

CONTENT

01

01

01

04

06

13

27

27

27

27

28



160:1

CPU

NB-IoT 4G

CPU

CPU

ESAM

()

3.1

C_f

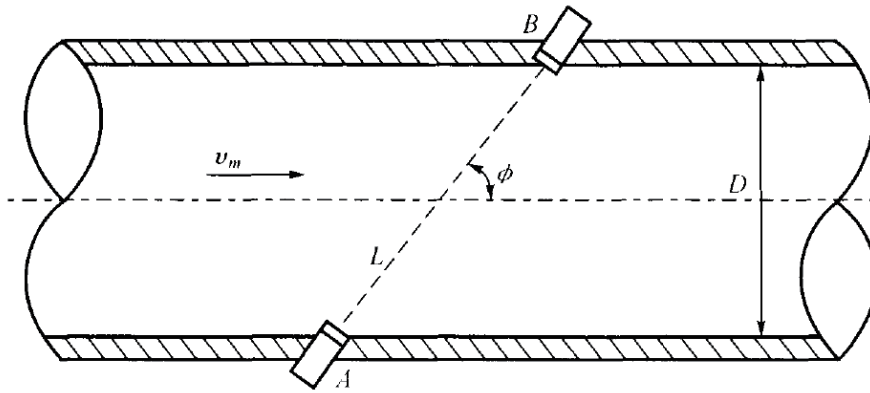
V_m

3-1

$$t_{down} = t_{AB} = \frac{L}{(C_f + V_m \cos \theta)} \quad t_{up} = t_{BA} = \frac{L}{(C_f - V_m \cos \theta)} \quad (1)$$

t_{up} —
 t_{down} —
 C_f —

V_m —
 —



3-1

1

$$V_m = \frac{L}{2 \cos \phi} \left(\frac{1}{t_{down}} - \frac{1}{t_{up}} \right) \quad (2)$$

