
G-L1 50Hz   440V
SETUP   V3   V2   V1

.

(Utility Software),   .

Device display

Display V1 : View 1

Help

Angle diff.

0 kW
0 A

Configuration of the user views

.

- V1
  - View 1
  - View 2
  - View 3
  - View 4
  - View 5
  - View 6
  - View 7
  - View 8
  - View 9
  - View 10
  - View 11
  - View 12
  - View 13
  - View 14
  - View 15
- V3
  - View 1
  - View 2
  - View 3
  - View 4
  - View 5

B-L1
G-L1
G 0.

,
.
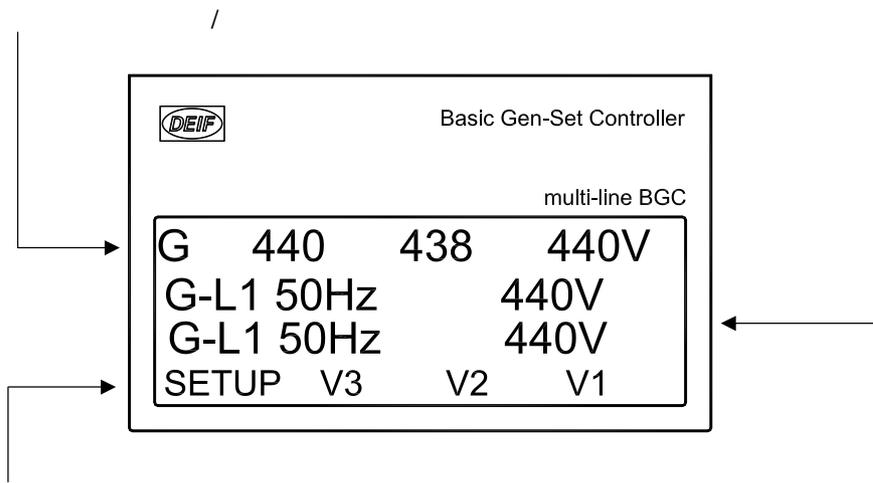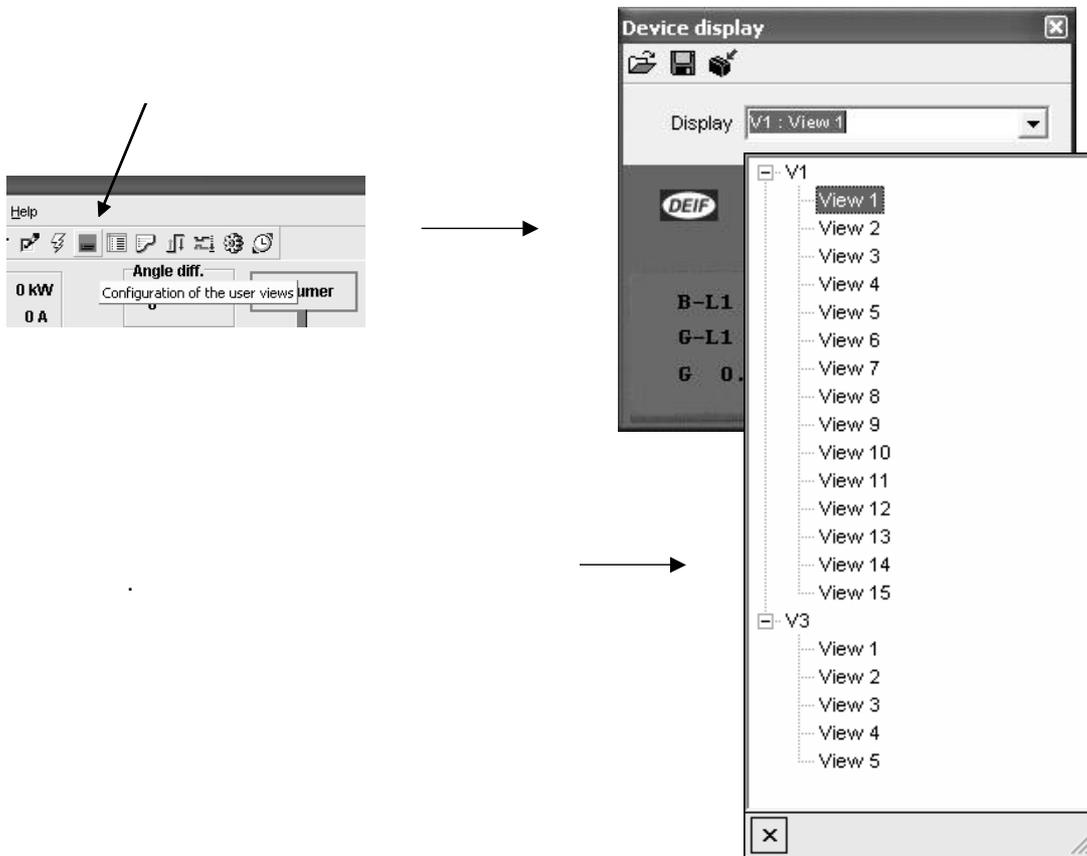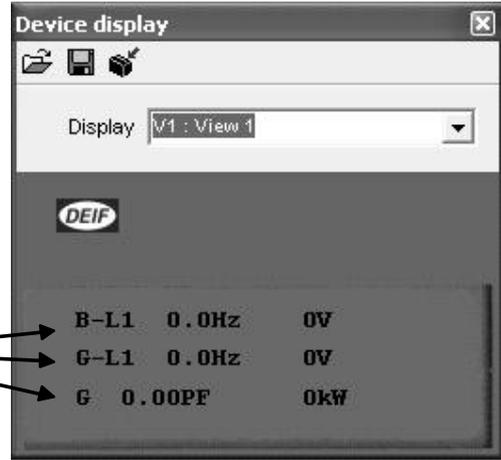
ⓘ   –   ' BGC   .

        ,   ,   . 27
              .

                3-   "No text" («   »),
                  .

ⓘ   15   V1   5   V3.

	V1
1	
2	/
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

V2	V3
BGC	BGC
:	:
1. 1 ( )	1. 1 ( )
2. 2 (.)	2. 2 (.)
3. 3 (/)	3. 3 (/)
4. 4	4. 4
5. 5 (*)	5. 5 (*)
.	.
	1
	1…5. 2
	3 -

*

                           ,
     .

V1   4   15   .

```
┌─────────────────────┐   ┌─────────────────────┐   ┌─────────────────────┐   ┌─────────────────────┐
│ BGC        V. 1.00  │   │      MANUAL         │   │ G   150   140  150A │   │ G   440   438  440V │
│                     │──▶│ B  440   438  440V  │──▶│ B  440   438  440V  │──▶│ G-L1 50Hz      440V │
│ 2003-06-01 09.35.54 │◀──│ G  439   438  440V  │◀──│ G  440   438  440V  │◀──│ B-L1 50Hz      440V │
│ SETUP  V3  V2   V1  │   │ SETUP  V3  V2   V1  │   │ SETUP  V3  V2   V1  │   │ SETUP  V3  V2   V1  │
└─────────────────────┘   └─────────────────────┘   └─────────────────────┘   └─────────────────────┘
```

SEL   BACK

```
┌─────────────────────┐
│ G   439   440  440V │
│    f-L1 50.02Hz     │
│ PROTECTION SETUP    │
│ PROT CTRL PWR SYST  │
└─────────────────────┘
```

```
┌─────────────────────┐
│ GOV   BASELOAD   int│
│ AVR   FIXED PF   int│
│ SETUP   V3   V2   V1│
└─────────────────────┘
```

```
┌─────────────────────┐
│ G   150   140  150A │
│ G   0.90PF    103KW │
│                     │
│ SETUP   V3   V2   V1│
└─────────────────────┘
```

```
┌─────────────────────┐
│ U-SUPPLY 24V        │
│                     │
│ SETUP   V3   V2   V1│
└─────────────────────┘
```

...   . (. 15)

, , , .

