

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922) 49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Ижевск (3412)26-03-58
Иваново (4932)77-34-06
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижегород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Россия (495)268-04-70

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сыктывкар (8212)25-95-17
Сургут (3462)77-98-35
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Казахстан (772)734-952-31

Тольяти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

<https://chaosensor.nt-rt.ru> || crx@nt-rt.ru

Датчик дождя СС-М20



INTRODUCTION & PRINCIPLE

Tipping bucket rain gauge is based on the principle of converting rainfall into measurable physical signals to measure precipitation. It can be widely used in small weather stations, hydrological stations, agriculture and forestry and other related departments to measure precipitation and precipitation Intensity, precipitation time. Output is the pulse signal, and measure the rainwater by recording the pulse number.

FEATURES:

- Good linearity, long transmission distance, and good anti-interference ability;
- The unique design of the funnel can effectively prevent debris from blocking the funnel.
- The tipping part support system is well-made, with low friction, and the tipping part is sensitive and stable in performance.
- The rain sensor housing and main structure are made of stainless steel, with good appearance quality and high grade;
- The water inlet is made of stainless steel in a single stamping process, with good smoothness and small water retention error;
- There is a level-adjusting bubble in the chassis.

TECHNICAL SPECIFICATION

Rainfall Collector	φ200mm		
Measuring Range	≤4mm/min		
Resolution	0.1mm		
Output Signal	Reed switch on and off, pulse (1 pulse=0.1mm precipitation)	4-20mA	RS485 Modbus RTU
Weight	4KG		
Height	428 mm		
Measurement Accuracy	≤ 3%		
Material	stainless steel		
Response Time	1S		
Work Environment	Temperature : -10°C to +50°C ; Moisture: <95% (40°C)		
Cable length	8m		
Ingress Protection	IP65		
Support	Fixing for installation on mast or horizontal arm (1, 1¼, 1½, 1¾, 2, 2¼, 2½, 2¾, 3, 3¼ or 3½ inches in diameter).		

Measuring base (standard) reference device (including standard substance)/ main instrument used in calibration

Item	Range
Standard radar rain gauge	0-4mm/min
Rain simulator	0-5mm/min

Calibration method and results

The tipper type rain gauge is a telemetry rain gauge composed of a sensor and a signal recorder. The sensor is composed of a water catcher, a tipper, a measuring tipper, a counting tipper, a spring switch, etc. Recorder is composed of counter, recording pen, self-recording clock, control circuit board and so on. Its working principle is: the rainwater from the top of the water socket into the water socket, into the water funnel, through the funnel into the tipping bucket, when the volume of water reaches a certain height (such as 0.2 mm), tipping bucket out of balance overturned. Each time the bucket is dumped, the switch is connected to the circuit, and a pulse signal is transmitted to the recorder. The recorder controls the self-recording pen to record the rainfall, and then the rainfall process can be measured

Standard radar rain gauge value	CC-M20 rain gauge value
1.1mm/min	1.2mm/min
1.5mm/min	1.6mm/min
1.8mm/min	1.8mm/min
2.2mm/min	2.2mm/min
3.2mm/min	3.1mm/min
3.6mm/min	3.6mm/min

COMMUNICATION PROTOCOL

Communication specification

9600,8,1,N,N

Write station number:

Device address Function code Start register address No. of registers Data length

Data CRC check

00 10 0001 0001 02 00xx CRCloCRChi (XX=0X01-0XFF)

Write register response

Device address Function code Start register address No. of registers CRC check

00 10 0001 0001 CRCloCRChi

Example

Command 00 10 00 01 00 01 02 00 33 EA 04

Respond 00 10 00 01 00 01 51 D8

Initial station number: FF

Read station number command (fixed command)

Device address Function code Start register address No. of registers CRC check

00 03 0001 0001 CRCloCRChi

Station respond

Device address Function code Data length Data CRC check

00 03 02 00xx CRCloCRChi (XX=01-ff)