$V_i \quad i=1,2,k$

\bar{V}

A

q_v

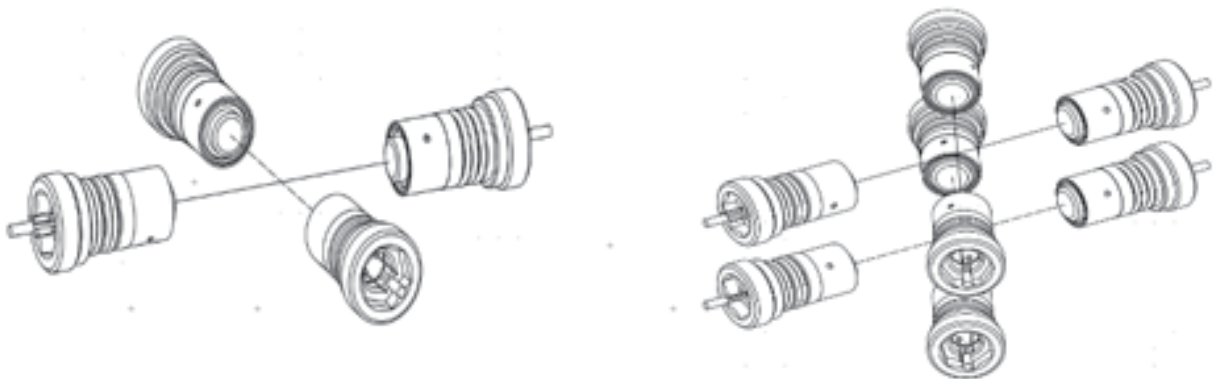
3

$$q_v = A \bar{V} \quad (3)$$

$$\bar{V} = f(V_1, \dots, V_k) \quad (4)$$

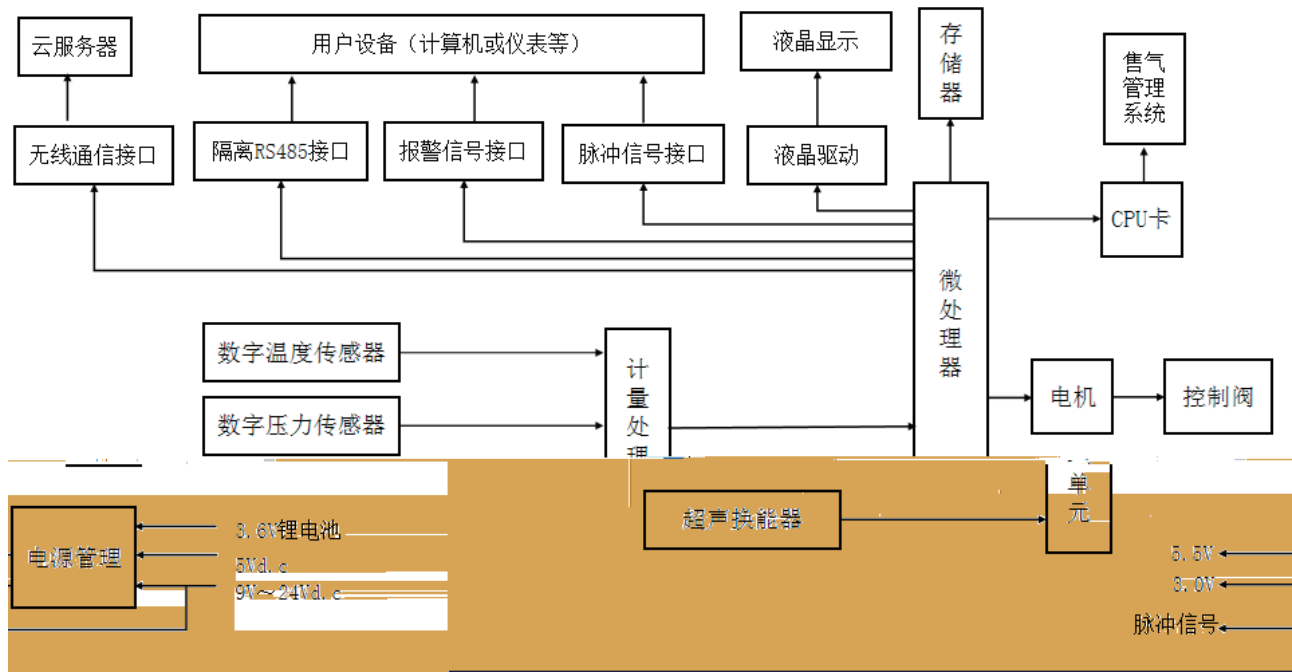
k—

3.2



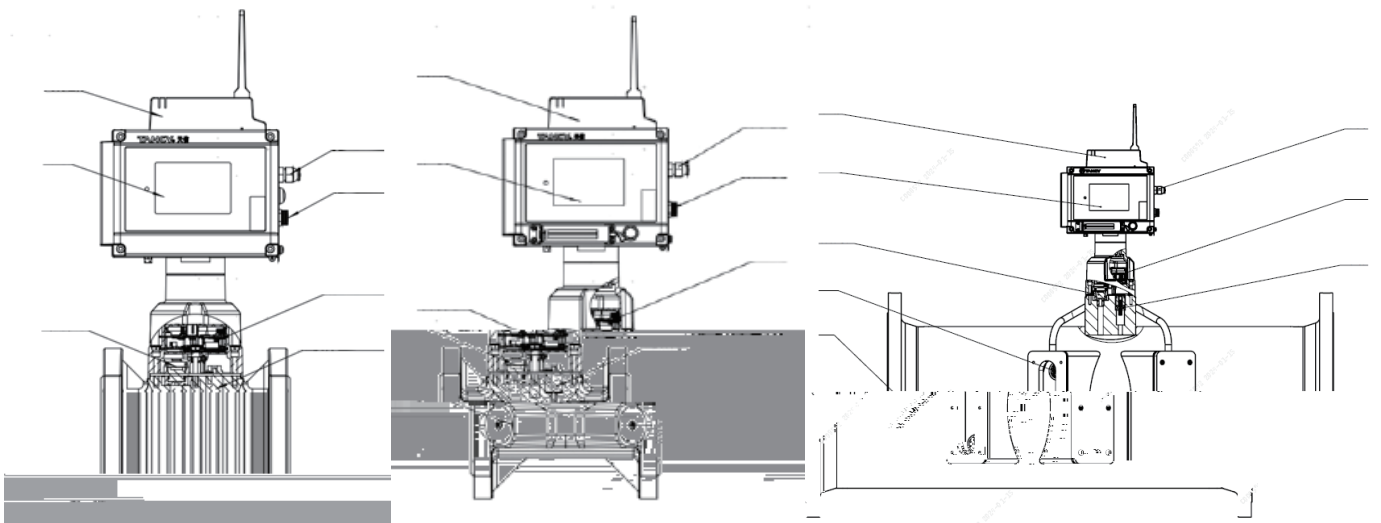
3-2

3.3



3-3

3.4



3-4

4.1

1

1

	mm	MPa		m ³ /h	m ³ /h	m ³ /h		
TUF-DN25	25	1.6	1.0	0.10	0.4	40	100:1	2
TUF-DN32	32			0.10	0.4	65	160:1	
TUF-DN40	40			0.20	0.6	100	160:1	
TUF-DN50	50			0.30	1.0	160	160:1	
TUF-DN80	80			0.60	2.5	400	160:1	4
TUF-DN100	100			1.00	4.0	650	160:1	
TUF-DN150	150			2.00	10	1600	160:1	
TUF-DN200	200			3.00	15	2500	160:1	
TUF-DN250	250			5.00	25	4000	160:1	
TUF-DN300	300			8.00	40	6500	160:1	

2

2

	mm	MPa
TCVL-C	25/32/40/50/80/100	0.1
TCVL-M	25/32/40/50/80/100/150/200	0.4
TCVL-B	50/80/100	0.6
	150/200	0.4

4.2

$$\pm 1.0\% \quad 0.1Q_{\max} \quad Q \quad Q_{\max} \quad \pm 2.0\% \quad Q_{\min} \quad Q \quad 0.1Q_{\max}$$

4.3

$$P=101.325 \text{ kPa} \quad T=293.15 \text{ K} \quad 20$$

4.4

- 25 +55
- 5% 95%
- 70kPa 106kPa

4.5

-20 +60
1.6MPa

4.6

4.6.1

a 9V d.c. 24V d.c. 5V d.c.
b 3.6V 35Ah 3.6V 19Ah
c 1 7.2V

4.6.2

9V d.c. 24Vd.c. 20V 1V
24Vd.c.

4.6.3

IC 2.8V 0.2V
0.01m³/0.1m³/1m³/10m³ 200Hz

4.6.4RS485

RS485 RS485
9600bps

4.6.5

3V 0V 4

4.6.6 4mA~20mA

4mA -40 4mA 0,20mA ; :