4-

BGC   :

▪   - «SETUP»:
    •   (PROT)
    •   (CTRL)
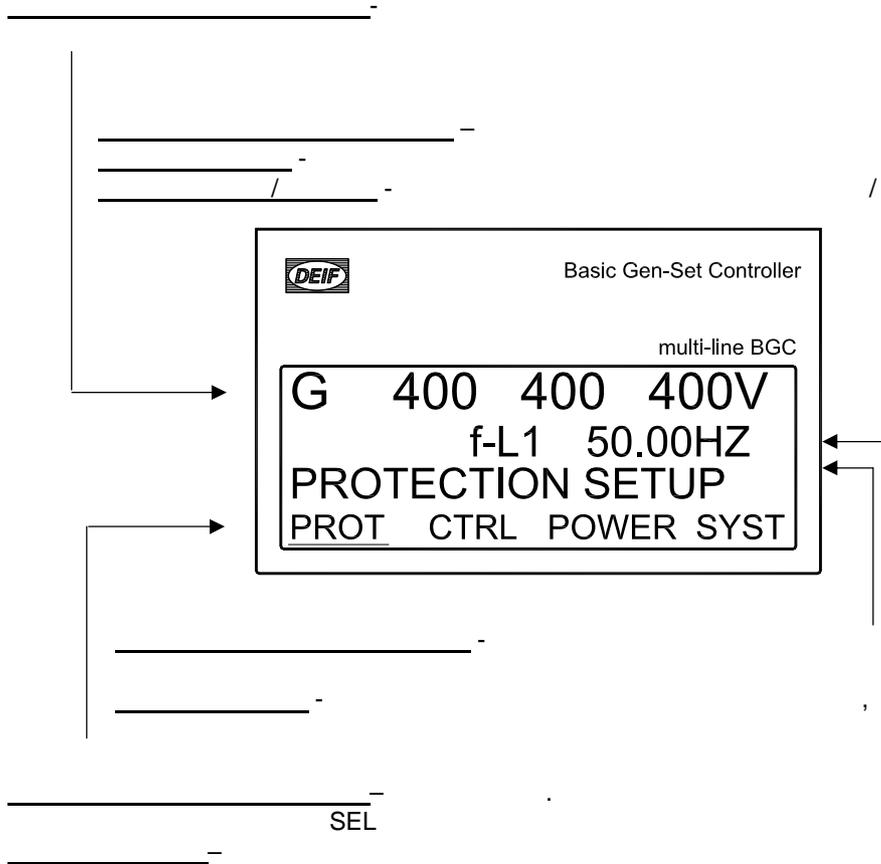   •   (POWER)
    •   (SYST)

▪   V3 –   ,

▪   V2–   BGC

▪   V1–   ,   .

	I		
L1-N (VAC)	L1-N (VAC)	1	
L2-N (VAC)	L2-N (VAC)	2	
L3-N (VAC)	L3-N (VAC)	3	
L1-L2 (VAC)	L1-L2 (VAC)	4	
L2-L3 (VAC)	L2-L3 (VAC)	5	
L3-L1 (VAC)	L3-L1 (VAC)	6	
max. (VAC)	max. (VAC)	7	
min. (VAC)	min. (VAC)	8	
L1 (A)	(Hz)	PT 100 . 1	
L2 (A)	L1-L2 (.)	PT 100 . 2	
L3 (A)			
L1 (Hz)	(.)		
L2 (Hz)			
L3 (Hz)	(VDC)		
(kW)			
(kvar)			
(kVA)			
(kWh)			
L1-L2 (.)			
L2-L3 (.)			
L3-L1 (.)			
(h)			
.			

BGC

.

SETUP
«SEL».

_____-

_____–
_____-
_____/_____-   /

Basic Gen-Set Controller

multi-line BGC

G   400   400   400V
        f-L1   50.00HZ
PROTECTION SETUP
PROT   CTRL POWER SYST

_____-   ,

_____-   ,

_____–   .
                    SEL

_____–

.

, 1010.

```
        ┌─────────────────────────┐
        │                         │
        │  PROT CTRL POWER SYST   │
        │                         │
        └─────────────────────────┘
              │         ▲
            SEL        BACK
              ▼         │
┌──────────────────────────┐          ┌──────────────────────────┐
│ 1010    BUS high-volt 1  │   ──▲──▶  │ 1020    BUS high-volt 2  │
│                          │          │                          │
│ Setpoint      103.0 %    │   ◀──▽──  │ Setpoint      105.0 %    │
│ LIM DEL OA OB ENA FC     │          │ LIM DEL OA OB ENA FC     │
└──────────────────────────┘          └──────────────────────────┘
        │         ▲
      SEL        BACK
        ▼         │
        ◇ first entry ◇ ── Yes ──▶  ┌──────────────────────────┐        ▲ ████████
        │                           │ Enter passw.      1999   │
        No                          │                          │        ▽ ████████
        │                           │ ENTER                    │
        ▼                           └──────────────────────────┘
┌──────────────────────────┐
│ 1011    BUS high-volt 1  │          ▲  ███████████
│                          │
│ 100.0   103.0   120.0%   │          ▽  ████████████
│ RESET          SAVE      │
└──────────────────────────┘        ◀ ▶  ████████████
```
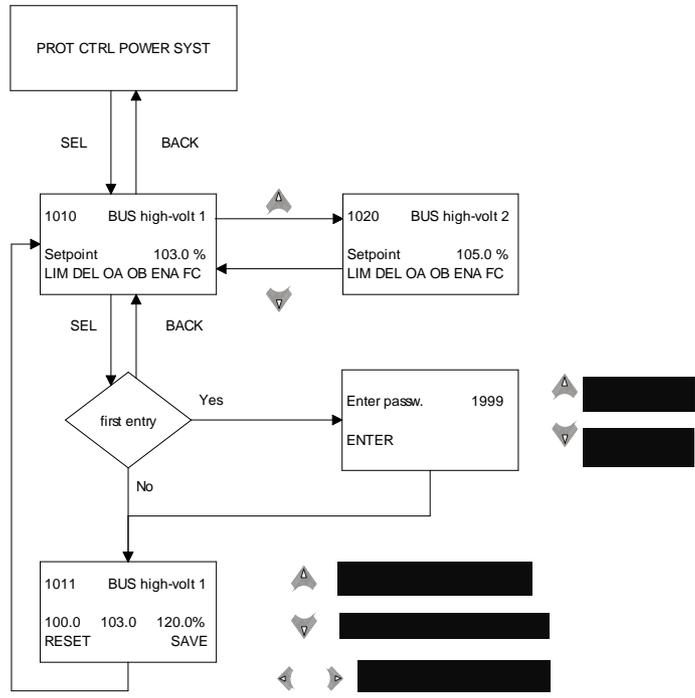
BGC

BGC   :   ,   ,
         .

