

“ ”



,

-VPT

421412.004

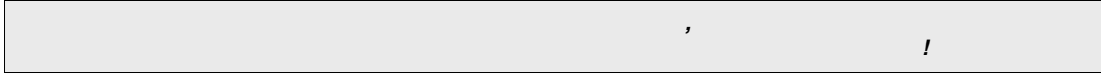


	.....	2
1	.....	3
2	.....	4
	2.1	4
	2.2	5
	2.3	5
	2.4	6
	2.5	6
	2.6	8
	2.7	9
3	.....	9
4	.....	9
	4.1	9
	4.2	10
	4.3	11
5	.....	12
	5.1	12
	5.2	12
6	.....	27
	6.1	27
	6.2	27
	6.3	28
	6.4	28
7	.....	29
	7.1	29
	7.2	29
	7.3	29
	7.4	29
8	.....	30
9	.....	30
	9.1	30
	9.2	30
	9.3	30
	9.4	31
	9.5	31
	9.6	31
	9.7	32
	9.8	34
	9.9	34
	9.10	35
10	.....	36
	1.	37
	2. ()	39
	3.	40
	4.	45
	5.	47
	6. 1-11	51
	7.	52

421412.004

-VPT ()

5.1.



“ ”

:

76000, "C " 67, 38, 39
/ (0342) 775-414, 775-415
e-mail: slot@slot.com.if.ua

1

1.1

); (5542; 2939.

1.2

1.3 GERG-91 NX19 30319.2 (50-213-80)

0,084 1,4 ; 25 ° 60 ° 50-213-80 23,15 ° 60 ° 30319.2; 0,66 / 3 1,05 / 3; 0 % 15 %.

1.4

1000 (W₁₀₀=1,385);

RS-232. -RS232 (.)

1.5

U_{xx} = 3,6 ; = 2 .

1.6

1.7

22782.5, 22782.0, "ib", "1 ibIIAT4" "

4 " 0.00-132-01"

" b

1.8

" OE-VPT- /Lt- - 33.2-19399559-003-2004"

: 0,2 ; 0,7 ; 1,4 ;

Lt - 2858 25 120 ;

Lt = 100 , = 0,7 , 12 25

" -VPT-0,7/100- 12- 25 33.2-19399559-003-2004".

2

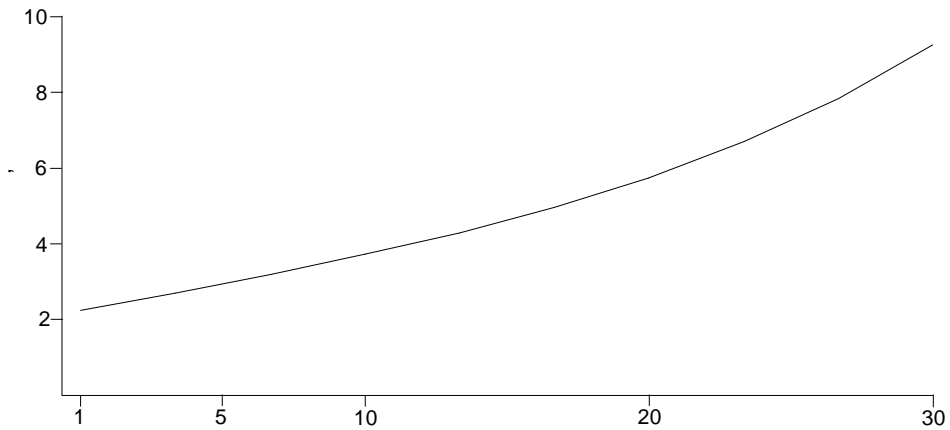
2.1

421412.004.

:
 - 30° 55° ;
 - 95% 35° ;
 - 84 107 .
 :
 - 190 ×135 ×95 ;
 - 70 ×70 ×60 ;
 - 2,0 ;
 - 0,3 ;
 - IP66.
 :
 - 400 / (50 ± 1) ;
 - 0,1 25 .
 :
 - 3,6 .
 , 1

2.1.

:
 - 10 000 ;
 - 10 .



2.1 – (20°C RS-232)

2.1. - 2.1.

	U ,	U ,	I ,	L ,	C ,
-VPT	± 12	24	50	1,0	1,0
-RS232					

1. U , U , I -
 2. , L -

2.2

0,084 ; 1,4 ; 0,084 ; 0,2 ; 0,084 ; 0,7 ;
25° ; 60° ;
(") 1 " " 500 .
(" ") - 50 , - 10,0 .
(EPSON ESP/P),
, -RW RS-232 1200 / ; 2400 / ; 4800
/ 9600 / . 1000
-LRS232.

2.3

) ; (-
) ;
) ;
) ;
) ;
) ;
126 , ; 480, 1150
) ;
1; ,
) ;
(- ,) (1;) (.
) -) , 2046 (.
) - 2; (-),
() 1; , 255 .
-) 1; , :
- ;
- ;
- ;
- 2; ;
) ;
- :
- 0,66 / ³ 1,05 / ³ ;
- 0 % 15%;
- 0,9 1,0;
) - ,

2.4

2.4.1

:

$$q = 3600 \times V \times f \quad (2.1)$$

$$\frac{q}{V} = \dots, \quad \frac{q}{f} = \dots$$

2.4.2

:

$$V = n \times V \quad (2.2)$$

$$\frac{V}{n} = \dots, \quad \frac{V}{V} = \dots$$

2.4.3

:

$$W = V_p + W_0 \quad (2.3)$$

$$\frac{W}{V_p} = \dots, \quad \frac{W}{W_0} = \dots$$

2.4.4

,

:

$$q = \dots \times q_p \quad (2.4)$$

$$V = \dots \times V_p \quad (2.5)$$

$$\frac{q}{V} = \dots, \quad \frac{q}{V} = \dots$$
$$= \frac{p}{0,101325} \times \frac{293,15}{t+273,15} \times \frac{1}{K}$$

$$\frac{p}{t} = \dots$$

GERG-91 ..

NX19 .

30319.2

50-213-80,

2.5

2.5.1

2.5.2

" \ " (1): "Q " - ;

“Q” “Q”

2.5.2.1 $q > Q$:
 $- q = q$, $q -$ () - “ , ” =

“ ” ;
 $- q = Q$ “ ” - “ ” , “ = ” “ () .

q , “ $Q > Q$ ” -

2.5.2.2 “Q” q ”Q” $q = q$,

“ $Q =$ ” -

2.5.2.3 “Q” $< q < Q$:
 $- q = Q$ “ ” - “ Q ” , “ = ” “ ” ;

$- q = q -$, “ Q ” , “ = ” “ ” .

q , “ $Q < Q$ ” -

2.5.2.4 q ”Q” $q = 0$,

“ $Q = 0$ ” - () .

2.5.2.5 “Q” , “ = ” “ ” , “ Q ” .
 $q = Q$ ” , q
“ $Q =$ ” - .

2.5.3

“ ” \ \|” (1):

“P” -

“P” “P” ; “P”

2.5.3.1 $>$ ” ” ” $>$ ” -

“ ” ;
 $=$ - “ ” ;
 $=$ () - $>$ ” ” “ ” , “ = ” “ ” ;
 $=$ ” ” () - $>$ ” ” “ ” , “ = ” “ ”

2.5.3.2 “ ” ” ” = “ = ”

2.5.3.3 $<$ ” ” ” $<$ ” -

“ ” ;
 $=$ - 0,084 ;
 $=$ () - $< 0,084$ “ ” , “ = ” “ ” ;
 $=$ ” ” () - $< 0,084$ “ ” , “ = ” “ ”

2.5.3.4 “ ” , “ = ” “ ” , “ = ” “ ”

2.5.4

t

" " \ \| " (1): " " " " " "

2.5.4.1

t > "t" " "t>t" " -
 :
 - t = t - t 60° ;
 - t = t () - t > 60° " , " = " " ;
 - t = "t" " () - t > 60° " , " = "

2.5.4.2

"t" " t "t" " "t=" " - ,
 t = t .

2.5.4.3

t < "t" " "t<t" " - ,
 :
 - t = t - t t , t = 25° (23,15°) -

80 (

GERG-91 . NX19 .);

- t = t () - t < t " , " = " " ;
 - t = "t" " () - t < t " , " = " " .
 2.5.4.4 "t, " = " " , "t=" " -

2.5.5

K

"K=

K
 " - , :
 - = () - " , " = " " ;
 - = " " () - " , " = " " ;
 - = "K= " - ,
 = .

2.6

2.6.1

:
 - 0,084 0,2 ; 0,084 0,7 ; 0,084
 1,4
 - 40° 70° ;
 - 0 3/ 99999 3/ ;
 - 0 3 99999999 3 .

2.6.2

:
 - -6- 0,00001 ;
 - -4- 0,01° ;
 - -6-
 0,00001;
 - -5- ;
 - -8-
 () : 1,0 3 ; 0,1 3 ; 0,01 3 ; 0,001 3 .

2.6.3

:
 " ; : ' : "

); - ; -

(i , , i , , ,) ; -

2.7

2.7.1

0,7 , 1,4 , 0,084

0,2 .
0,2 ,
± 0,3 %.