4.6.7

4.6.8

TUF 1440 / 6 / 2 / 10
200 600 / 1000

4.7 Ex ib IIB T4Gb

4.8 IP65

5.1

a) 1

b)

c) 1 2

5.2

1

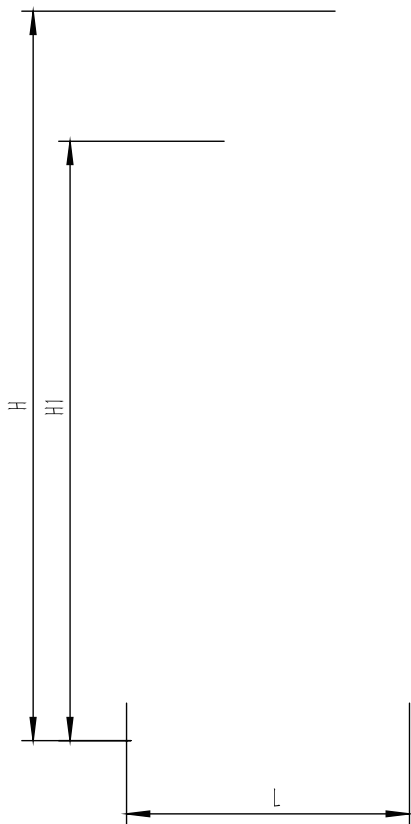
1

$10\% q_{max} \sim 90\% q_{max}$

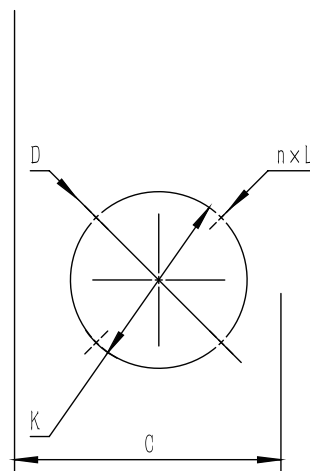
5.3

5.3.1

6 5-1 5-2 3 4 5



5-1



5 TCVL-M

		L	H	H1	C	D	K	n× L
TUF-DN25	25	518	391	483	200	115	85	4× Ø14
TUF-DN32	32	548	403	495	200	140	100	4× Ø18
TUF-DN40	40	568	418	510	200	150	110	4× Ø18
TUF-DN50	50	588	425	517	200	165	125	4× Ø18
TUF-DN80	80	798	483	575	212	200	160	8× Ø18
TUF-DN100	100	968	500	590	251	220	180	8× Ø18
TUF-DN150	150	1388	555	647	336	285	240	8× Ø22
TUF-DN200	200	1728	620	712	390	340	295	12× Ø22

6 TCVL-B

		L	H	H1	C	D	K	n× L
TUF-DN50	50	588	425	517	200	165	125	4× Ø18
TUF-DN80	80	798	483	575	212	200	160	8× Ø18
TUF-DN100	100	968	500	590	251	220	180	8× Ø18
TUF-DN150	150	1388	555	647	336	285	240	8× Ø22
TUF-DN200	200	1728	620	712	390	340	295	12× Ø22

5.3.2

5.3.2.1

DN80 DN100

DN150 DN200 2DN DN

5.3.2.2

	L	H1	H	D	K	n× L
DN80	648	483	575	Ø200	Ø160	8× Ø18
DN100	808	500	590	Ø220	Ø180	8× Ø18
DN150	1208	555	647	Ø285	Ø240	8× Ø22
DN200	1608	620	712	Ø340	Ø295	12× Ø22