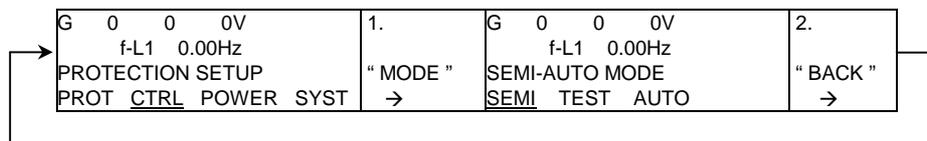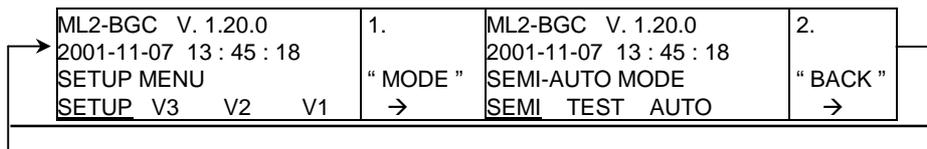   ,
                              ,   .

                                        (,
              ,
).   ,
-   .

         BGC   .

                                                                              ,
    ,   —   GB ON
                                                                    .
, BGC   /   .
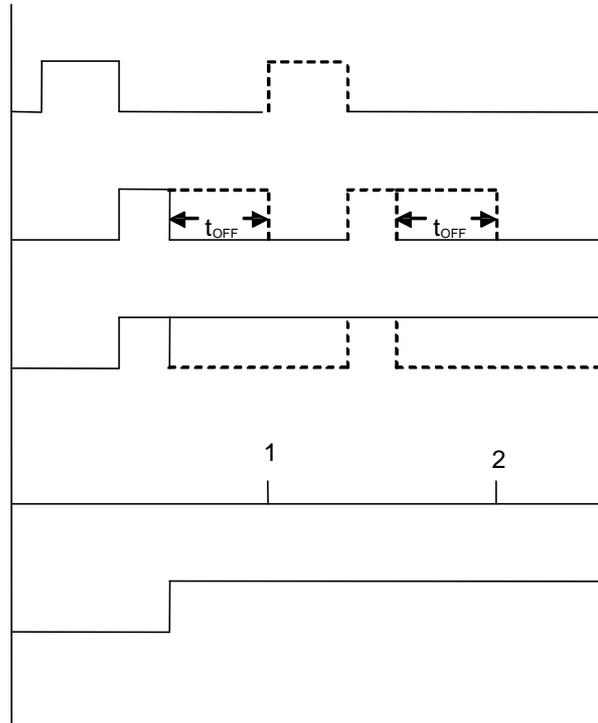   (
                                                                    /   ).

                              ,   .

                    MODE   ,
                                                                    .
         .

                                                    :

                    "BACK",   .

ML2-BGC V. 1.20.0	1.	ML2-BGC V. 1.20.0	2.
2001-11-07 13 : 45 : 18		2001-11-07 13 : 45 : 18	
SETUP MENU	" MODE "	SEMI-AUTO MODE	" BACK "
SETUP V3 V2 V1	→	SEMI TEST AUTO	→

G 0 0 0V	1.	G 0 0 0V	2.
f-L1 0.00Hz		f-L1 0.00Hz	
PROTECTION SETUP	" MODE "	SEMI-AUTO MODE	" BACK "
PROT CTRL POWER SYST	→	SEMI TEST AUTO	→

                    " SEL ",   (   )   ,
                                                        .
                        .

| ML2-BGC   V. 1.20.0
2001-11-07 13 : 45 : 18
SETUP MENU
SETUP   V3   V2   V1 | 3.

" MODE "
→ | ML2-BGC   V. 1.20.0
2001-11-07 13 : 45 : 18
SEMI-AUTO MODE
SEMI   TEST   AUTO | 4.

" SEL "
→ |

| G   0   0   0V
     f-L1   0.00Hz
PROTECTION SETUP
PROT CTRL POWER SYST | 3.

" MODE "
→ | G   0   0   0V
     f-L1   0.00Hz
SEMI-AUTO MODE
SEMI   TEST   AUTO | 4.

" SEL "
→ |

BGC   .

.

(Utility Software),

BGC.

(Custimer)	2000	X		
(Service)		X	X	
(Master)		X	X	X

.

.

,   .

.

(Utility Software).   .

Parameter "Reverse power" (Channel 1090)

Setpoint :
-5 %
-50 0

Timer :   10 sec
0,1 100,0

Fail class :   Trip and stop

Output A :   Relay 0

Output B :   Relay 0

Password level :   Master
Master
Service
Customer

Enabled
ON

High Alarm
Inverse proportional

Time elapsed : 0 sec (0 %)
0 sec ...... 10 sec

Write   OK   Cancel

Utility Software

:

,   .

6.

BGC.

/

,   BGC   .

8   /
4710-4780.   :

- :   ,   ,   ,   ,   ,   ,   (MO, TU, WE, TH, FR, SA, SU)
- :
  - MO, TU, WE, TH (,   ,   ,   )
  - MO, TU, WE, TH, FR (,   ,   ,   ,   )
  - MO, TU, WE, TH, FR, SA, SU (,   ,   ,   ,   ,   ,   )
  - SA, SU (,   )

          /   .
                    ,   (   )
   «Timer OFF»   «Timer ON»   BGC:
      ,   «Timer ON»,   - «Timer OFF».

                                        MODE
      .

                          -   .
                                    ,   –   ,
      ,   G2/G3 (   ),
                                    .

                                                            3070:

- 3072: Timer.   .
- 3071: Limit   (   ).
- 3073: Tesy sync   .
                ,   BGC
                              .   ,
      .   ,   BGC   .

                                                            /   ,
      /   ,   ,
                                                      BGC,   .