2.7.2

± 0,02 %.

2.7.3

± 0,15 %.

2.7.4

± 0,3 ° .

2.7.5

± 5

24

2.7.6

() - 1 ; 2 ; 3 ; 5 ; 10 ; 15 ;

20 ; 30 .

3

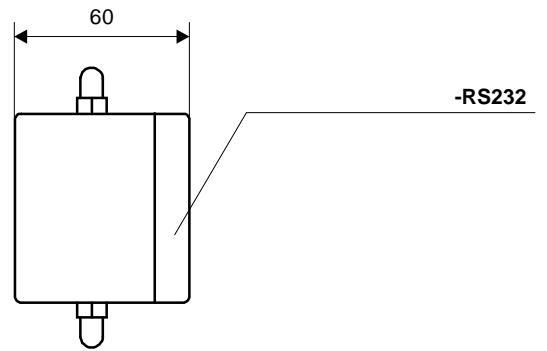
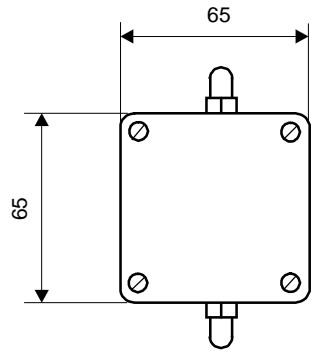
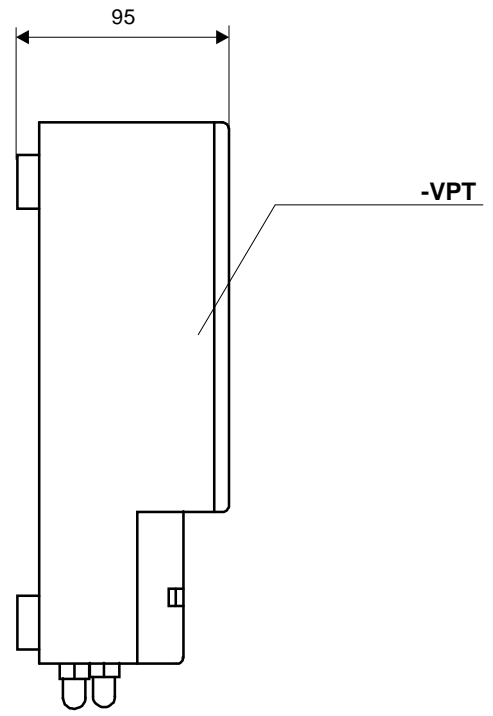
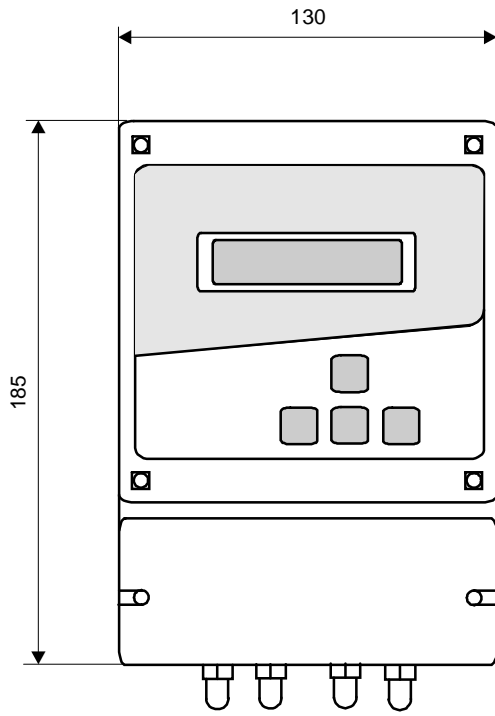
3.1

3.1 -

		-
421412.004	' -VPT	1 .
421412.004	' -VPT.	1 .
421412.004	' -VPT.	1 .
421412.004 1	' O Master	1 .
421941.003		1 .
560160.002	-RS232 (, ,)	1 .
421945.004		1 .

4

4.1

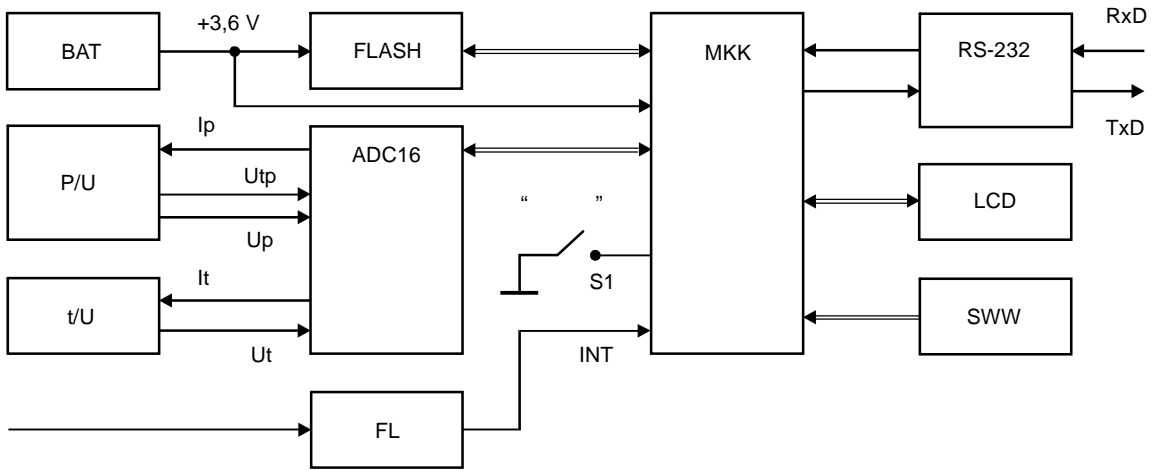


4.1 -

4.2

(4.2) :
 - 3,6 ;
 - FLASH ;
 - 16- RISC , 12-
 - , 16-
 - RS-232;
 - P\U ;
 - t\U ;
 - 16- - ADC16 ;

- S1 " " ;
 - LCD, ;
 - SWW, 4 ;
 - FL .



4.2 -

BAT, i
 P\U, i Ip,
 Up, Utp,
 t\U, It, - Ut. i P\U,
 t\U ADC16 .I i
 FL i INT i
 () , i
 (2.1) - (2.5) i , ,
 , , , , ,
 , i i i i i ,
 i , i i () i , -
 i i i . i i i ' i FLASH
 i i i i i LCD (2 16
 i) . i i SWW.
 i i , i i i i
 RS-232
 S1 " " i "1" - i
 i i (1).

4.3

22782.5, 22782.0,
"1 ibIIAT4" "

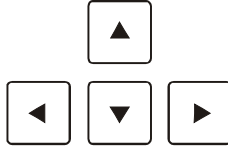
"ib",

" b

5

5.1

(5.1) 4



5.1 -

(5.2)

16

5.2,

"09"

9 0,

"19" -

9

1.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0																
1																
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

5.2 -

"10"

"■",

- "▲".

5.2

5.2.1

5.3

01, , 2006 , 09 : 01 : 01
V=9999999.9 ³ W=9999999.9 ³

5.3 -

2.6.3) - "W", "V", "00", "\"

5.2.2

5.4) 1...N, "1F" 2.

01, 2006, 09:01:01	\ 1 2	...	\ N
--------------------	-------	-----	-----

5.4 - " "

"10", " / "

5.2.3

5.5)

V=9999999.9	3
W=9999999.9	3

P=9.99999	2.5.3
t=±99.99	2.5.4

Qc=999.99	3/	2.5.2
Qp=999.99	3/	

=9.99999	2.5.5
=9.99999	

:	:
---	---

5.5 - " "

"", (2.5), " / "



5.2.6.1

(5.11) 3 8

1) "\ , V, W, P, t - , ' , , V W - ' , , / 0C...0F : " V", " W" " T" = " " = " ;

2) "\ = , - "q Q " "Q < q Q " ("Q q Q ") - " \ //Q " = " ("), "q = Q "; - "P p P " " = P "; - "t t t " "t = t "; - " = " " = " , V W - ' , , ;

> Q

3) "\ = " , - "Q < q < Q " - " \ //Q " = " " , "q " ; - " < " " > " ; - "t < t " "t > t " ; - " = " , V W - ' , , ;

4) "\Q>Q " , - " V W - ' , , ;

5) "\Q<Q " , - " V W - ' , , ;

6) "\P>P " , - " V W - ' , , ;

7) "\P< " , - " V W - ' , , ;

8) "\t>t " , - " V W - ' , , ;

9) "\t<t " , - " V W - ' , , ;

10) "\ = " , - " V W - ' , , ;

11) "*Q,t,P= " , - " V , V , W - ' , , ;

|| = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9	|| , 9.99999	|| t, ° ±99.99	|| , 9.99999	|| V, ³ 9999999.9	|| W, ³ 9999999.9
|| = = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| = = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| Q>Q = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| Q<Q = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| P> = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| P< = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| t>t = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
t<t = : :	V, ³ 9999999.9	W, ³ 9999999.9					
|| K=ABP = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					
|| *P,t,Q= = : :	|| V, ³ 9999999.9	|| W, ³ 9999999.9					

5.11 - “\ ” “ \ ”

“\ ” = “*Q<Q ”.