□

2DN

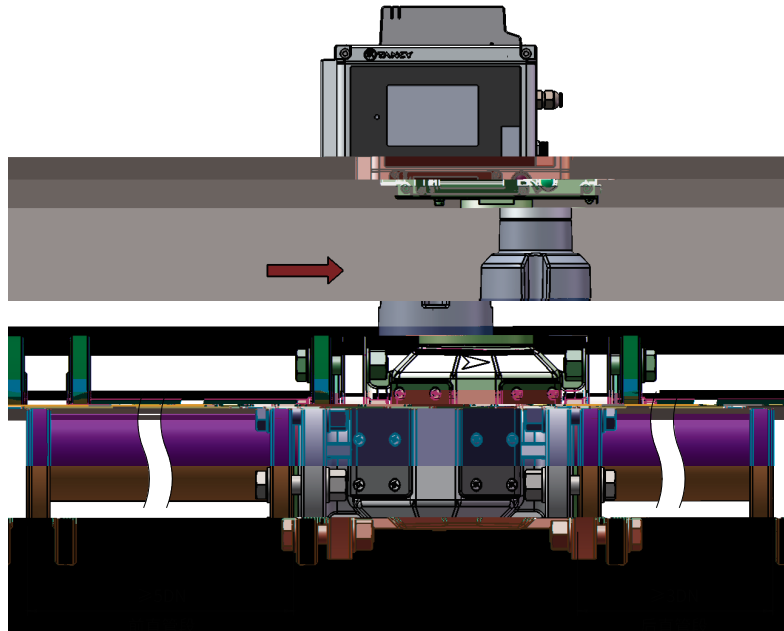
3DN

L

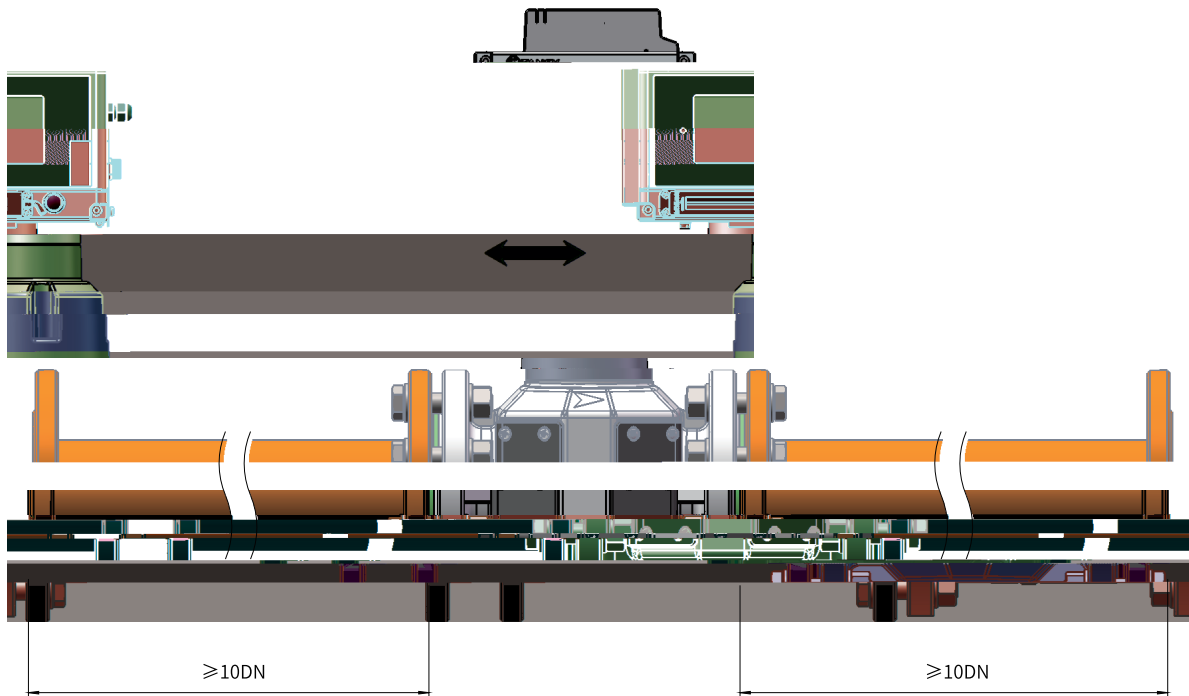
5.3.3

5.3.3.1.

10DN 5DN 3DN 5-4 10DN
5-5



5-4



5-5

3.3.2.



