



Product description

NY3051M series intelligent online densimeter is widely used for liquid density measurement of process technology. This product can continuously monitor online liquid density without process interruption. The product adopts an integrated structural design with no moving parts, making it easy to install and maintain.

Applicable working conditions

■ Pulp and Paper Industry ■ Non ferrous metal smelting ■ Mining mud
 ■ chemical industry ■ Food industry ■ Beverage Industry

Technical Parameter

Performance index				
Resolution		0.001g/cm ³		
Environmental temperature impact		≤ ± 0.2% F.S/10 °C		
Long term stability		≤ ± 0.2%/URL (12 months)		
Installation position impact		The impact caused by changes in any installation position can be corrected through a reset operation		
Static pressure influence		≤ ± 0.1%/range/1MPa		
Response time		0.25s		
Power impact		≤ ± 0.005%/URL/V		
Vibration impact		≤ ± 0.25%/URL/g		
Applicable working conditions				
Working temperature		-40~150 °C		
Environment/storage temperature		-40~85 °C		
Usage/storage humidity		≤ 95% RH		
Electromagnetic compatibility				
Serial number	Test items	Basic standards	Test conditions	Performance Level
1	Radiated interference (shell)	GB/T 9251-2008	30MHz~1000MHz	qualified
2	Conducted interference (DC power port)	GB/T 9251-2008	0.15MHz~30MHz	qualified
3	Classic Discharge Point (ESD) Immunity	GB/T 17626.2-2006	4kV (electric shock) 8kV (air)	B
4	Radio frequency electromagnetic field immunity	GB/T 17626.3-2006	10V/m (80MHz~1GHz)	A
5	Power frequency magnetic field immunity	GB/T 17626.8-2006	30A/m	A
6	Point fast transient pulse group immunity	GB/T 17626.4-2008	2kV (5/50ns, 5kHz)	B
7	Surge immunity	GB/T 17626.5-2008	500V (between lines) 1kV (between lines and ground) (1.2 μ S/50 μ S)	B
8	Immunity to conducted interference induced by radio frequency fields	GB/T 17626.6-2008	3V (150kHz~80MHz)	A

Transmission module

Power supply	10~32V DC *
Load range	Current type load resistance $R_L \leq (U_s U_{min})/0.026$, U_{min} please refer to the minimum value of power supply voltage;
Instrument diagnosis function	When the instrument malfunctions, output alarm current;
Display variables	percentage, output current, main variables (Pa, kPa, MPa, mbar, bar, psi, mmH ₂ O, etc.);

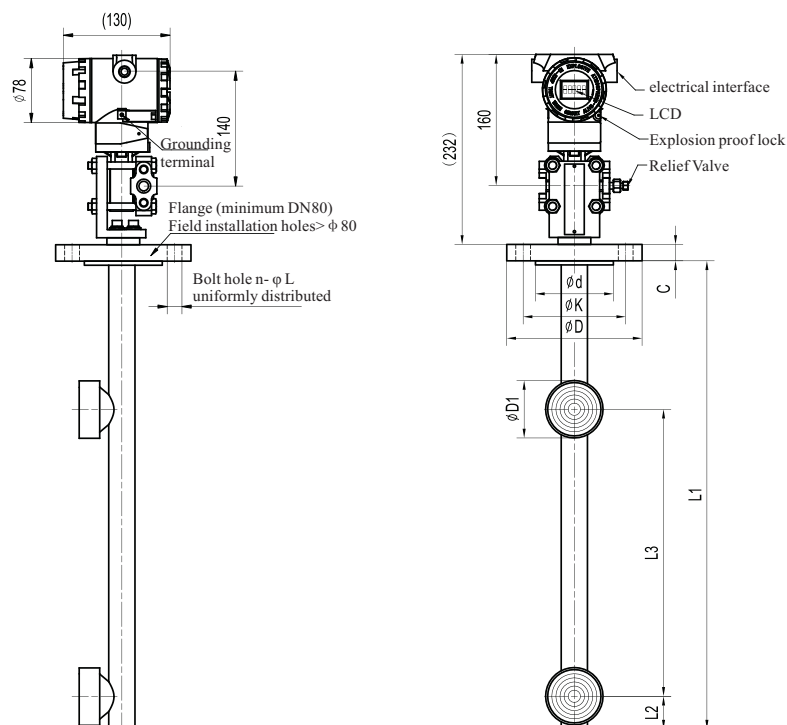
*When HART communication is required, the voltage should be $\geq 18.5V$