“ V, ³ ” “ W, ³ ” “ ”

“ ”

“\ ” “U= ”

5.2.6.2 “\ ” “ ” “ ” “ ”

(5.12) M , (N)

(1) ; (,)

- 16

2); “V” , “W”

5.2.6.1.

1									
\\	,	,	:	:	1	2	...	\\	N
								\\	V, 3
									9999999.9
								\\	W, 3
									9999999.9
...		
M									
\\	,	,	:	:	1	2	...	\\	N
								\\	V, 3
									9999999.9
								\\	W, 3
									9999999.9

5.12 - "\\ " " \ "

5.2.6.3

("\\ " " \ " (5.13) ,

- (" 1) ;
 - " " " " ,
 " , " " 1;
 - , "V" , "W"

5.2.6.1.

\\	,	,	:	:	:	:	:	\\	V, 3	\\	W, 3
									9999999.9		9999999.9
...		
\\	,	,	:	:	:	:	:	\\	V, 3	\\	W, 3
									9999999.9		9999999.9

5.13 - "\\ " " \ "

5.2.7

(" " (5.14) ,

\	-	"	"
\	-	"	" , " " " "
\	-	"	" ()
\	-	"	" ()

5.14 - " "

" " - [] [] [] []

5.2.7.1

" \ " []

\\ ?

3.

5.2.7.2

“ \ ” “ \ ” “ \ ”
 ;
 - ;
 - ;
 , 5.2.6 (5.9 5.10),
 “ ”
 ”
 , ,
 ”
 “ ”,
 60
 :

“ ? -

“ , =0 -

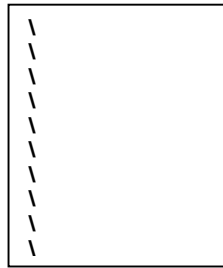
“ = , -

“ , = -

3.

5.2.8

“ ” “ ” “ ”
 (5.15) “ ” “ ”
 “ ”
 “ ”
 “ ”
 “ ”
 “ ”
 “ ”

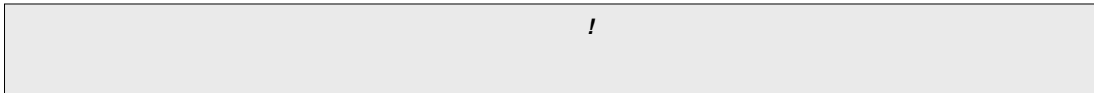


5.15 - “ ”

$$ZM.MMMMEzP, \quad (5.1)$$

- Z -
- M -
- E -
- Z -
- P -

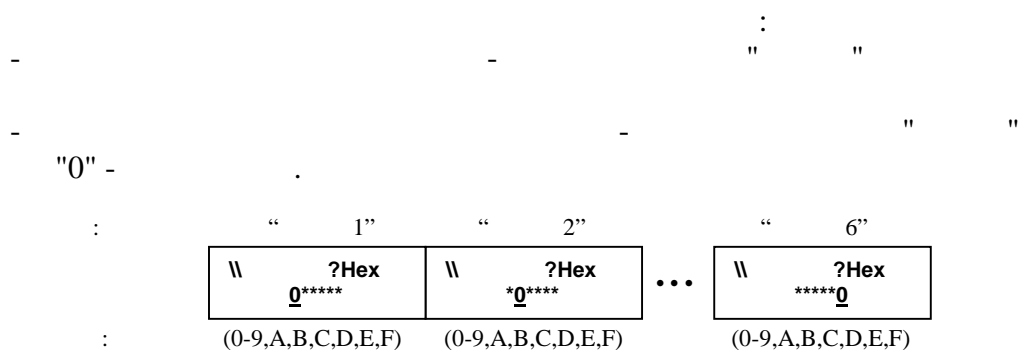
- :
0,012 = -1.2000 -2;
- 1,2 = +1.2000 +0;
- 12,0 = +1.2000 +1;
- 0,0 = +0.0000E+0.



5.2.8.1

(" 5.16) \ "

"1" -

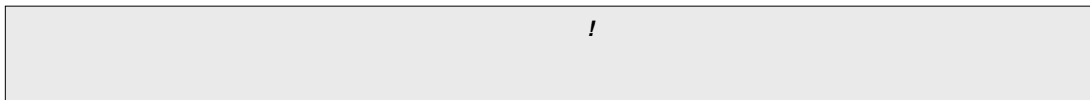


5.16 -

"?",

«6».

\ ?Hex

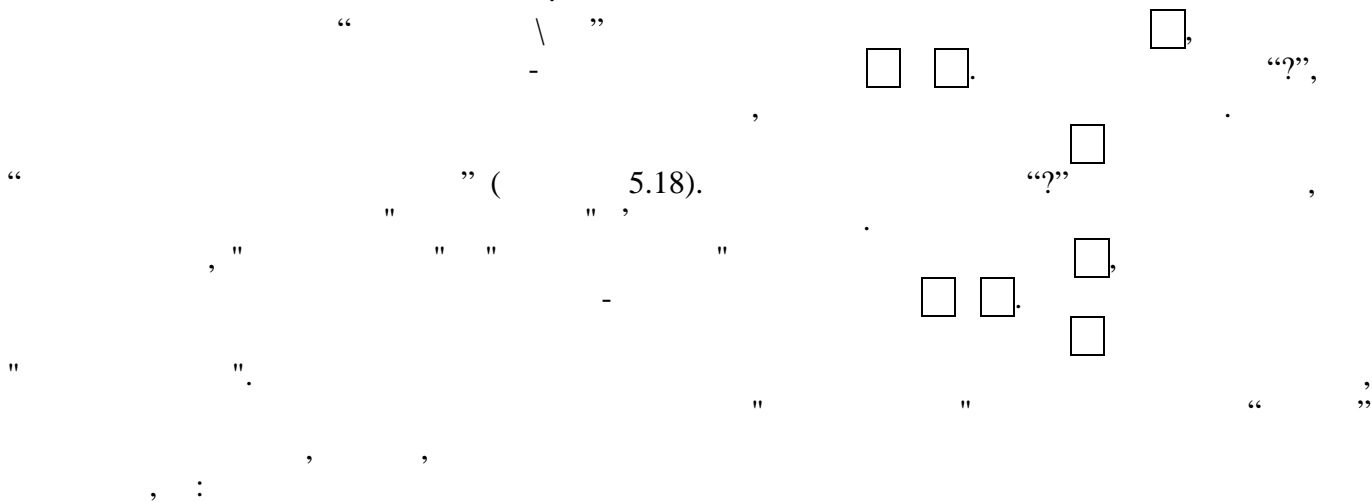


5.2.8.2

(" 5.17), \ "

(

i)



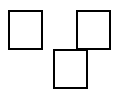
1-2 " " ;

“\ ” - .

\ ±9.9999E±8	: 0,66 1,05 ()
\ Xy,% ±9.9999E±8	: 0 Xy 15 ()
\ Xa,% ±9.9999E±8	: 0 Xa 15 ()
\ ±9.9999E±8	: 0,9 1,0 () “ \
\ ,	“\ - , / 3”, “\ Xy,%” “\ X ,%”

5.17 - “ \ ”

- 1)
- 2)
- 3)



“\ , / 3”, “\ Xy,%” “\ X ,%”;

“\ , ”;

“?”

”“<”- / “>”- ”,

□ -

(. .- 30319.2) NX19

(GERG-91 . ” ”.

213-80,

3-4

50-

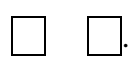
: “ ” “ 1 ” “ 5 ” “ ” “ ”

\ ? ZM.MMMMEzP (“+”,“-”) (0-9)	•••	\ ? ZM.MMMMEzP (0-9)	\ ? ZM.MMMMEzP (“+”,“-”) (0-8)
-----------------------------------	-----	-------------------------	-----------------------------------

5.18 - “ ”

5.2.8.3

(“ ” 5.19) \ “ ”



“?”

“ ” (5.18). “?”

“ ” “ ” “ ”

□ □ □ □ □ □ □

1-2

, - " " " "



$\| P ? \pm 9.9999E\pm 8$	-	()
$\| P ? \pm 9.9999E\pm 8$	-	: $P / 2 < P$ P ()
$\| P ? \pm 9.9999E\pm 8$	-	: 0,084 P P ()
$\| P ? \pm 9.9999E\pm 8$	-	: 0,084 < P P ()

5.19 - " \ "

5.2.8.4 " \ "
(5.20)
5.2.8.3.

$\| t ?^\circ \pm 9.9999E\pm 8$	-	: $0 < t$ 60 ()
$\| t ?^\circ \pm 9.9999E\pm 8$	-	: -25 t t - -50; -23,15 t t - NX19 GERG-91 ()
$\| t ?^\circ \pm 9.9999E\pm 8$	-	: -25 t 60 - -50; -23,15 t 60 - NX19 GERG-91 ()

5.20 - " \ "

5.2.8.5 " \ "
(5.21)
5.2.8.3.