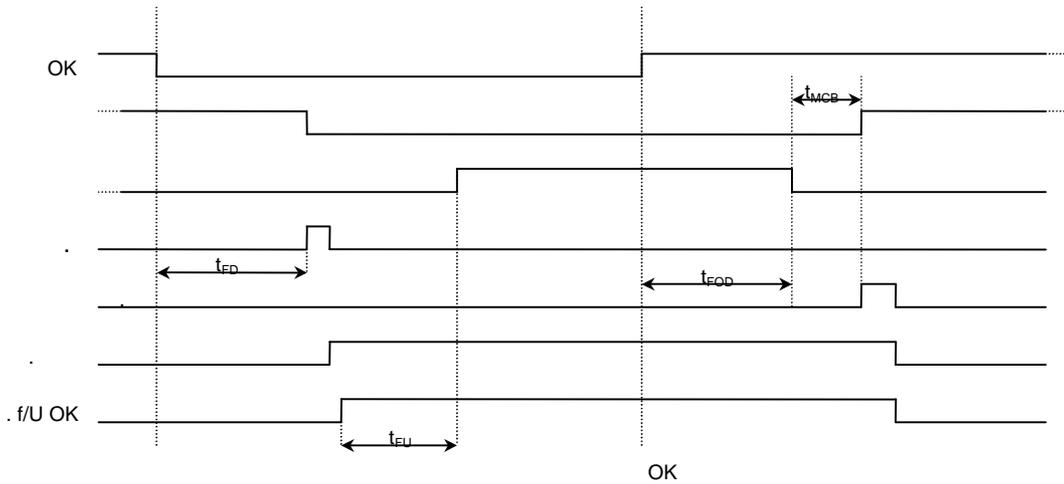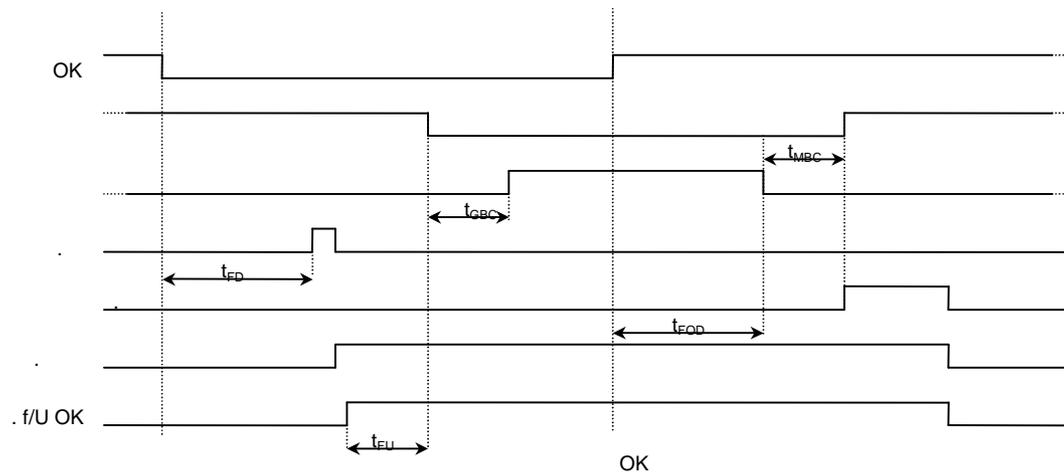   ,
                              (,   START:
).

                                                            :

-
-
-                /
                                    ,   'MB closed'   ,
          (Not used),   12/24   .

– 'Mains breaker failure'.

BGC (,).

:   /

t_{OFF} t_{OFF}

1   2

:   /

1   2

:   /

:   /

:
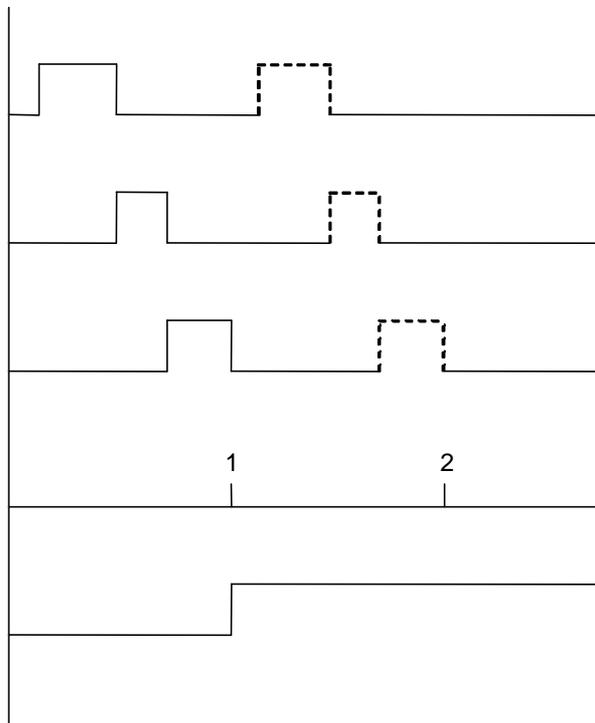
	, 4351

	30
	BGC ,
	30% U
	                                  ,
	          ,

STOP	
START	, (/)

(i)   ,   ,
                                                                4351.
                    (26   ,   ,
).

                    -                          (4370).
          ,   .
(OA)   B (OB)   ,   4370.   A
                                                  .

          (4364)
BGC   :

	.
	, .
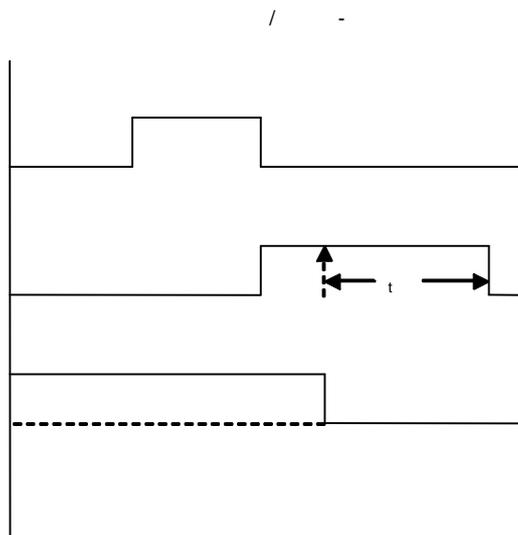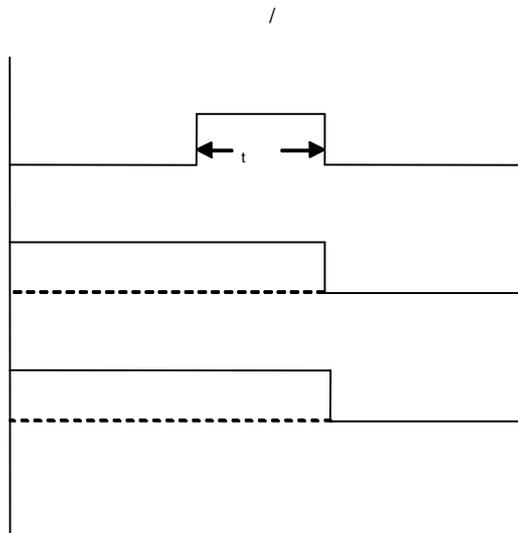
		X	X	
		X	X	
– /				
STOP			X	
			X	/

		X	

:

	/
START	,
	/

«   »

,
BGC
.
4410.   A (OA)   B
(OB)   ,
.

/

BGC:

		BGC
		,

.

U   f   2050.

BGC   :

BGC   :
GB   MB,   BGC,
,

,   .
,   .

(4420).

/ (Start eng.+ open MB)	
(Start engine)	.
	, ,

/   /   .

.

/   .

t_{FD}		4421/4431
t_{FU}	/	4381
t_{FOD}		4422/4432
t_{GBC}		4461
t_{MBC}		4442

t_{MBC} ,   (4443).

1:                4425 - Start eng.+ open MB (/   ):

OK

t_{MCB}

.

t_{FD} t_{FOD}

.

. f/U OK

t_{FU}

OK

2:                4425 - Start engine (   ):

OK

t_{MBC}

t_{GBC}

.

t_{FD}

.

t_{FOD}

.

. f/U OK

t_{FU}

OK

/

/   .

/

:

	/
	/
,	/
,	/
	:
,	: /

BGC

BGC   ,
.   ,
.   4030

Emergency Operation -   (4031)
.
,   ,   -
,
(.   ).

Collective fault -   (4032)
,   ,   BGC
:   ;
-                ;   ;   .

Ready for operation -   (4033)
,   ,
(.   ), BGC   (   )
)   .

BGC   ,
,   (   ).
.
.   11
.
Utility   Software.
BGC   .
BGC   .
(4240).

,

:

(,   BGC).

:

11   .