Material specifications

Shell material	cast aluminum alloy (default), SUS304, SUS316
Protection level	Ip65 (default), IP67
Filling fluid	silicone oil
Sealing ring material	PTFE (default), metal wound gasket
Nameplate material	SUS304
Flange material	SUS304 (default), SUS316L
Probe material	SUS316L

Overall dimensions

direct plug-in type

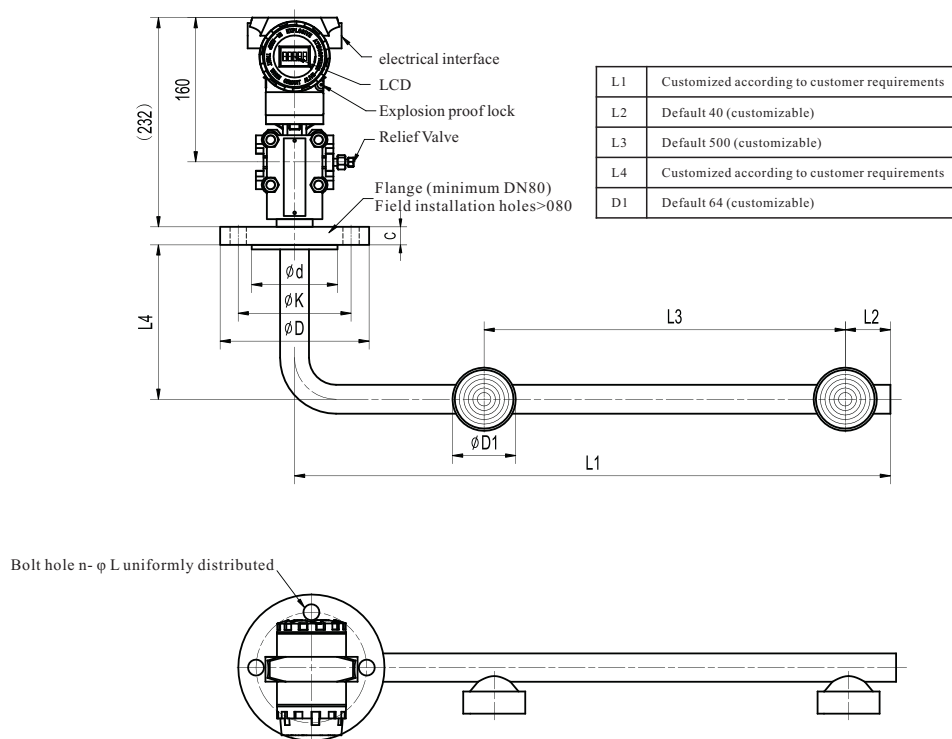


Unit: mm

L1	L2	L3	D1
Customized according to customer requirements	Default 40 (customizable)	Default 500 (customizable)	Default 64 (customizable)