3DN

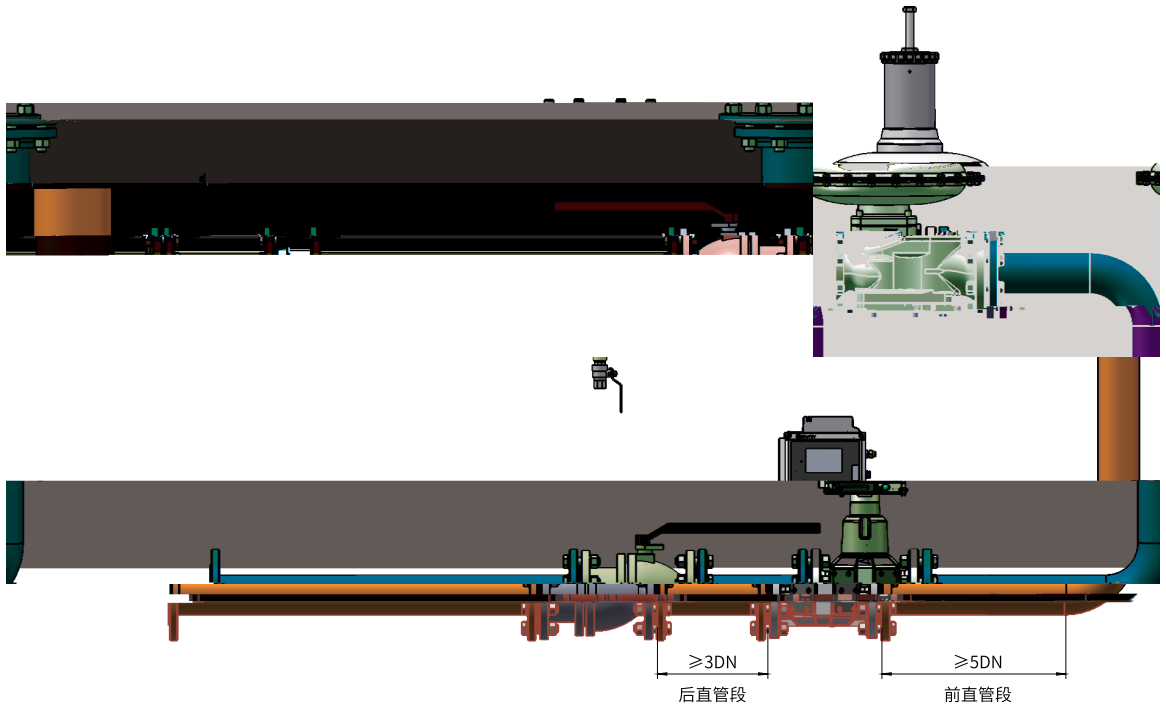
5- 7 DN80-DN200

+

TUF

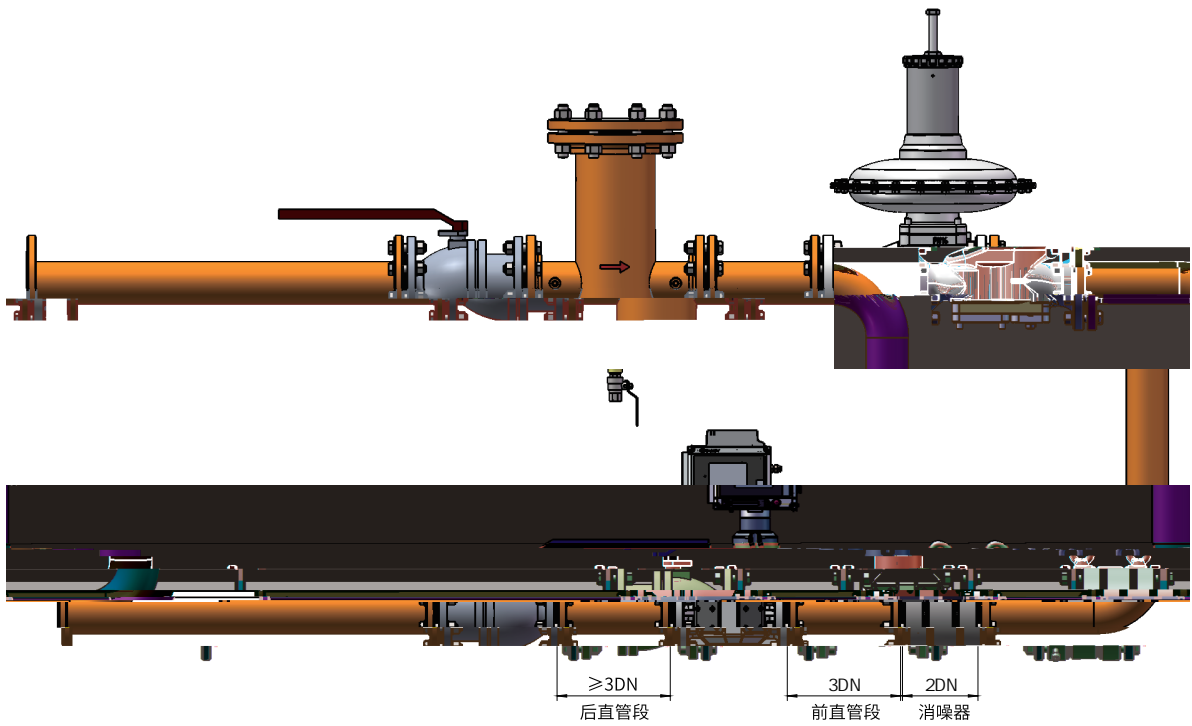
2. /

2.1 / DN25-DN100
5DN 3DN

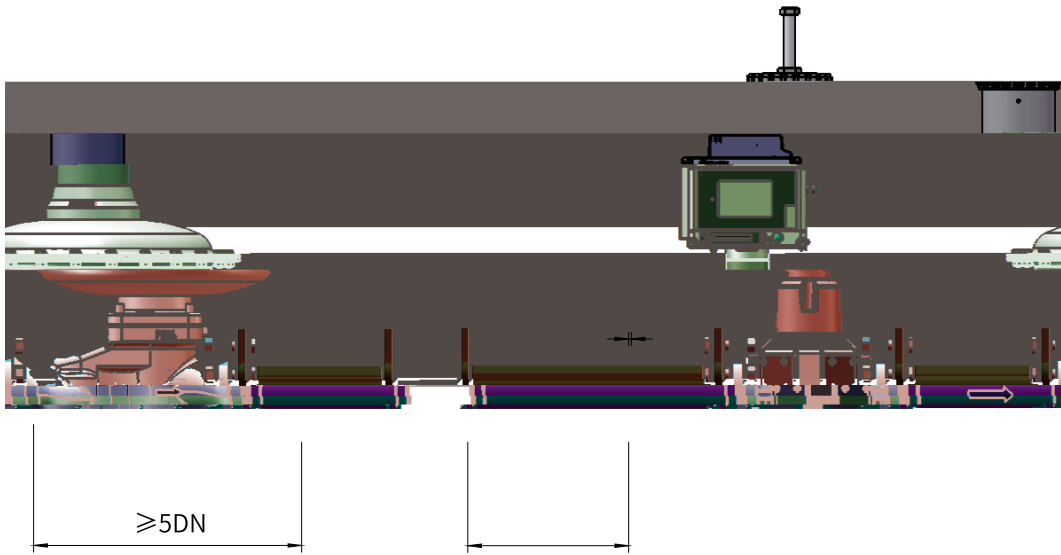


5- 8 DN25-DN100

2.2 / DN150-DN200
3DN 3DN

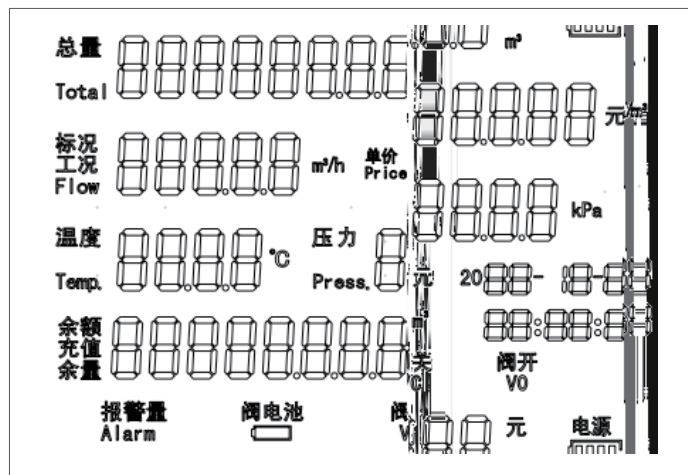


5- 9 DN150-DN200



6.1.

6.1.1.				4			
6.1.2.				2		99999m ³ /h	" ----"
6.1.3.		-30.0	+150.0				
6.1.4.		1			99999kPa		
6.1.5.		4					
6.1.6.	1	2	3.4V			30	
6.1.7.			6.6V	"	"		30
6.1.8.							" ----"
6.1.9.	6-1			7			



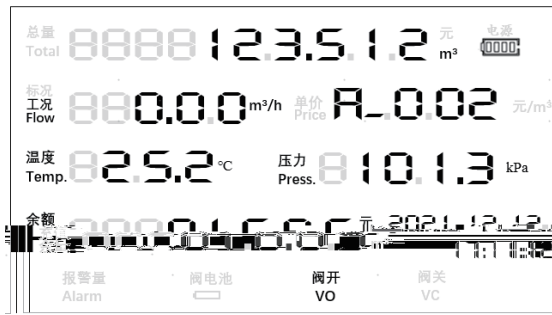
6-1

7

电源	
0000	m ³
总量 Total	
标况 工况 Flow	Flow Flow Flow
单价 Price	Price Modbus C K
余额 充值 余量	m ³



6-4



6-4 A_002 Modbus 2

C 6-5

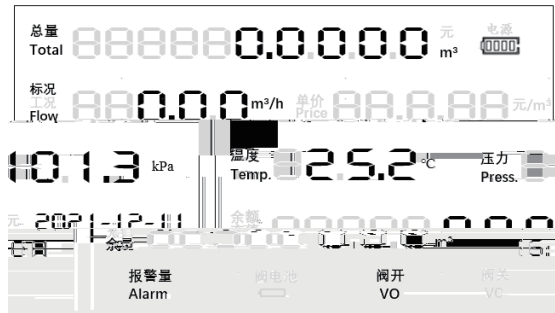


6-5

6.1.9.2.