:

BGC   .

,

.

:

11   (   ).

(Utility Software)

Translations (   )

(.   ):

,   .
PAGE DOWN/UP   .

                        :

                                                                                (Tacho).

- 'Tacho'   'Omdr_pr_min'
- 'RPM'   'Omdr'

                ,   .

                tacho

                        1-   .

(   ).
                            ,   BGC.

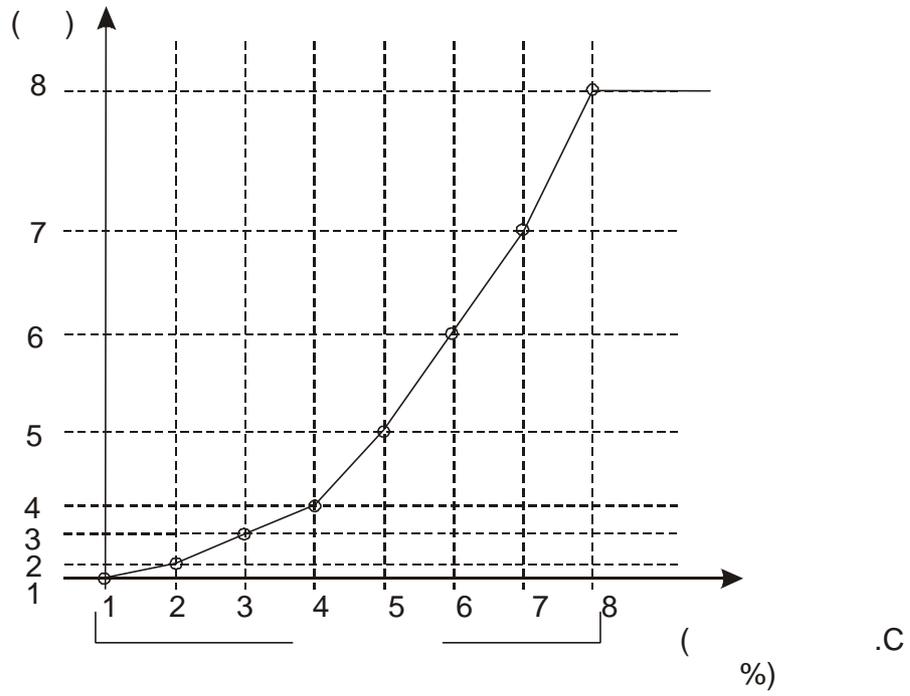BGC   ,   .

                                                                                                    BGC

                                              .

			5
	: 1 1	:	
	: _	:	7

ⓘ   .

1		X	X	X	X	
2						
3		X	X	X	X	
4						
5		X	X	X	X	
6		X	X	X	X	
7		X	X	X	X	
8		X	X	X	X	
9	. .	X	X	X	X	
10	.	X	X	X	X	
11	/	X				
13					X	
14					X	
15					X	
16					X	
17	f/P	X	X			
18	U/Q	X	X			
19			X			
20		X	X	X	X	
21	1….7	X	X	X	X	
22		X	X	X	X	
23		X		X		

BGC

1. Fire pump (   )

                                       -               ,

                        BGC

                    (C1).

                                    .

2. Generator breaker closed feedback (   )

                    .   ,   .

3. Generator breaker open feedback (   )

                                        (-   ),

                                                    .   ,

              .

4. Mains breaker closed feedback (   )

.   ,   .

5. Mains breaker open feedback (   )

(-   ),

.   ,

.

6. Engine running feedback (   )

.

,   .

7. Start enable (   )

,

.

8. Emergency stop (   )

,

,   .

9. Ext. communications control (   )

,   BGC   .

.

10. Alarm acknowledge (   )

.

11. Start/stop input (/   )

.   -

.

,   BGC

.

13. Manual GOV increase (   )

-

.

14. Manual GOV decrease (   )

-

.

15. Manual AVR increase (   )

.

16. Manual AVR decrease (   )

.

17. External f/P setpoint (f/P)

f/U (4).

.

18. External U/Q setpoint (U/Q)

U/Q (4).

.

19. Deload (   )

,   -   ,

.

20. Parameter shift (   )

(BGC   ).

21. Digital inputs 1 … 7 (1…7)
                                                                (
).
        .

22. Access lock (   )
                                                    ,   BGC:
                                                                          ,   ,
                                                          .

23. Mode shift (   )
                                                                      :   -   -
        (   ).   4441
              .

(Utility Software).

              .
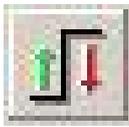
                                                                    ,   ,
                    . Not used –   ,
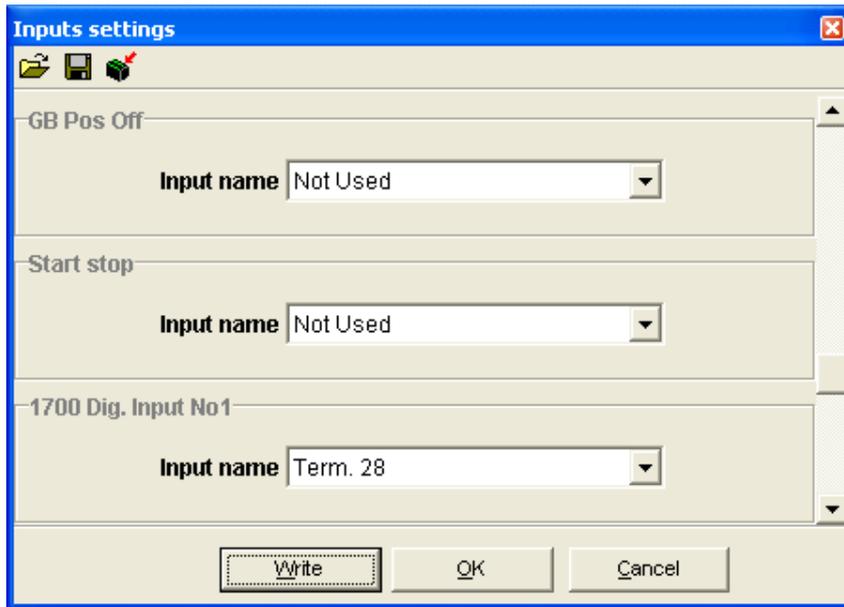
VDO

   BGC
          VDO.
                  .

, , .

VDO 1:
VDO 2:
VDO 3:

VDO 1

VDO .

	VDO		
	Type 1	**Type 2**	**Configurable**
0	10.0	10.0	
0.5	27.2		
1.0	44.9	31.3	
1.5	62.9		
2.0	81.0	51.5	
2.5	99.2		
3.0	117.1	71.0	
3.5	134.7		
4.0	151.9	89.6	
4.5	168.3		
5.0	184.0	107.3	
6.0		124.3	
7.0		140.4	
8.0		155.7	
9.0		170.2	
10.0		184.0	

(i)   8   .

	VDO
	level switch
>200	
<200	

VDO 2

VDO .

	VDO			
	Type 1	**Type 2**	**Type 3**	**Configurable**
°C				
40	291.5	480.7	69.3	
50	197.3	323.6		
60	134.0	222.5	36.0	
70	97.1	157.1		
80	70.1	113.2	19.8	
90	51.2	83.2		
100	38.5	62.4	11.7	
110	29.1	47.6		
120	22.4	36.8	7.4	
130		28.9		
140		22.8		
150		18.2		

(i)   8   .