$\| V ?^3 \pm 9.9999E\pm 8$	-	: 0,01 V 10 ()
$\| Q ?^3 / \pm 9.9999E\pm 8$	-	: $10 < Q$ 20000 ()
$\| Q ?^3 / \pm 9.9999E\pm 8$	-	: V Q Q /8 ()
$\| Q ?^3 / 9.9999E\pm 8$	()	: V /8 Qo < Q
$\| Q ?^3 / 9.9999E\pm 8$	-	: Q < Q 20000 ()
$\| W0?^3 \pm 9.9999E\pm 8$	-	: ± 1 W0 ± 99999000 ()

5.21 - " \ "

" \ \| W0?^3":

- , ;

5 , W0=+783324 3, W0=+7.8332 +5, - W0= +4.0000 +0.

- " " ? " :
 - " " ? " :
 - () - " " / " ;
 - " " ? " :
 1-2 " " ,
 .
 □

\ RS232? /c
 9600

RS-232, 1200; 2400; 4800; 9600 (

\ ?Hex
 HHHH

, - 1 FFF0 ()

5.24 -

5.2.8.8

" \ "

(5.25)

\ ?
 GERG

: NX19; GERG; 50

\ P?

\ t?

\ Q?

\ ?

\ Q ?

q Q ; Q - Qo<q<Q () :

\ ?

; - p, t, q () :

\ ?

120 () ; -

\ V ?³
 0.1

: 1,0; 0,1; 0,01; 0,001 ()

\ ?
 10

: 1; 2; 3; 5; 10; 15; 30 ()

\ ?

() , : 00; 01; 02; 03, " ? "= 00 ()

\ ?
 03

\ .?
 09

: 00 - 23 ()

\ .?
 03

: 01 - 28 ()

\ ?Hex

-6- 000000 - FFFFFFFF

\ ,

() « »: - ; - « » ()

5.25 -

" \ "

, “?” ,
 ,
 , “?”
 ,
 ,
 , “” :
 (0-9, A, B, C, D, E, F) ,
 - “\\ ?Hex” ;
 :
 () - “\\ ?Hex” ;
 , -
 1-2 “ ” ,
 .
 “ ” (“\\ ” , ” = “ ”)
5.2 , () ,
 ,

1. “ V ? 3” !
2. “ = ” “ ? ” .
3. “ ” “ \\ , ”

5.2.8.9 “ ” \ “ ”
(5.26) \ “ ”
 , “?” ,

\\ ?

\\ ?

\\ ?

) : ± 2 59 (

()

()

5.26 - “ ” \ “ ”
“ ” (“ ” , “ ”) (5.27) . “ ” ,
 , .

\\ ? ± :	\\ ? . ± :	\\ ? ± :
(+/-)	(0-2)	(0-59)

5.27 - “ ”

1. () () ! , ()
 2. () () , ()

5.29) □ “ ” (5.28) “ ” (

“ ”	“ ”	“ ”
“ ”	“ ”	“ ”
“ ”	“ ”	“ ”
“ ”	“ ”	“ ”

(0-23) (0-59) (0-59)

5.28 - " "

“ ”	“ ”	“ ”
“ ”	“ ”	“ ”
“ ”	“ ”	“ ”
“ ”	“ ”	“ ”

(0-30) (1-12) (1-31)

5.29 - " "

(1-2) " ",

□

2020 15 02 2020 01 03
 - 23 59 55 ; 00 00 ;
 - 03 2020 .
 2020 01 04 , 2020 , 15 04 ,

! “ ” “<” () “1F”

5.2.8.10

5.30) (" \ "

“ \ ” “?” , “?” “/” “>” - ”, “<” - “” -

11,

- “ ” -
- “X” -
- “H” -
- “D” -
- “A” -
- “O” -
- “U” -

200 .

- “\ ” = “ ” - ; “\ ” = “ ” - “ ” . “\ ” ?...” .

\ ?

\ ?

5.30 -

”\ ? ” “\ ? ”

6

6.1

() , . - (“10”) “■”, “” .

2046

6.2

6.2.1

"Q<Q" -
"Q", "\Q", "=", "Q",
"Q=0").

6.2.2

"Q>Q" -
"=", "\Q", "=",

6.2.2

" > " (" < ") -
>" " (< 0,084),
"=", "\Q",

6.2.3

"t>t" ("t<t") -
t > 60 ° (t < t , t = 25 ° -
50-213-80 t = 23,15 ° -
GERG-91 . NX19 .),
"=", "\Q",

6.2.4

"K=" -
"=", "\Q", "=",

6.3

" = " -
"0" - (

" " !
"1" ()

"U < " -
10%.

"U <U" - (" "

"U = " -

" "U <U " , " \ " (5.2.8.9). "Q= \ " , " = " , "t= " " = " - :

"Q " , " " , "t " " " " :

6.4

"OE= " - , , " " (" ") .

20

" E= " " " " ,

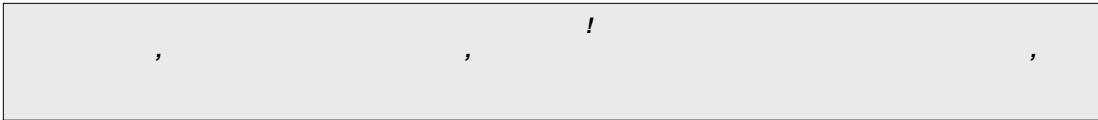
" = ") .

"FLASH= " - , , " " " = " - , , " " "

" = ?" - ,

" - = " - " \ , " ,

" -U= " - ,



7

7.1

-LRS232 (" ") , OE-RW (" "); 1000

I-RS232.

OE aster 06,

OE-RW

7.2

RS-232

- - ; , , ;

-VPT

- 1200 / , 2400 / , 4800 / 9600 / .

7.3

Hayes-

:
,
9.3;

7.4

EPSON ESC/P,

RS-232

(
: , - 866).
9.3;
“ ”.

8

12.2.007.0.

,
, “ ” (), “ ”
() , 12.2.007.0;
7.3 “ ” 0.00-121.98 (“ ”),
;

12.1.004.

22782.0, 22782.5,
“1 b 4”

"ib",

“ b

- 12.3.019.

9

9.1

9.2

9.3

“ ”. 1,25 . , , 50 . " " 10 1 " " 500 . :
U_{xx} = 3,6 , = 2 . LS 33600, - R20 (D), - STD,
- “SAFT” ().

1. ! :
2. , .
3. , .

9.4

;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;
- ;

14192,
“ ”, “ !”, “ ”.
5 40 80 %.
- 3 .


9.5

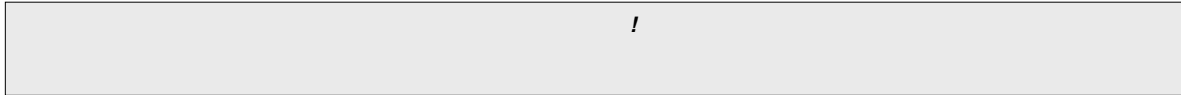
(). 4
1,5 .

9.6

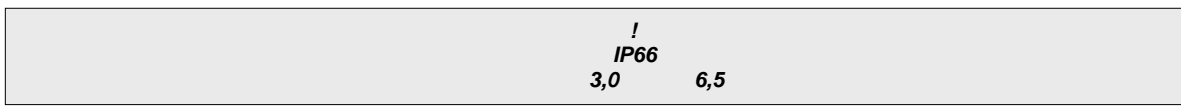
22782.5, 22782.0, "ib",
"1 ibIIAT4" " 4 " 0.00-132-01"
" b
-RS232

9.7

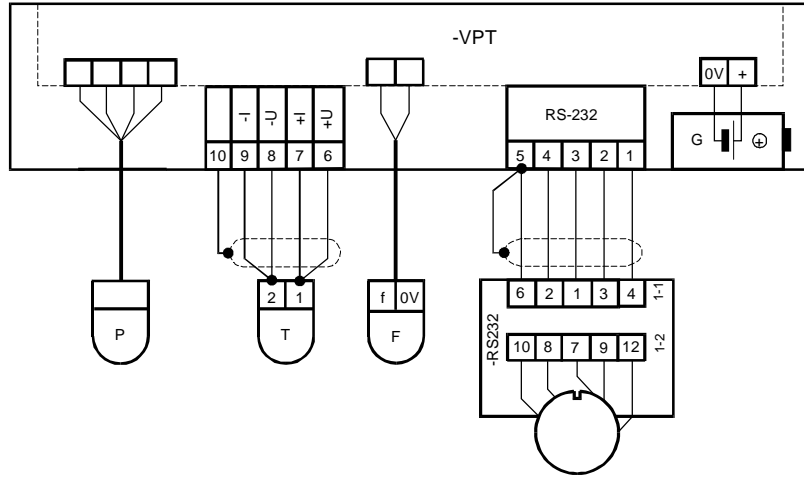
4.
5.


6.
() 4. : 50 × 50 .
" 1" ' 9.1.
-RS232.
7.


7 - (" 1-2"). " 1-1" () ' -
3,0 6,5 (PG7).


! IP66 3,0 6,5

0,15 2 1,5 2.