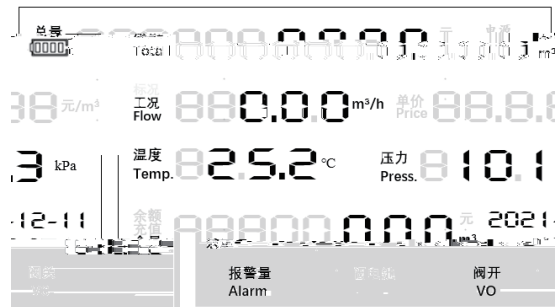
" n"

6-6



6-6

6-7



6-7

Modbus

6-8



6-8

Modbus

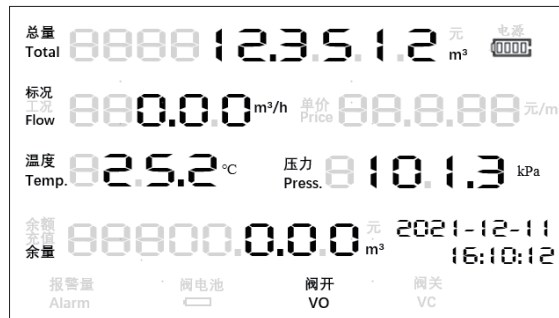
6.1.9.3

0

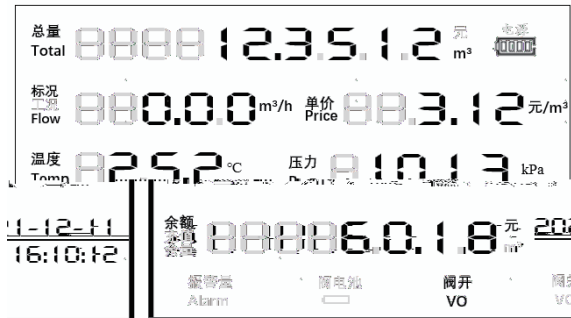
6-9

0

6-10



6-9



6-10

Modbus



6-11

6.1.9.4

" "

6-12

C

6-13

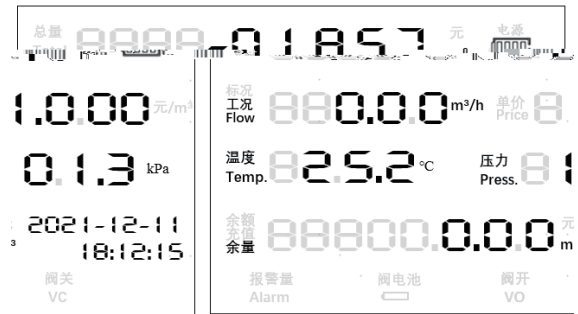
K

Z/Zb



6-12

C



6-13

K

6.1.9.5

6.4

6-14

" F-05"



6-14

6.1.9.6

2s

5

10

" SENDX"

6-15

X

1-4

4

1

" RECVX" 2 X

1-4, 4

1



6-15

" SEND"

6.2

6.2.1

8

INC

6.2.2

8

8

1		PAS1 x x x x PAS2 x x x x x	1 *	* (7)
2		x x x x x x x x x m3 H_t x x Std x x x x St x x x x x x		
3		x x x x x x x x x m3 dn x x x n x x 2_x _x └───────────────────┘ C_x	;	*
4		total x x x x x x x x x		
5		dr x .x x x x N2 x x .x CO2 x x .x	dr Mn Mc	2_x _x 2_0_Y dr: 0.55 0.75 Mn<15.0% Mc<15.0%
6		dr x .x x x x x x .x x x x .x └───────────────────┘ CO2 x x .x	dr HS MH Mc	2_x _x 2_1_Y dr: 0.55 0.75 MH<10.0% Mc<15.0% HS:27.95 41.93
7		ZGZN_x x .x		2_x _x 2_2_Y
8		x x x x x P x x x x x x x x x └───────────────────┘ x x x x x x x x x x └───────────────────┘		

9		<p>xxxxxxx</p> <p>Hs .xx</p> <p>En_y/n</p> <p>Energy</p>	<p>* HS**</p> <p>***</p>	<p>* **HS:18.64 44.73</p> <p>***</p> <p>O_n: 1_y:</p>
10		<p>ICnod oFF</p> <p>ICSor vb</p> <p>IC XX.XX</p>	<p>ICnod *</p> <p>ICSor **</p> <p>IC ***</p>	<p>*IC</p> <p>O_OFF</p> <p>1_on</p> <p>**IC</p> <p>O_OFF</p> <p>1_Vn</p> <p>2_Vb</p> <p>3_VbT</p> <p>*** 0.01-11</p>
11		<p>20A_xxxxx</p> <p>Ccur xxxxx</p> <p>Cadj .xxx</p> <p>CSor oFF</p>	<p>20mA *</p> <p>Ccur 9000-10999**</p> <p>Cadj Cad***</p> <p>CSor *****</p>	<p>*20mA</p> <p>0-999999</p> <p>0-999999</p> <p>0-120</p> <p>0-999999</p> <p>***</p> <p>0.9-1.0999</p> <p>**** :</p> <p>-0.100-0.100mA</p> <p>*****</p> <p>O_OFF</p> <p>1_qb</p> <p>2_qn</p> <p>3_P</p> <p>4_P</p>
12		<p>xxxx_xxx_xxx</p> <p>xx_xxx</p> <p>b1n_x b2g_x</p> <p>PASS__xxxx</p>	<p>b1n*</p> <p>b2g*</p> <p>1</p>	<p>X " 0"</p> <p>" 1"</p> <p>100%</p>
13		<p>L__y/n</p> <p>UP__y/n</p> <p>r_t__y/n</p>		
14		<p>bat_t xxx</p> <p>t_nod x</p> <p>t xxx</p>	<p>*</p>	<p>*</p> <p>0:</p> <p>1</p> <p>2</p> <p>8</p>
15		<p>t_t x-xxxx</p> <p>xx</p>	<p>1-10</p>	
16		<p>SAPAS xxxx</p>	<p>1111</p>	<p>2</p>
17		<p>EEPro_SUCC</p>		