	VDO
	level switch
<1.7k	
>1.7k	

VDO   3

VDO   .

	VDO
	Type 1
0%	78.8
100%	1.6

	VDO
	Type 2
0%	3
100%	180

	VDO
	onfigurable
%	
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	

(i)   8   .

VDO

VDO   .
                                                            .

        VDO   1   –
                : 1350/1360
        VDO   2:   .
                    : 1370/1380
        VDO   3:   –
                    : 1390/1410

                                        .   (. 2).

        :

( )

8 ·······························○····

7 ····························○·······

6 ·····················○·············

5 ···············◇···················

4 ··········○························

3 ······○····························

2 ···○·······························

1 ○·································

    1   2   3   4   5   6   7 8

(.C
%)

VDO

.

,   .

BGC.

    .

    1.   -   ( )
      BGC   ,   .

    2.   -   ( )
      BGC   ,   .

High alarm

,

,

.

    .
    .

+ V DC

BGC
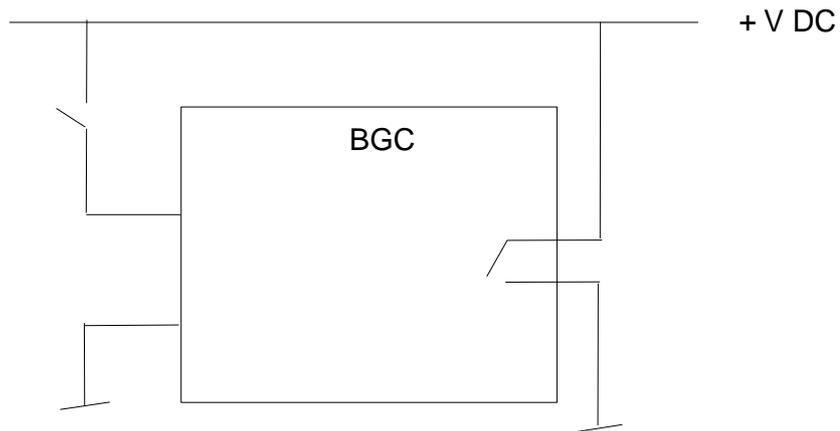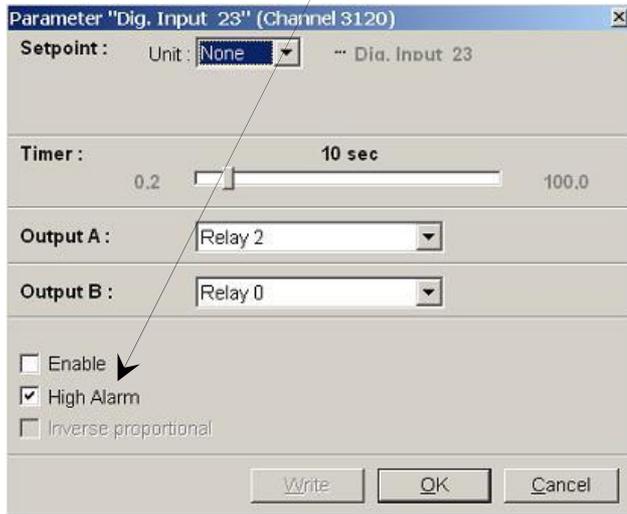
,   BGC,

(Fail class).

, BGC
.

5 :

		.	.		.		
(Fail Class)						.	
(Alarm)	X	X	X				
(Warning)		X					
. (Trip GB)	X	X			X		
(Trip and stop)	X	X		X	X	X	
(Shut down)	X	X			X		X

BGC, .

Fail class
.

.

.
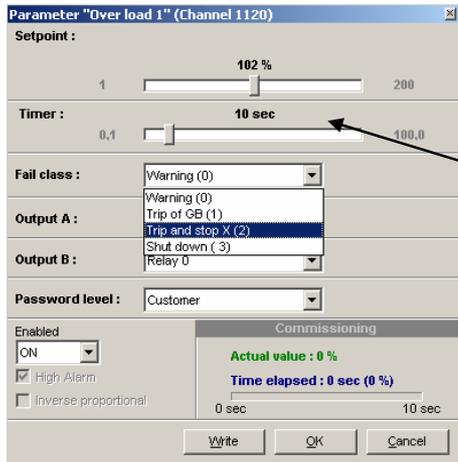
BGC   .

BGC:

	1	**2**
.	4011	4021
.	4012	4022
.	4013	4023
.	4014	4024
	1420	1430

BGC (Parameter shift).   (.
).   1.   ,
          ,   ,   2.

,

,   .

	1	**2**
	1421	*1431*
	1422	1422
A	1423	1423
B	1424	1424
	1425	1425
.	1426	1426

BGC   .
:

4910 –   1
4920 –   2

JUMP.
                  :
1.   ,   (   );
2.   ,

,   BGC
,
(-   ).
(Reset)   ON.

,   BGC   .

GSM-

BGC   GSM-   . BGC   SMS-
(5-   )   .
BGC GSM-   Siemens MC35 (
900/1800   ).

BGC — RS 232- — GSM
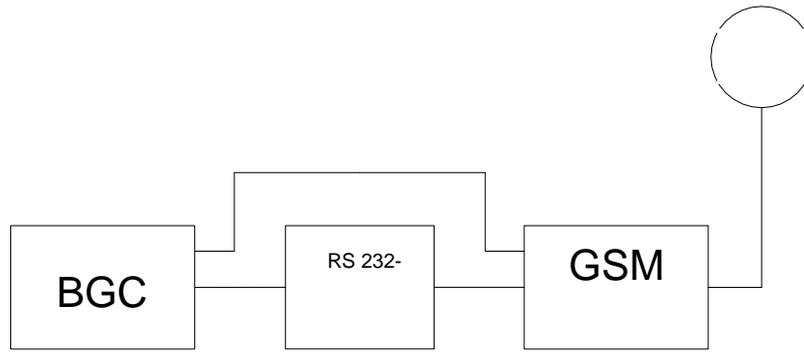
DEIF A/S   Siemens MC35, . .
.

BGC   GSM   RS-232   (J5).

GSM   BGC (
BGC   ).

BGC

+ 12/24   → BGC   1

                 → BGC   2
                 → BGC   1

                 → BGC   2

Rs232   →
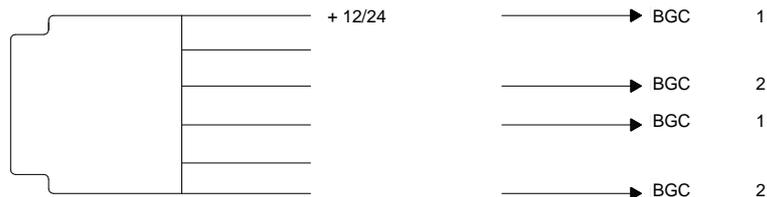
4790	GSM PIN	PIN	GSM	
5111	12345678901		1	
5121	12345678901		2	
5131	12345678901		3	
5141	12345678901		4	
5151	12345678901		5	

'+'   '00',   +7

PIN

                 BGC   PIN   (
). PIN   4790.

GSM-

GSM- BGC,

.

Utility Software.

BGC

RTU ASCII. 6020.