9.1 –

-RS232

-RS232

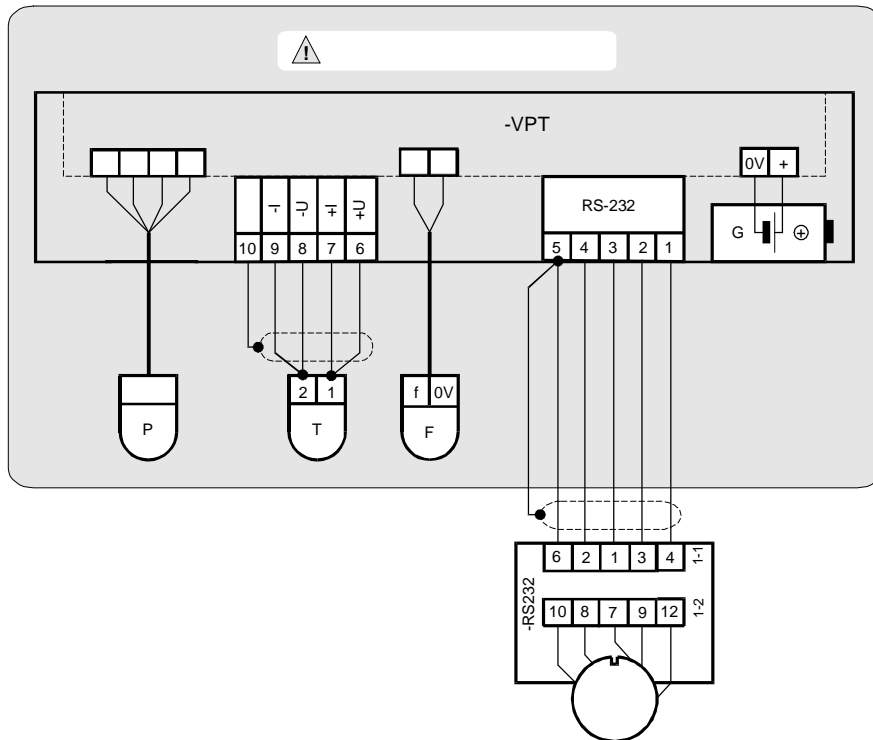
-RS232,

9.2.

9.3.

RS-232 25 .
-LRS232,

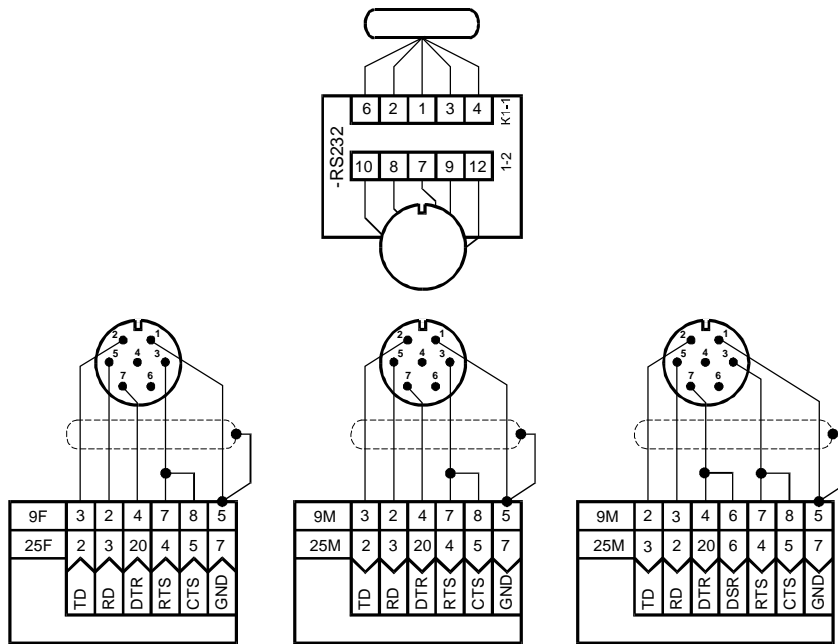
1000 .



9.2 –

-RS232

-VPT



9.3 -

-RS232

-7

9.8

:
 - "0" -
 1-2
 2 - 20
 - " (5.2.8),
 ;
 " \ " (5.2.2)
 ;
 - " ()
 - 5.2.8.10 " \| \| ? ",
 (" W, 3" - ") \| W, 3" ;
 - " " "1" -
 " = "
 , 9.9.

!
 - « \| » - Q < Q < Q ;
 - « \| » - < ≤ P ;
 - « \| » - t < t .

9.9

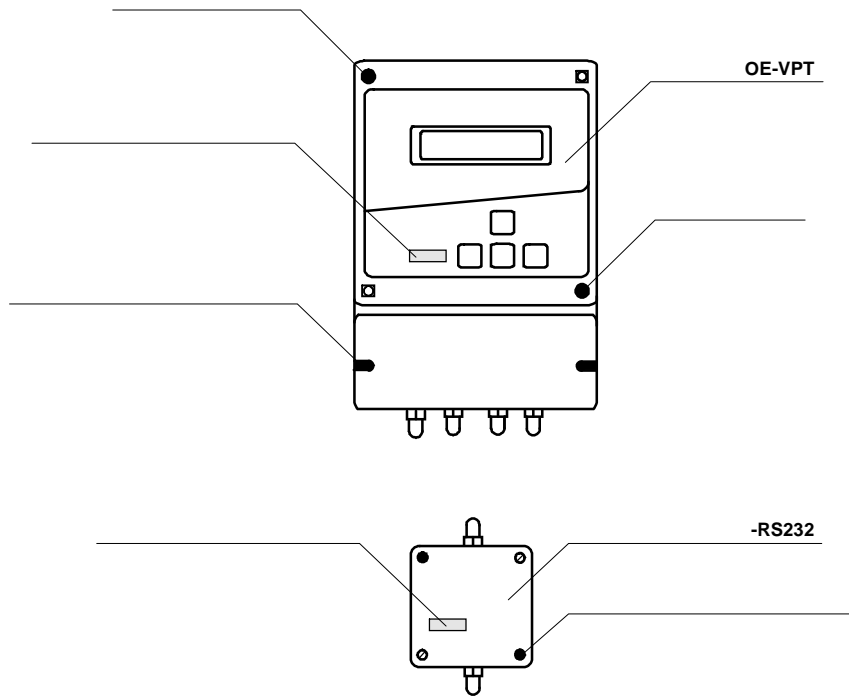
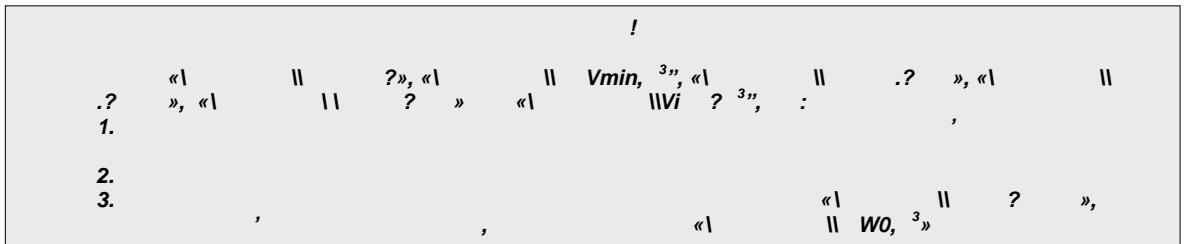
(9.4):

- ;
 - ;
 ,



9.10

- " (5.2.8.2) ;
 - " (5.2.2) ;
 - " (5.2.3), " (5.2.5)
 ;
 - " "



9.4 -

- ;

- ;
- ;
- ;
- ;
- ;
- ;



10

() , ,
2 15150.
, . 1 15150.
, , ,
- 6 .

: " \ "				
1	?		0...FFFFFF	
: " \ "				
2	,		50; GERG; NX19	
3	P,		" ; " "	
4	t,		" ; " "	
5	Q,		" ; " "	
6	,		" ; " "	
7	Q ,	Q	" ; " "	
8	,		" ; " "	
9	,		" ; " "	
10	V , ³		0,001; 0,01; 0,1; 1,0	
11	,		1, 2, 3, 5, 10, 15, 20, 30	
12			;	
13	,	()	0...4	
14	..		0...23	
15	..		1...28	
16	,Hex		0...FFFFFF	
17	,	" "	" ; " "	
: " \ "				
18	, / ³		0,66...1,05	
19	,%		0...15,0	
20	,%		0...15,0	
21			0,9...1,0	
: " \ "				
22	P ,		0,2; 0,7; 1,4	
23	,		P /2...P	
24	P ,		0,084..P	
25	P ,		0,084...P	
: " \ "				
26	t , °		0...+60	
27	t , °	: 50-13 NX19, GERG-91	-25...t -23,15...t	
28	t , °	: 50-13 NX19, GERG-91	-25...+60 -23,15...+60	
: " \ "				
29	V , ³		0,01...10,0	
30	Q , ³ /		10...20000	
31	Q , ³ /		V ...Q /8	
32	Q , ³ /	" "	V /8...Q	
33	Q , ³ /		Q ...20000	
34	W0, ³		±1 W0 99999000	

		: " \ "		
35	,1	1		4
36	,2	2		4
37	,3	3		4
38	,4	4		4
39	,1	1		4
40	,2	1		4
41	,3	1		4
42	,OE-VPT			NNNNN,MM- ,B.B
		: " \ "		
43	RS232, /			1200; 2400; 4800; 9600
44	,Hex			1...FFF0
		: " \ "		
45	,			-2 59 ... + 2 59
46		:		0...23 0...59 0...59
47		:		4...31 1...12 1...31
		: " \ "		
48	,	,		-
49	,	,		-
1.	:	:		
	-	-		; " " "I" - ;
	-	-		
2.3		1, 16 (" ")		
3		35...41:		
	-	, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, N,		,
	,	,		,
	-	, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, N,		,
	,	,		,
4.	42	: "OE-VPT -		; "NNNNN" - ;"
	" -	; " - "		

2
(,)

, ()

1	=	()
2	=	()
3	FLASH=	' ()
4	FLASH=	' ()
5	=	
6	=	()
7	- =	
8	- =	()
9	-U=	
10	-U=	
11	= ?	, ()
12	=	
13	=	()
14	=	
15	=	
16	Q=	
17	Q=0	" "(
18	Q<Q	()
19	Q>Q	()
20	Q=	
21	=	
22	<	()
23	>	()
24	=	
25	t=	
26	t<t _	()
27	t>t	()
28	t=	
29	U =	()
30	U <	(10%)
31	U <U	()
32	U =	()
1.	-	.
2.		