6.3.2.2

" " " Continue" 6-17
 " " " Continue"

6.3.2.3



6-17

" " " " /
 " " " " " tj_SUCC" 6-18



6-18

" no_SUCC" 6-19



6-19

6-20 2

6-20

6.3.3

6.4

9

9

F-05		
F-09		
F-28		2
F-31		
F-35		
F-75		
F-76		
F-77		
F-80		1. 2. 2

10

10

11

11

A_01	FAIL_01
A_02	FAIL_02
A_03	FAIL_03
A_04	APN FAIL_04
A_05	FAIL_05
A_06	TCP CLIENT FAIL_06
A_07	FAIL_07
A_08	TCP SERVER , FAIL_08
A_09	FAIL_09
0x98A	

CPU

12

12CPU

6.5

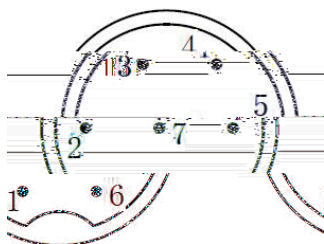
6.5.1

I2G-7B

6-21

13

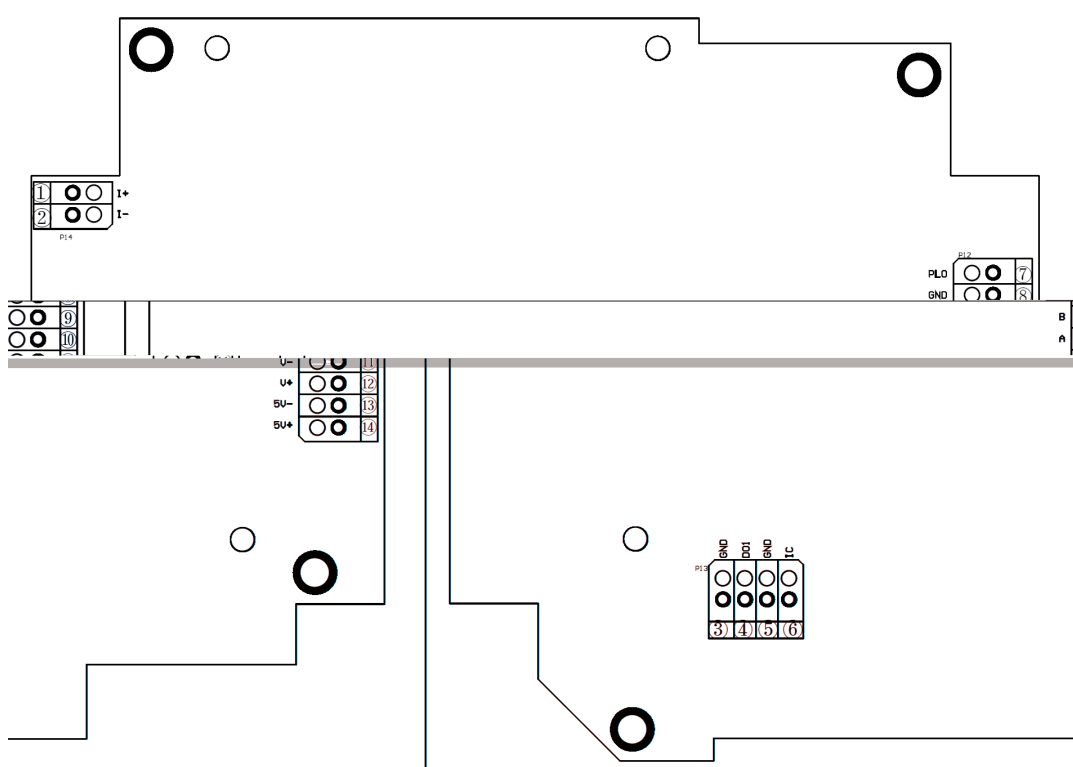
13



6-21

1		RS485	B
2		RS485	A
3		24V	V-
4		24V	V+
5			PLO
6		5V	5V-
7		5V	5V+

6.5.2



6-22

1	4-20mA	I+	8	DGND
2	4-20mA	I-	9	RS485 B
3		DGND	10	RS485 A
4		DO1+	11	24V V-
5		DGND	12	24V V+
6	IC		13	5V 5V-
7		PLO	14	5V 5V+