JUMP (

). «1» . ASCII

6020

No.		.	.	
6020	Service port	0 ( )	1 ( )	0

ⓘ 6020 1 BGC ,

, .

.

BGC

.

:
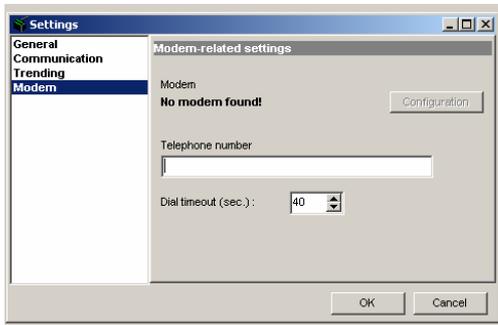
BGC,

, ,

.

BGC

(C1).

- 1 1290
- 2 1300

50…350% .

,

10%.

, 1%.

/
(.).
, 3- VDO , 23/36.

- 1401 - , 20%
- 1402 - , 80%

R1 (
). . , , BGC
, .

80 %

20 %

.
, .
(1405)
2%, BGC
, Fuel fill alarm.

t

7.

Min. – max.				,

1490 VDO   **–**   **3**

No.			.	.	
1491		LIM	0.0 bar	10.0 bar	4.0 bar
1492		DEL	0.0 s	100.0 s	5.0 s
1493	A	OA	R0 ( )	R3 (3)	R0 ( )
1494	B	OB	R0 ( )	R3 (3)	R0 ( )
1495		ACT			
1496		FC	1	5	2

ⓘ   ,

                             ,   BGC (
                                                           JUMP).

                                                               .

                                   .

                             ,   .

                                                 .

                                                         1490 VDO input – Fuel level 3

(VDO –   3)

     1:                                       SETUP (   )

     2:                                    PROT   (   )

     3:                ▽   △

     4:                          LIM (   )

     5:

     6:         ▽   △   /

     7:                     ,   ,

8.

.   ,   ,
.

ⓘ   .

:

: .

.

: –

.

A:

B: B

: . ,

, . ,

, .

: BGC

.

1090

No.				.	.		
1091	.	.		-50.0%	0.0%	-	-5.0%
1092	.	.		0.1 s	100.0 s	-	10.0 s
1093	.	.	A	R0 ( )	R3 (3)	-	R0 ( )
1094	.	.	B	R0 ( )	R3 (3)	-	R0 ( )
1095	.	.					
1096	.	.		1	5	-	3

1100 1

No.				.	.		
1101	1			50.0%	200.0%	-	115.0%
1102	1			0.1 s	100.0 s	-	10.0 s
1103	1		A	R0 ( )	R3 (3)	-	R0 ( )
1104	1		B	R0 ( )	R3 (3)	-	R0 ( )
1105	1						
1106	1			1	5	-	2

1110 2

No.				.	.		
1111	2			50.0%	200.0%	-	120.0%
1112	2			0.1 s	100.0 s	-	5.0 s
1113	2		A	R0 ( )	R3 (3)	-	R0 ( )
1114	2		B	R0 ( )	R3 (3)	-	R0 ( )
1115	2						
1116	2			1	5	-	3

1350 VDO   1.1

No.			.	.	
1351	VDO 1.1		0.0 bar	10.0 bar	4.0 bar
1352	VDO 1.1		0.0 s	100.0 s	5.0 s
1353	VDO 1.1	A	R0 ( )	R3 (3)	R0 ( )
1354	VDO 1.1	B	R0 ( )	R3 (3)	R0 ( )
1355	VDO 1.1				
1356	VDO 1.1		1	5	2

1360 VDO   1.2

No.			.	.	
1361	VDO 1.2		0.0 bar	10.0 bar	4.0 bar
1362	VDO 1.2		0.0 s	100.0 s	5.0 s
1363	VDO 1.2	A	R0 ( )	R3 (3)	R0 ( )
1364	VDO 1.2	B	R0 ( )	R3 (3)	R0 ( )
1365	VDO 1.2				
1366	VDO 1.2		1	5	2

1370 VDO   2.1

No.			.	.	
1371	VDO 2.1		40 ^{O}C	150 ^{O}C	100 ^{O}C
1372	VDO 2.1		0.0 s	100.0 s	5.0 s
1373	VDO 2.1	A	R0 ( )	R3 (3)	R0 ( )
1374	VDO 2.1	B	R0 ( )	R3 (3)	R0 ( )
1375	VDO 2.1				
1376	VDO 2.1		1	5	2

1380 VDO   2.2

No.			.	.	
1381	VDO 2.2		40 ^{O}C	150 ^{O}C	110 ^{O}C
1382	VDO 2.2		0.0 s	100.0 s	5.0 s
1383	VDO 2.2	A	R0 ( )	R3 (3)	R0 ( )
1384	VDO 2.2	B	R0 ( )	R3 (3)	R0 ( )
1385	VDO 2.2				
1386	VDO 2.2		1	5	2

1390 VDO   –   1

No.			.	.	
1391	. 1		0 %	100 %	10 %
1392	. 1		0.0 s	100.0 s	10.0 s
1393	. 1	A	R0 ( )	R3 (3)	R0 ( )
1394	. 1	B	R0 ( )	R3 (3)	R0 ( )
1395	. 1				
1396	. 1		1	5	2

1400

No.			.	.	
1401	.	1	0 %	100 %	20 %
1402	.	2	0 %	100 %	80 %
1403	.	A	R1 (1)	R1 (1)	R1 (1)
1404	.				
1405	.		0.1 s	300.0 s	60.0 s

1410 VDO   –   2

No.				.	.	
1411	.	2		0 %	100 %	99 %
1412	.	2		0.0 s	100.0 s	5.0 s
1413	.	2	A	R0 ( )	R3 (3)	R0 ( )
1414	.	2	B	R0 ( )	R3 (3)	R0 ( )

1420

No.				.	.		
1421				1 RPM	2000 RPM	-	1600 RPM
1422				0.2 s	100.0 s	-	15.0 s
1423			A	R0 ( )	R3 (3)	-	R0 ( )
1424			B	R0 ( )	R3 (3)	-	R0 ( )
1425							
1426				1	5	-	5

1430   S2

No.				.	.		
1431				1 RPM	2000 RPM	-	1600 RPM

        S2   ,   .

1440

No.				.	.		
1441	.	.		0.0 s	180.0 s	-	10.0 s
1442	.	.	A	R0 ( )	R3 (3)	-	R0 ( )
1443	.	.	B	R0 ( )	R3 (3)	-	R0 ( )
1444	.	.					
1445	.	.		1	5	-	5

1450

No.				.	.	
1451				0.0 s	60.0 s	0.2 s
1452			A	R0 ( )	R3 (3)	R0 ( )
1453			B	R0 ( )	R3 (3)	R0 ( )
1454						
1455				1	5	5

1490 VDO   –   3

No.				.	.	
1491	.	3		0 %	100 %	90 %
1492	.	3		0.0 s	100.0 s	10.0 s
1493	.	3	A	R0 ( )	R3 (3)	R0 ( )
1494	.	3	B	R0 ( )	R3 (3)	R0 ( )
1495	.	3				
1496	.	3		1	5	2

1700-1760   No1 – No7,

No.				.	.		
17X1	.		0.0 s	100.0 s	-	10.0 s
17X2	.	A	R0 ( )	R3 (3)	-	R0 ( )
17X3	.	B	R0 ( )	R3 (3)	-	R0 ( )
17X4	.					
17X5	.		1	5	-	2
17X6	.	/				

1860

No.				.	.	
1861	.		0.0 s	60.0 s	5.0 s
1862	.	A	R0 ( )	R3 (3)	R0 ( )
1863	.	B	R0 ( )	R3 (3)	R0 ( )
1864	.				