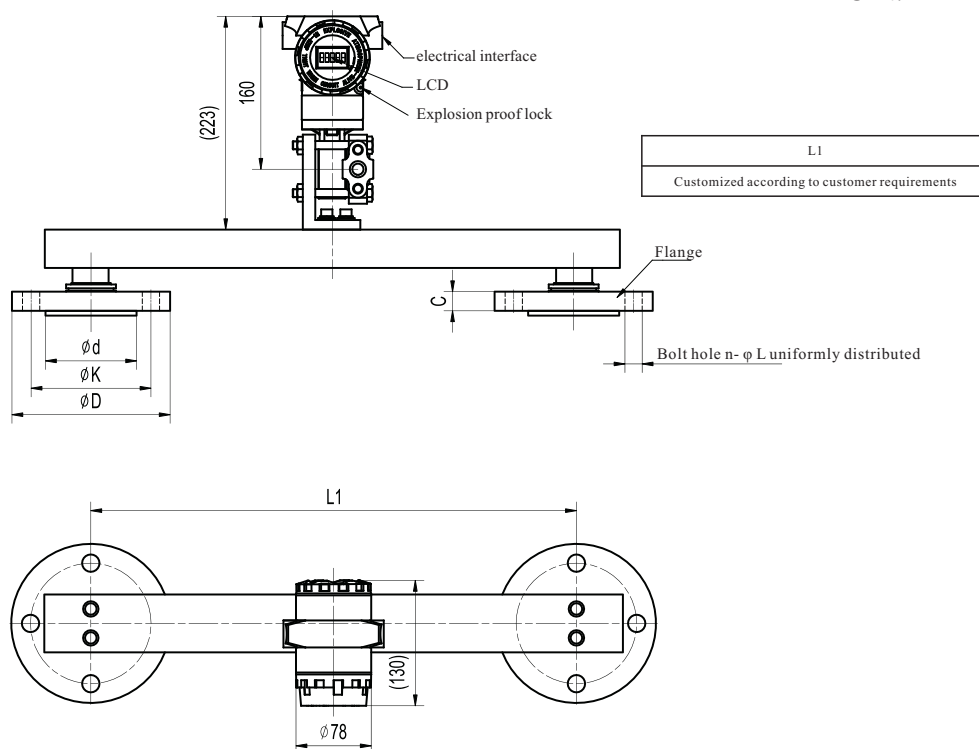
Curve insertion type

Unit: mm



Side mounted plug-in type

Unit: mm





Project	Code	Explain
Product model	NY3051M	
Sensor type	J	Metal capacitive sensor
	D	Single crystal silicon sensor
Installation method	A	Straight tube insertion type
	B	Bend insertion type
	C	Side mounted
output signal	E	4-20mA
	S	4-20mA, digital communication with HART protocol
	M	Modbus RS485
Electrical interface	1	M20 * 1.5 internal thread
	2	NPT1/2 internal thread
	3	G1/2 internal thread
Display module	M5	Intelligent LCD display
Process Connection	H3	HG/T20592; PN10/16
	H5	HG/T20592; PN25/40
	J1	JIS B2220; 10K
	J2	JIS B2220; 20K
	A1	ASME B16.5; 150 LB
	A2	ASME B16.5; 300 LB
	A4	ASME B16.5; 600 LB
	KG	Clamp
Process connection size	T	Special specifications
	6	DN50 (2 ")*
	8	DN80 (3 ")
	9	DN100 (4 ")
	L	Sanitary clamp a64mm * 2
Diaphragm material	2	SUS316L
	3	Hastelloy C-276
	4	Monel
	5	tantalum
	6	titanium
Flange material	1	SUS304
	2	SUS316L
Liquid receiving material coating	N	nothing
	Y	PFA (Teflon)*
Distance between pressure film pieces	2	500mm
	T	Special specifications
Vertical probe length		1-3 meters (plug-in only) (Example: When the vertical probe rod is 1.5 meters long, the code is 15)
Horizontal length of bent pipe		0~0.5m (plug-in only) (Example: When the lateral length of the bend is 0.3m, the code is 30)

Additional Options		
project	Code	Explain
Protection level	P7	IP67 protection
Flow tube	H2	Used to reduce flow rate
Shell material	K4	SUS304
	K6	SUS316

Note: 1. Insertion type: flange opening size ≥ 80 mm.

2. The process connection size DN50, clamp 64 options, and the liquid material coating PFA option are only applicable to products with side mounted installation methods.