(3)

1.

- ;
 - ;
 q - ;
 q - ;
 p - ;
 p - ;
 p - ;
 t - ;
 t - ;
 V - ;
 , , 3 - , ;
 , , 3 - , ;
 , - ;
 . . - ;
 - () ;
 - () ;
 - () .

2. “ ”

OE-VPT	25333 (" ")
	5.1
	NX19
	09
	01
	03
	01
" "	.250...
	BK
	B K
	1.000
	400.0000
	2.5000
	1.0000
	100.0000
	0.1
	0.7000
	0.50000
	0.14000
	0.50000
	BK
	60.0000
	-25.0000
	10.0000

01.01.07 16:37:22

“ ” \ // , ”= , “ ”

3. “ ”
 3.1 :“ \ \|Q ? ”=” ” “ \ \| ? ”=” ”

()
 01.07.06 09:00:00 01.08.06 08:59:59

OE-VPT 25333(" ") , - 01, - 09
 .250..., V = 1.000 3, q = 2.500 3/ , q = 400.00 3/
 Xy = 0.0420 %, = 0.7560 %, = 0.6830 / 3

, 3 , 3 . , ° ,

01.07.06 09:00:00	1073.765	0419.000	2.56268	-0.97	0.24258	01 00:00:00
02.07.06 09:00:00	0972.683	0382.000	2.54629	2.42	0.24750	01 00:00:00
...
31.07.06 09:00:00	1084.696	0421.000	2.57647	10.32	0.24647	00 22:59:29

	30746.600	10503.000				30 22:59:29/00 01:00:31
	18969.420	07855.000				0004 00:00:00
	50201.613	18324.000				0034 22:59:59
=	29501.016	10005.000				30 21:44:35
\q,t,p=KOHCT	00000.000	00000.000				00 00:00:00
\q<q	00574.659	00068.000				00 04:21:43
=	01245.584	00498.000				00 01:14:54
\q>q	01245.584	00498.000				00 01:14:54
\p>p	00000.000	00000.000				00 00:00:00
\p<p	00000.000	00000.000				00 00:00:00
\t>t	00000.000	00000.000				00 00:00:00
\t<t	00000.000	00000.000				00 00:00:00
\K=ABP	00000.000	00000.000				00 00:00:00

02.08.06 14:06:55

3.2 :“ \ \|Q ”=” ” “ \ \| ? ”=” ”

()
 01.07.06 09:00:00 01.08.06 08:59:59

OE-VPT 25333(" ") , - 01, - 09
 .250..., V = 1.000 3, q = 2.500 3/ , q = 400.00 3/
 Xy = 0.0420 %, = 0.7560 %, = 0.6830 / 3

, 3 , 3 . , ° ,

01.07.06 09:00:00	1073.765	0419.000	2.56268	-0.97	0.24258	01 00:00:00
02.07.06 09:00:00	0972.683	0382.000	2.54629	2.42	0.24750	01 00:00:00
...
31.07.06 09:00:00	1084.696	0421.000	2.57647	10.32	0.24647	00 22:59:29

	30746.600	10503.000				30 22:59:29/00 01:00:31
	18969.420	07855.000				0004 00:00:00
	50201.613	18324.000				0034 22:59:59
=	29501.016	10005.000				30 17:22:52
\q,t,p=KOHCT	00000.000	00000.000				00 00:00:00
=	01416.791	00566.000				00 05:36:37
\q>q	01245.584	00498.000				00 01:14:54
\q<q	00171.207	00068.000				00 04:21:43
\p>p	00000.000	00000.000				00 00:00:00
\p<p	00000.000	00000.000				00 00:00:00
\t>t	00000.000	00000.000				00 00:00:00
\t<t	00000.000	00000.000				00 00:00:00
\K=ABP	00000.000	00000.000				00 00:00:00

02.08.06 14:06:55

3.4.6 “ ” “ ” , () ,

4. “ ” (- 1)

		01.03.06 09:00:00		()		01.08.06 08:59:59	
OE-VPT 25333(“ ”),		- 01,		- 09		NX19	
.250..., V = 1.000 3, α		= 2.500 3/ , α		= 400.00 3/			
03.03.05 12:23:16	Xy,%	1,0027	1,0420	22491.352	09015.000		
07.03.05 13:31:44	Xa,%	0,7560	0,7820	26970.724	10813.000		
10.03.05 15:14:19	RS232, /c	4800	9600	30134.105	12030.000		
02.08.06 14:09:07							

5. “ ” (- 2)

		01.07.06 09:00:00		()		01.08.06 08:59:59	
OE-VPT 25333(“ ”),		- 01,		- 09		NX19	
.250..., V = 1.000 3, α		= 2.500 3/ , α		= 400.00 3/			
01.07.06 12:20:01	Q<Q		20628.910		08270.000		
01.07.06 16:41:44	Q=HOPM		20742.922		08312.000		
08.07.06 22:12:29	Q>Q		48364.478		17734.000		
08.07.06 23:27:35	Q=HOPM		47118.894		18232.000		
02.08.06 14:17:03							

“ ” “ ” , :

“ OE-VPT 25333 N” ,

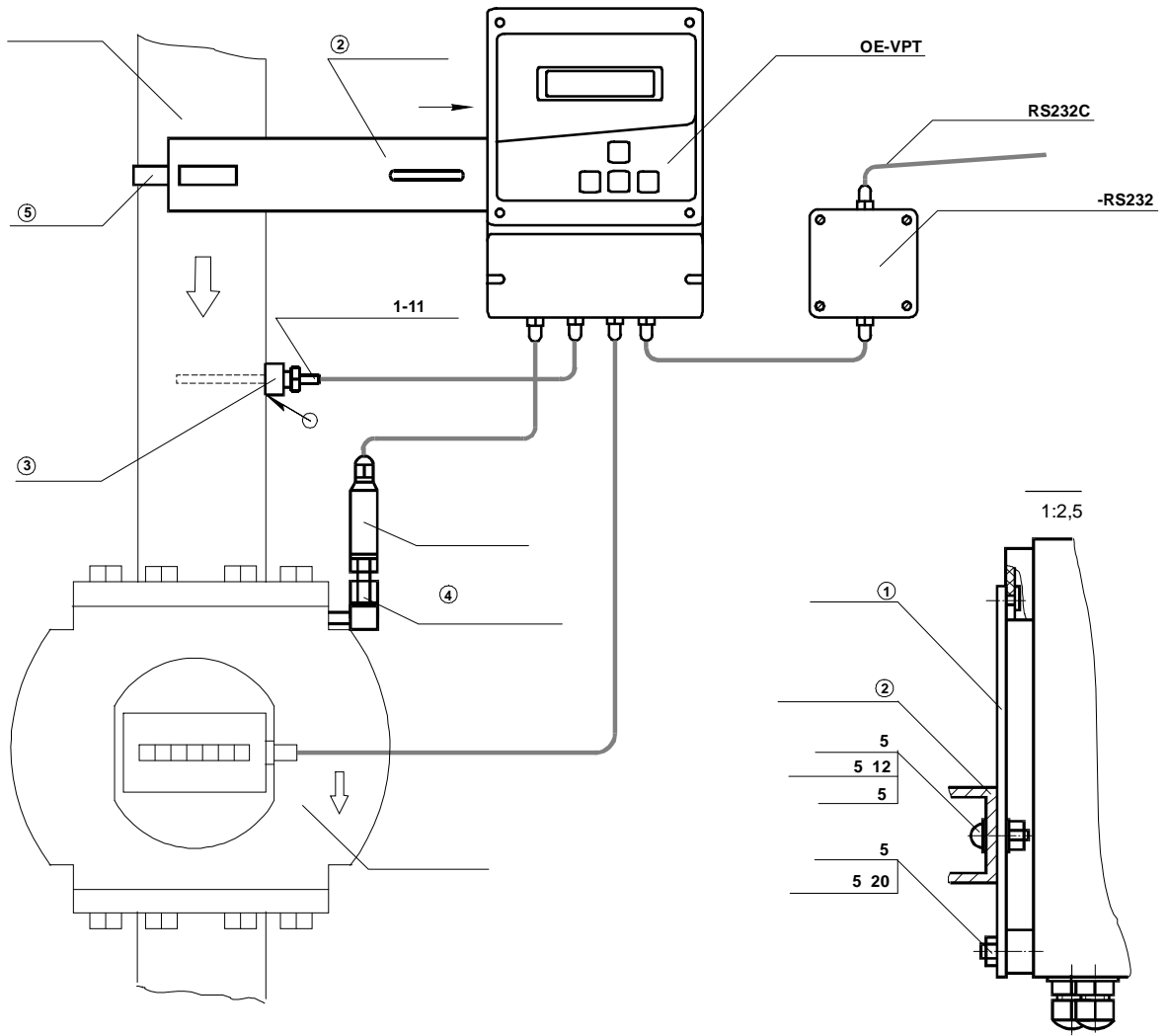
N- , :