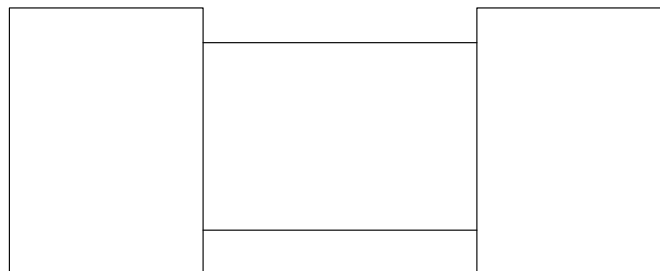
6.5.2.1



6- 23

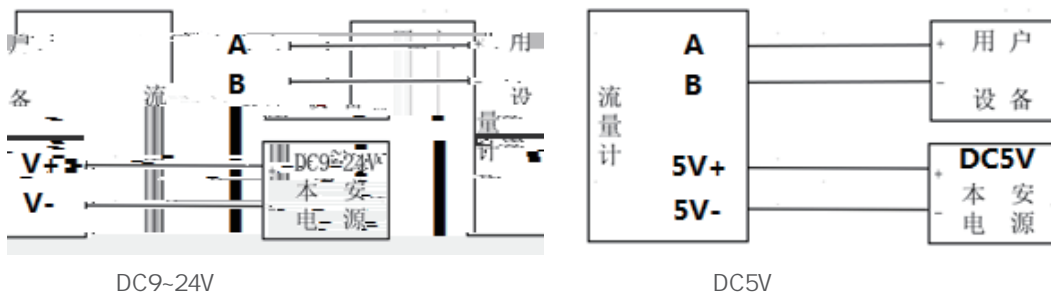
6.5.2.2

IC



6- 24

6.5.2.3 RS485



6- 25 RS485

4mA 20mA
300m

0 Q_{20mA} Q_{20mA}

± 0.3% FS,

4mA 20mA

$$R_L(\max) = (V_S - 13) / 20\text{mA}$$

$$V_S = 24V \quad R_L(\max) = (24 - 13)V / 20\text{mA} = 550$$

3.6V

" "

30

30

" "

" "

30

" "

7.1.

7.2.

7.3.

7.4.

7.5.

7.6.

7.7.

" on "

" of "

7.8.

5

7.9.

GB/T 3836.13-2021 13

GB/T 3836.15-2017 15

GB/T 3836.16-2017 16

GB 50257-2014

8.1.

8.2.

8.3.

9.1.

()

9.2.

GB/T25480

9.3.

a.

b.

c.

-20

+50

d.

80%

e.

10.1

10.2

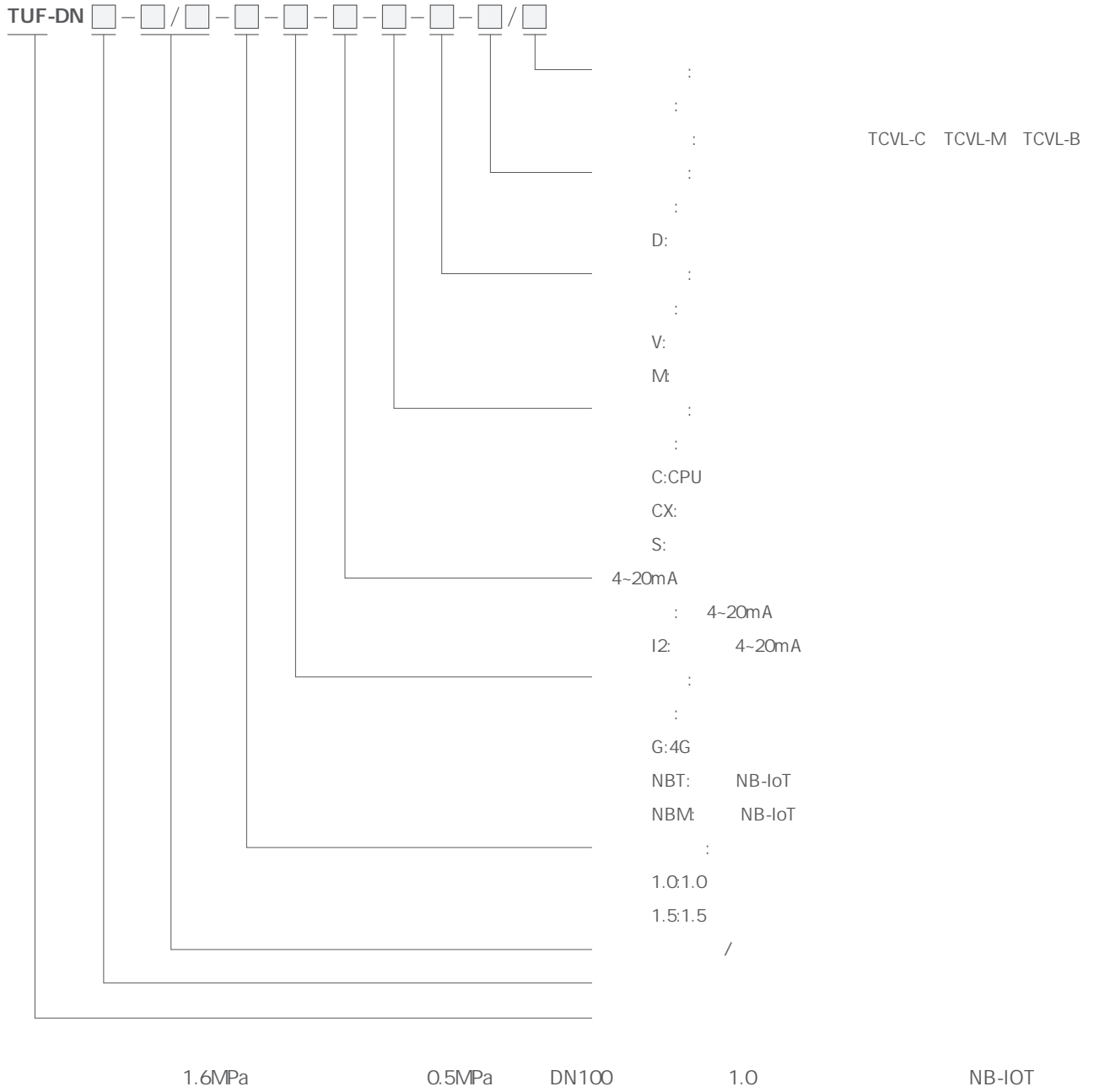
a.

b.

c.

d.

11.1.



TUF-DN100-0.5/1.6-1.0-NBT-S-M-/TCVL-B

11.2. SRERG-88

- a. 0.7
- b. 0
- c. 1%
- d. (MJ/m³) 39.96MJ/m³

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邮编：325800

销售热线：0577-68856655

售后热线：400-926-9922

网址：www.tancy.com

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