Common flange standard size

Flange size DN20(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	105	58	18	75	14	4	46
HG20592 PN63	130	58	22	90	18	4	46
ANSI 150	98.6	42.9	12.7	69.9	16	4	46
ANSI 300	117.4	42.9	15.8	82.6	19	4	46
ANSI 600	117.4	42.9	15.8	82.6	19	4	46
JIS 10K	100	56	14	75	15	4	46
JIS 20K	100	56	16	75	15	4	46
JIS 30K	125	60	18	85	19	4	46

Flange size DN25(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	115	65	20	85	16	4	46
HG20592 PN63	140	65	24	100	18	4	46
ANSI 150	108	50.8	14.2	79.3	16	4	46
ANSI 300	124	50.8	17.5	88.9	19	4	46
ANSI 600	124	50.8	17.5	88.9	19	4	46
JIS 10K	125	65	14	90	19	4	46
JIS 20K	125	65	16	90	19	4	46
JIS 30K	130	65	20	95	19	4	46

Flange size DN32(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	140	75	20	100	18	4	46
HG20592 PN63	155	75	24	110	22	4	46
ANSI 150	117.3	63.5	15.7	88.9	16	4	46
ANSI 300	133.4	63.5	19	98.6	19	4	46
ANSI 600	133.4	63.5	20.6	98.6	19	4	46
JIS 10K	135	75	16	100	19	4	46
JIS 20K	135	75	22	100	19	4	46
JIS 30K	140	75	22	105	19	4	46



Flange size DN40(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	150	85	20	110	18	4	46
HG20592 PN63	170	85	26	125	22	4	46
ANSI 150	127	73.1	17.5	98.6	16	4	46
ANSI 300	155.5	73.1	20.6	114.3	19	4	46
ANSI 600	155.5	73.1	22.4	114.3	22.3	4	46
JIS 10K	140	85	16	105	19	4	46
JIS 20K	140	85	18	105	19	4	46
JIS 30K	160	85	22	120	23	4	46

Flange size DN50(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	165	95	20	125	18	4	46
HG20592 PN63	180	95	26	135	22	4	46
ANSI 150	152.4	92	19.1	120	19	4	46
ANSI 300	165.1	92	22.4	127	19	8	46
ANSI 600	165.1	92	25.4	127	19	8	46
JIS 10K	155	95	16	120	19	4	46
JIS 20K	155	95	18	120	19	8	46
JIS 30K	165	95	22	130	19	8	46

Flange size DN65(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	185	118	20	145	18	8	64
HG20592 PN63	205	118	28	160	22	8	64
ANSI 150	178	104.6	22.3	139.7	19	4	64
ANSI 300	190.5	104.6	25.4	149.4	22.3	8	64
ANSI 600	190.5	104.6	28.5	149.4	22.3	8	64
JIS 10K	175	105	18	140	19	4	64
JIS 20K	175	105	20	140	23	8	64
JIS 30K	200	105	26	160	23	8	64

Flange size DN65(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	200	127	20	160	18	8	64
HG20592 PN63	215	127	28	170	22	8	64
ANSI 150	190.5	127	23.9	152.4	19.1	4	64
ANSI 300	209.5	127	28.5	168.2	19.1	8	64
ANSI 600	209.5	127	31.8	168.2	22.3	8	64
JIS 10K	185	127	18	150	19	8	64
JIS 20K	200	127	22	160	19	8	64
JIS 30K	210	127	28	170	23	8	64

Flange size DN65(unit: mm)							
Flange specifications	external diameter ϕD	Sealing surface ϕd	Thickness C	Hole Centre-to-centre distance K	Aperture ϕL	Number of holes n	Insertion tube diameter ϕB
HG20592 PN10/40	220	157	22	180	18	8	75
HG20592 PN25/40	235	157	24	190	22	8	75
HG20592 PN63	250	157	30	200	26	8	75
ANSI 150	228.6	157	23.9	190.5	19.1	8	75
ANSI 300	254	157	31.8	200	22.4	8	75
ANSI 600	273	157	38.1	200	25.4	8	75
JIS 10K	210	157	24	175	19	8	75
JIS 20K	225	157	24	185	23	8	75
JIS 30K	240	157	32	195	25	8	75