:

1.   ,
       ,   '   '.

2.   ,   .
       ,   A   B   .
   '   ,   '   ,   -
   .   .   4600   .

2050   f/U   -

No.				.	.	
2051	f/U	df max.	0.0Hz	5.0Hz	3.0Hz
2052	f/U	dU max.	2%	10%	5%

(   )
   .   "dU max."
   .

2200

No.					
2201					
2202					

3070

No.				.	.	
3071			1%	100%	80%
3072			0.0 s	990.0 s	300.0 s
3073					

3080 /cosφ

No.				.	.	
3081	.	.	P	0%	100%	100%
3082	.	.	cosφ	0.60	1.00	0.90

4010 1

No.				.	.	
4011	.			48.0Hz	62.0Hz	60.0Hz
4012	.		.	10kW	20000kW	480kW
4013	.			0A	9000A	787A
4014	.		.	100V	25000V	440V

4020 2

No.				.	.	
4021	.	2		48.0Hz	62.0Hz	60.0Hz
4022	.	2	.	10kW	20000kW	480kW
4023	.	2		0A	9000A	787A
4024	.	2	.	100V	25000V	440V

4030

No.				.	.	
4031				R0 ( )	R3 (3)	R0 ( )
4032		.	.	R0 ( )	R3 (3)	R0 ( )
4033				R0 ( )	R3 (3)	R0 ( )

4050

No.					.	.	
4051	.	.	.		100V	25000V	440V
4052	.	.	.		100V	690V	440V
4053	.	.		.	5A	9000A	1000A
4054	.	.			1A	5A	5A

: ,
.

4060

No.				.	.	
4061	.	.		100V	25000V	440V
4062	.	.		100V	690V	440V

: ,
.

4070

No.			.	.	
4071	.				
4072	.				
4073	.				
4074	.	cos			

ⓘ   .

4080   **ID**

No.			.	.	
4081	. . ID	ID	1	247	3
4082	. . ID		9600	19200	9600

.

Profi-   .

4090

No.				.	.	
4091	.	.	.		1.0 s	100.0 s	10.0 s
4092	.	.	.	A	R0 ( )	R3 (3)	R0 ( )
4093	.	.	.	B	R0 ( )	R3 (3)	R0 ( )
4094	.	.	.				

4100

No.			.	.	
4101				MDEC	
				DDEC	
				EMR	
				EDEC III	
				JDEC	
				ScaniaDEC	

4110

.

No.			.	.	
4111			2001	2100	
4112			1	12	
4113			1	31	
4114			0	23	
4115			0	59	

4120

No.			.	.	
4121			0	20000	0
4122			0	20000	0
4123			0	20000	0
4124		kWh			

4220

No.			.	.	
4221	V .		15.0V	24.0V	18.0V
4222	V .		0.0 s	10.0 s	1.0 s
4223	V .	A	R0 ( )	R3 (3)	R0 ( )
4224	V .	B	R0 ( )	R3 (3)	R0 ( )
4225	V .				

4230

No.			.	.	
4231	V .		15.0V	24.0V	18.0V
4232	V .		0.0 s	10.0 s	1.0 s
4233	V .	A	R0 ( )	R3 (3)	R0 ( )
4234	V .	B	R0 ( )	R3 (3)	R0 ( )
4235	V .				

4240

No.				
4241				

4320 -

No.				
4321		.	.	-
		. .	. .	-

4350

No.			.	.	
4351	.		1 RPM	4000 RPM	RPM
4352	.	-	0	500	0

.
.
0,
. ' ' . **!**
. ' ' . 2.

4360

No.			.	.	
4361		.	0.0 s	600.0 s	5.0 s
4362		.	1.0 s	30.0 s	5.0 s
4363		.	1.0 s	99.0 s	5.0 s

' , ' , ' ,
, . ,
, . ,
. ,
' , - .

4370

No.			.	.	
4371			1	10	3
4372		A	R0 ( )	R3 (3)	R0 ( )
4373		B	R0 ( )	R3 (3)	R0 ( )

A B .

4380 f/U

No.			.	.	
4381	f/U OK		1.0 s	99.0 s	5.0 s

, 2050.

4390 f/U

No.			.	.	
4391	. f/U		1.0 s	99.0 s	30.0 s
4392	. f/U	A	R0 ( )	R3 (3)	R0 ( )
4393	. f/U	B	R0 ( )	R3 (3)	R0 ( )

f/U, A B. . , 2050.

4400

No.			.	.	
4401		.	0.0 s	999.0 s	240.0 s
4402		.	1.0 s	99.0 s	5.0 s
4403					

4410

No.			.	.	
4411	.		10.0 s	120.0 s	30.0 s
4412	.	A	R0 ( )	R3 (3)	R0 ( )
4413	.	B	R0 ( )	R3 (3)	R0 ( )

, . .

4420 U ( )

No.				.	.	
4421	. U		. .	1.0 s	990.0 s	5.0 s
4422	. U		. .	10.0 s	990.0 s	60.0 s
4423	. U		.	80%	100%	97%
4424	. U		.	100%	120%	103%
4425	. U		. .	. + .	..	. + .

: f/U . .

4430 f ( )

No.				.	.	
4431	. f		. .	1.0 s	990.0 s	5.0 s
4432	. f		. .	10.0 s	990.0 s	60.0 s
4433	. f			80%	100%	97%
4434	. f			100%	120%	103%

4440

No.			.	.	
4441			.	- -	. .
4442		t$_{MBC}$	0.0 s	30.0 s	0.5 s
4443		. .			

4450

No.			.	.	
4451			0.0 s	990.0 s	20.0 s

0,   ,

,   .

4460

No.			.	.	
4461		t$_{GBC}$	0.0 s	30.0 s	2.0 s

4610...4650   1 – 5

No.			/ .	/ .	
46X1	X				
46X2	X	.	0.0 s	999.9 s	5.0 s

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.   "

.".,

."".

4710…4780   /   1…8

No.			.	.	
47X1	/	x			
47X2	/	x			
47X3	/	x	.		
47X4	/	x	0	23	
47X5	/	x	0	59	

4790 GSM pin

No.			.	.	
4791	GSM pin	GSM pin	0	9999	0

4910   1

No.			.	.	

4911	.				
4912	.	/	10	10000	150
4913	.	/	1	1000	365
4914	.		1	5	2
4915	.	A			
4916	.				

4920   **2**

No.			.	.	
4921	.				
4922	.	/	10	10000	150
4923	.	/	1	1000	365
4924	.		1	5	2
4925	.	A			
4926	.				

5110 SMS

No.			
5111		12345678901	12345678901

            GSM   . 2.

5120 SMS

No.			
5121		12345678901	12345678901

            GSM   . 2.

5130 SMS

No.			
5131		12345678901	12345678901

            GSM   . 2.

5140 SMS

No.			
5141		12345678901	12345678901

            GSM   . 2.

5150 SMS

No.			
5151		12345678901	12345678901

            GSM   . 2.

DEIF A/S