“

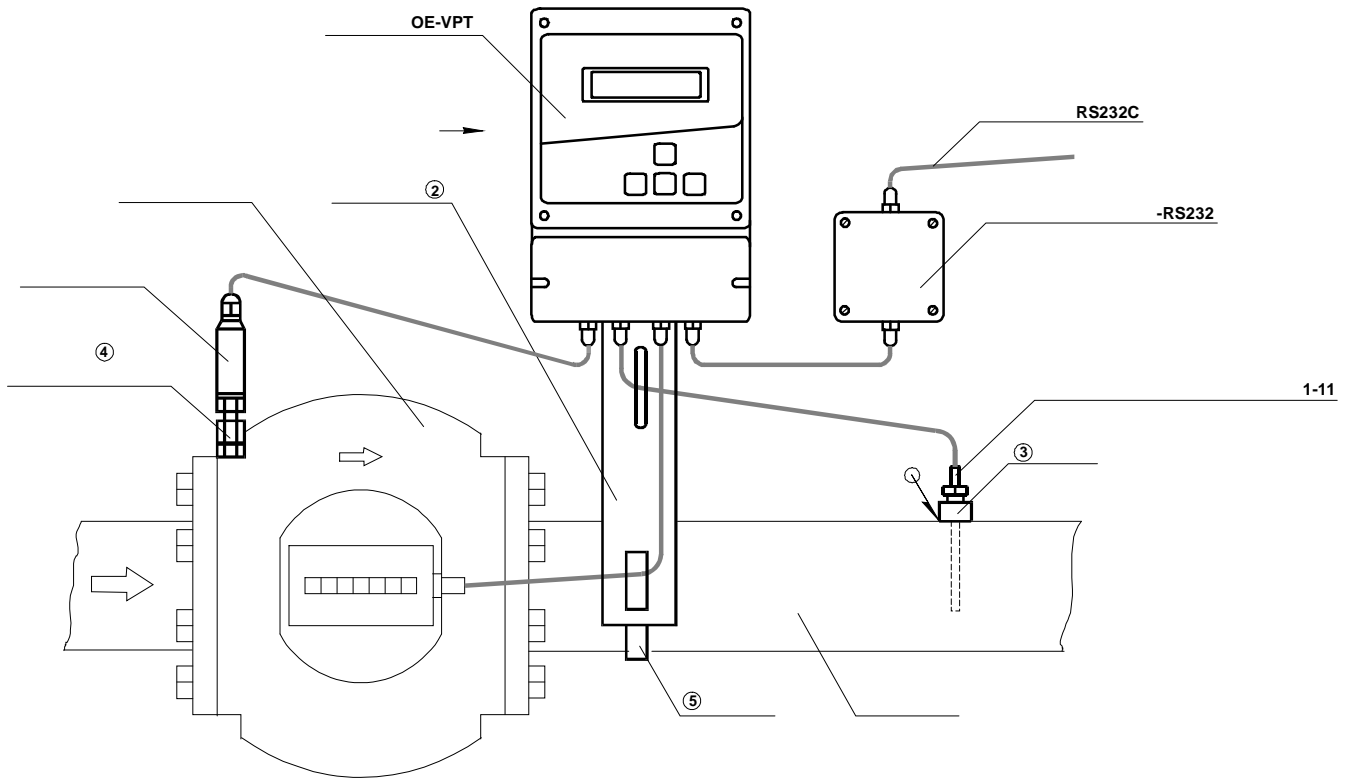
“.

()

1. -VPT



- 1. 5. 1 2 2
- 2. , ø15 , 3.
- 3. 4. 1, ,
- 4. 3 ()
- 5. ,
- 6. ,



1.

5.

1

2

2

2.

ø15

3.

3.

4.

4.

1,

5.

3

(

)

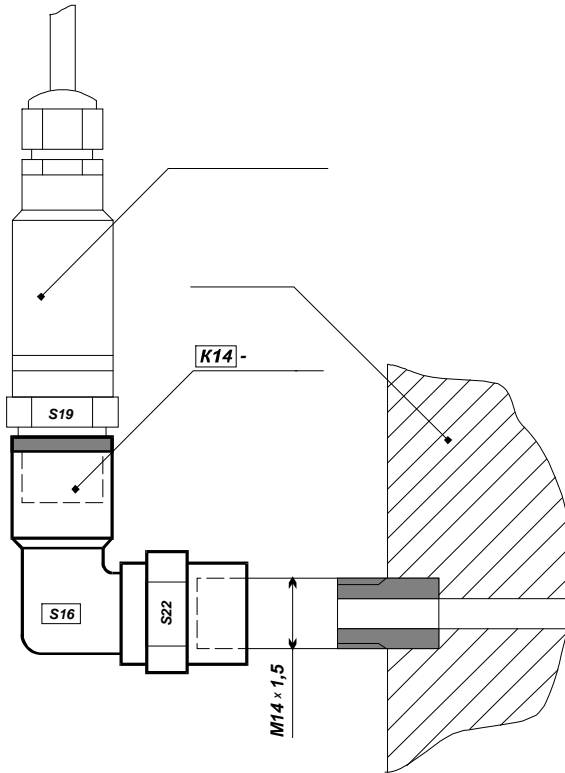
6.

5
(,)

1.
(

(- 14)

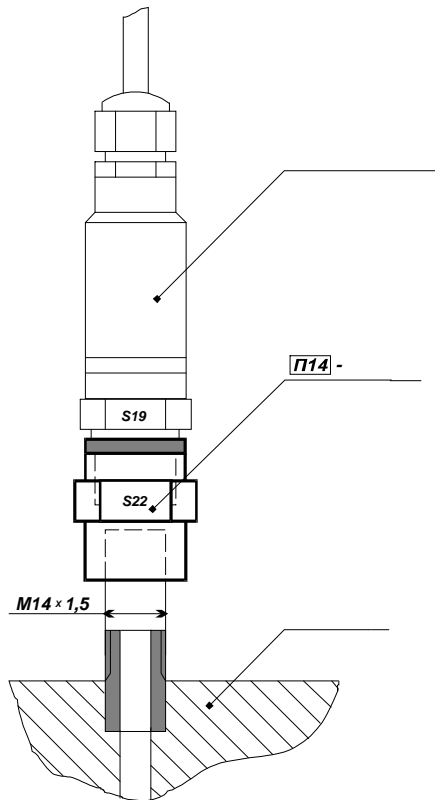
GMS



2.
(

(- 14)

GMS

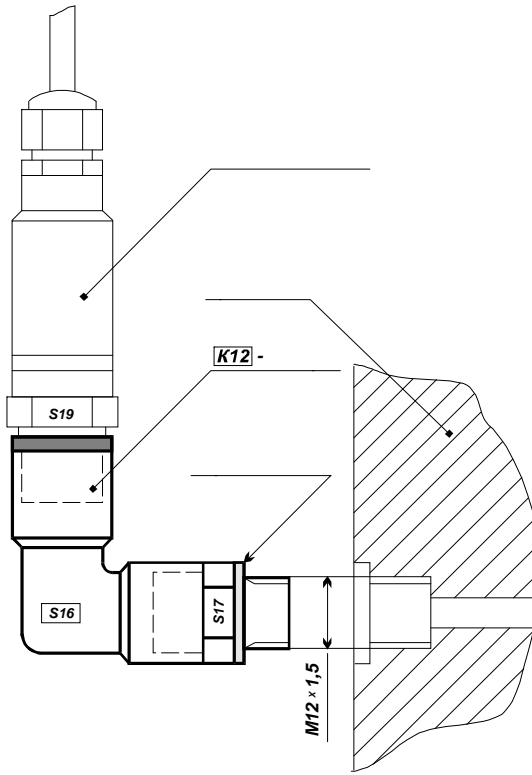


, -VPT

3.
().