Reference for corrosion resistance of some materials

Media Name	Concentration	temperature	316	Hastelloy C	Monel	tantalum
H ₂ SO ₄	5	Room temperature boiling point	★ ×	★ ○	★ ○	★ ★
	10	Room temperature boiling point	×	★ ×	★ ○	★ ★
	60	Room temperature boiling point	×	★ ○	★ ○	★ ★
	80	Room temperature boiling point	×	★ ×	×	★ ○
	95	Room temperature boiling point	×	★ ×	×	★ ×
HCl	5	Room temperature boiling point	×	○ ×	×	★ ★
	10	Room temperature boiling point	×	○ ×	×	★ ★
	20	Room temperature boiling point	×	○ ×	×	○ ○
	35	Room temperature boiling point	×	○ ×	×	○ ○
HNO ₃	10	Room temperature boiling point	★ ★	○ ×	×	★ ★
	30	Room temperature boiling point	★ ○	○ ×	×	★ ★
	68	Room temperature boiling point	★ ○	○ ×		★ ★
	Smoke	Room temperature	★ ○			★ ★
H ₃ PO ₄	30	Room temperature boiling point	★ ○	★ ★	×	★ ★
	50	Room temperature boiling point	★ ○	★ ★	×	★ ★
	70	Room temperature boiling point	★ ×	★ ○	×	★ ★
	85	Room temperature boiling point	★ ×	★ ×	×	★ ★
H ₂ SO ₄ +HNO ₃		Room temperature				★
H ₂ CrO ₄	20	Room temperature boiling point	○	★		★ ★
aqua regia		Room temperature boiling point	×	★ ×		★ ★
HCN		Room temperature	★	★	★	★
H ₃ BO ₃		Room temperature	×	○	○	
H ₂ SO ₃		Room temperature	○	×	×	★

Media Name	Concentration	temperature	316	Hastelloy C	Monel	tantalum
HF	5 48	Room temperature boiling point	×	×	★ ○	×
CH ₃ COOH	100	Room temperature boiling point	★ ★	★ ★	★ ★	★ ★
HCOOH	50	Room temperature boiling point	×	★	○	★
oxalate	10	Room temperature boiling point	○ ×	○ ○	○ ○	★ ○
Citric acid	50	Room temperature boiling point	★ ★	★ ★	○ ○	★ ★
NaOH	20	Room temperature boiling point	★ ★	★	★ ○	×
	40	Room temperature boiling point	★ ★	★	★ ○	×
KOH	50	Room temperature	○	○	★	★
FeCl ₃	30	Room temperature boiling point	×	○ ×	×	★ ★
NaCl	20°C saturation	Room temperature boiling point	○	★ ○		★ ★
NH ₄ Cl	25	Room temperature boiling point	○	★	○ ○	★ ★
CaCl ₂	25	Room temperature boiling point	○	★	★ ○	★ ★
MgCl ₂	42	Room temperature	○ ○	★ ★		★ ★
(NH ₄) ₂ SO ₄	20°C saturation	Room temperature boiling point	★	★ ○	★ ○	★ ★
Na ₂ S	10	Room temperature boiling point	★ ○	★ ★	★ ★	★ ★
Na ₂ SO ₄	50	Room temperature boiling point	★ ★	★ ★	★ ○	★ ★
NH ₄ NO ₃	10	Room temperature boiling point	★ ★	★ ★	×	★ ★
KNO ₃	wholly	Room temperature boiling point	○	○	○ ○	★ ★
Cl ₂	dry	Room temperature	★	★	○	★
	wet	Room temperature	×	○		★
SO ₂	wet	Room temperature boiling point	★ ★			★ ★
H ₂ S	wet	Room temperature	★	★	★	★
NH ₃ ·H ₂ O	100<	50°C 100°C	★ ○	★ ★		

Note: ★ Materials with excellent corrosion resistance;○ Materials with good corrosion resistance;× Material with poor corrosion resistance