()

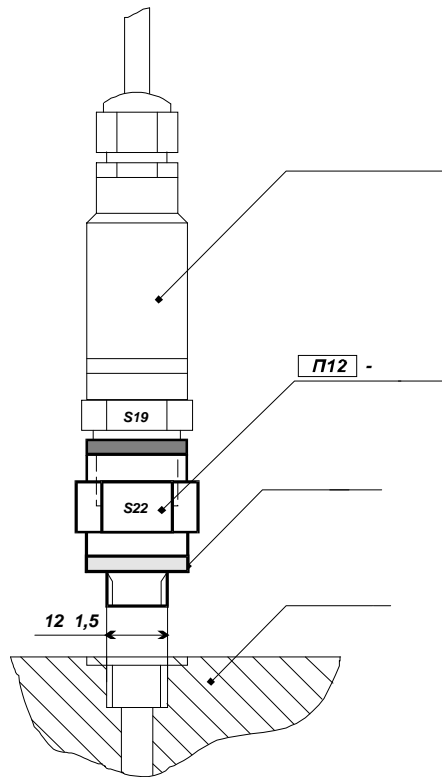
- 12)
(



4.
()

()

- 12)

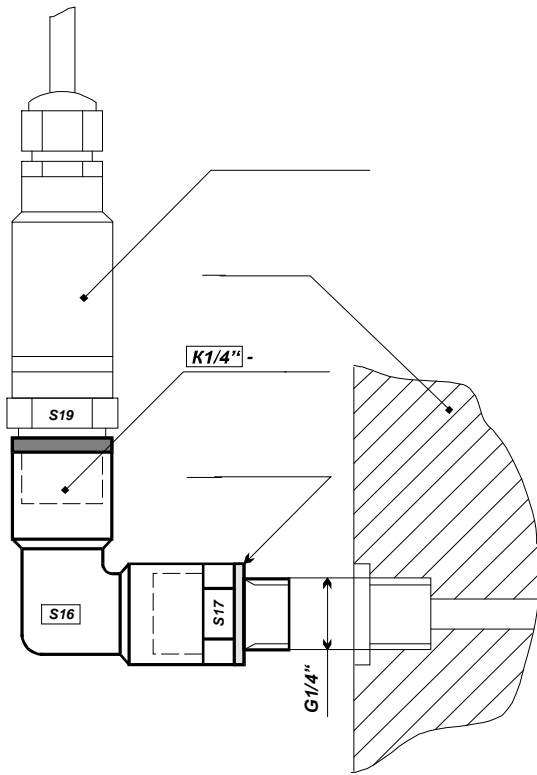


5

5.
SCHLUMBERGER (

()

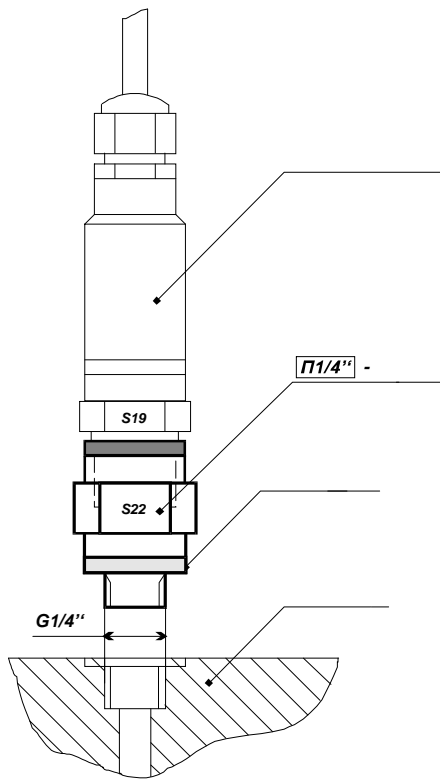
- 1/4")



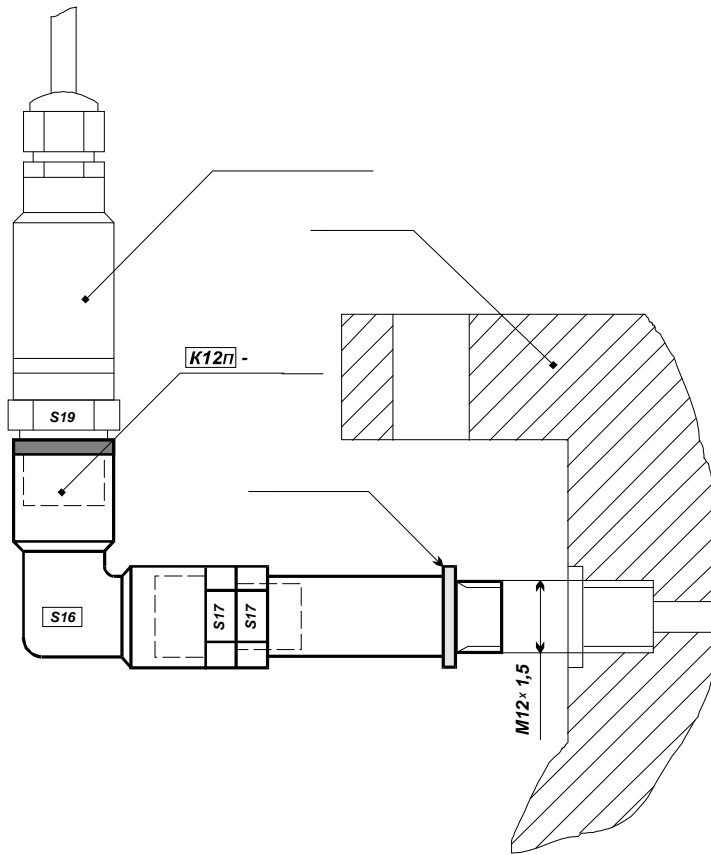
6.
SCHLUMBERGER (

()

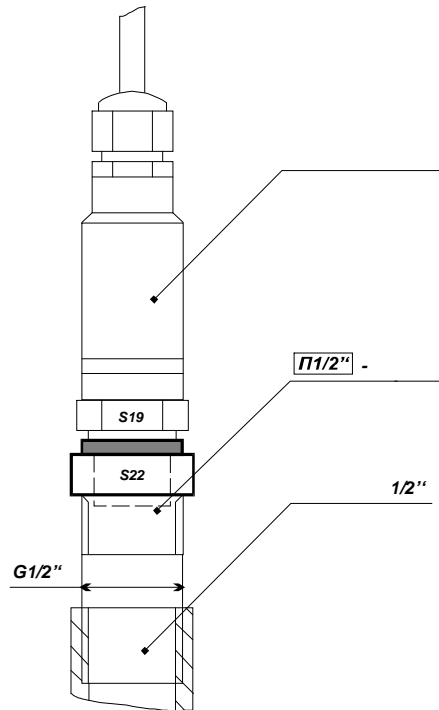
- 1/4")



7. () - 12)
 () .



8. () - 1/2''
 1/2'' () .



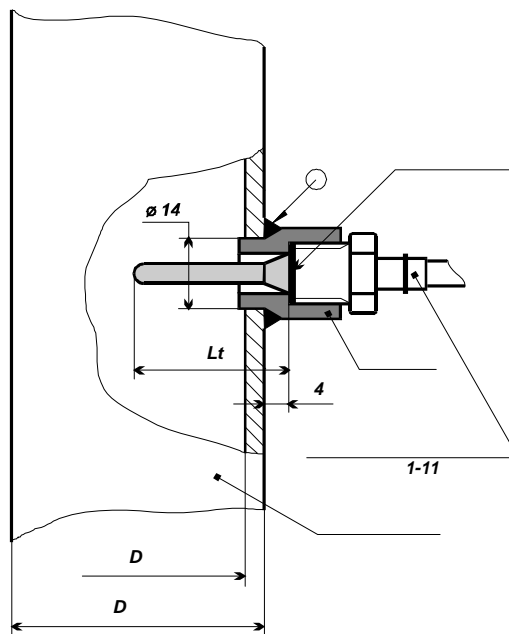
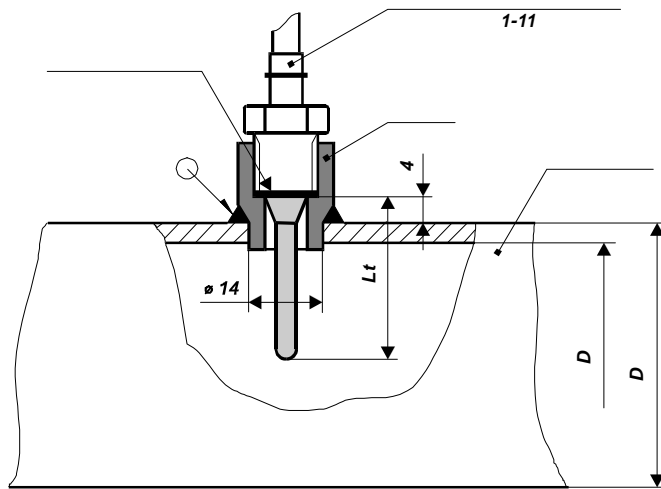
1-11

0,3 – 0,7 D

-VPT,
1-11

Lt:

D	32	40	50	80	100	125	150	200	250
Lt	25		32	50	60		80	100	120



7
(,)

1. **9** (, DB-9M – ,).
2. **25** (, DB-25M – ,).
3. **9** (, DB-9F – , ,).
4. **25** (, DB-25F – , ,).
5. **9** (, DB-9 – ,).
6. **25** (, DB-25 – ,).