Example

Read station number

Command 00 03 00 01 00 01 D4 1B

Respond 00 03 02 00 FF C5 C4

Modify cumulative time interval

Device address Function code Start register address No. of registers Data length

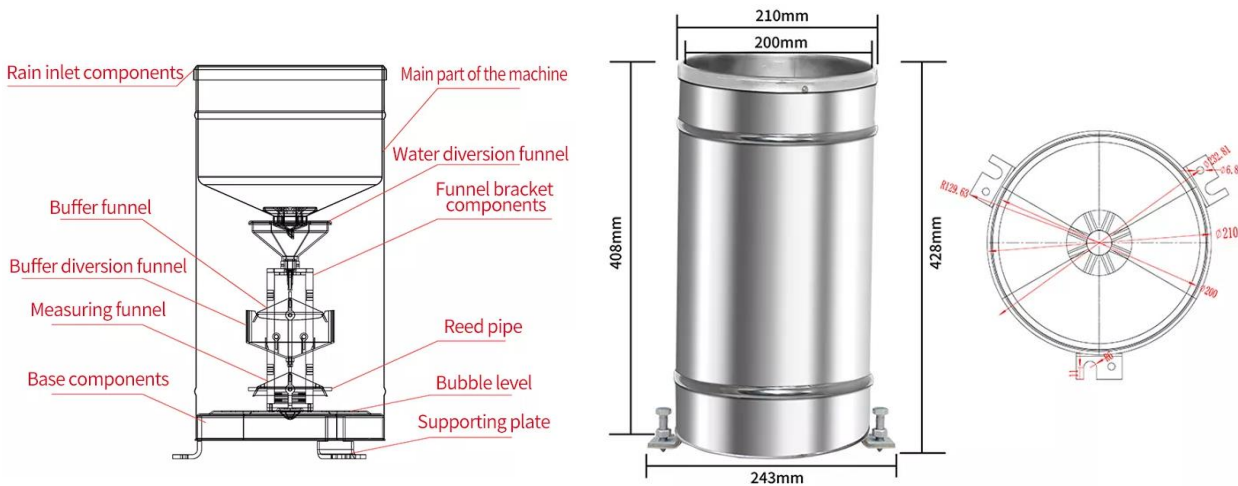
Data(new station number) CRC check

xx 10 0010 0001 02 00xx CRCloCRChi (XX=0X0001-0X7FFF)

Write register response

Device address Function code Start register address No. of registers CRC check

STRUCTURE DIAGRAM



The water collection port collects rainwater and injects into the metering bucket through the water injection port. When the water injection volume reaches a predetermined value, the bucket flips over. During the turning process, the magnetic steel passes the reed switch to turn the reed switch on and off. Records can achieve the purpose of automatic collection.

CHECK & DEBUG

The instrument has been debugged well before leaving the factory. If the error exceeds $\pm 4\%$ after a flood season, it can be calibrated. Use a 10 ml graduated cylinder labeled MC to hold 6.28 ml of water as the base (considering loss) and inject it into the bucket. If it is turned over in advance, the height of the screw should be adjusted downwards and vice versa, and the nut should be tightened after repeated adjustments.

Алматы (7273)495-231
 Ангарск (3955)60-70-56
 Архангельск (8182)63-90-72
 Астрахань (8512)99-46-04
 Барнаул (3852)73-04-60
 Белгород (4722)40-23-64
 Благовещенск (4162)22-76-07
 Брянск (4832)59-03-52
 Владивосток (423)249-28-31
 Владикавказ (8672)28-90-48
 Владимир (4922) 49-43-18
 Волгоград (844)278-03-48
 Вологда (8172)26-41-59
 Воронеж (473)204-51-73
 Екатеринбург (343)384-55-89

Ижевск (3412)26-03-58
 Иваново (4932)77-34-06
 Иркутск (395)279-98-46
 Казань (843)206-01-48
 Калининград (4012)72-03-81
 Калуга (4842)92-23-67
 Кемерово (3842)65-04-62
 Киров (8332)68-02-04
 Коломна (4966)23-41-49
 Кострома (4942)77-07-48
 Краснодар (861)203-40-90
 Красноярск (391)204-63-61
 Курск (4712)77-13-04
 Курган (3522)50-90-47
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
 Москва (495)268-04-70
 Мурманск (8152)59-64-93
 Набережные Челны (8552)20-53-41
 Нижний Новгород (831)429-08-12
 Новокузнецк (3843)20-46-81
 Ноябрьск (3496)41-32-12
 Новосибирск (383)227-86-73
 Омск (3812)21-46-40
 Орел (4862)44-53-42
 Оренбург (3532)37-68-04
 Пенза (8412)22-31-16
 Петрозаводск (8142)55-98-37
 Псков (8112)59-10-37
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
 Рязань (4912)46-61-64
 Самара (846)206-03-16
 Саранск (8342)22-96-24
 Санкт-Петербург (812)309-46-40
 Саратов (845)249-38-78
 Севастополь (8692)22-31-93
 Симферополь (3652)67-13-56
 Смоленск (4812)29-41-54
 Сочи (862)225-72-31
 Ставрополь (8652)20-65-13
 Сыктывкар (8212)25-95-17
 Сургут (3462)77-98-35
 Тамбов (4752)50-40-97
 Тверь (4822)63-31-35

Тольяти (8482)63-91-07
 Томск (3822)98-41-53
 Тула (4872)33-79-87
 Тюмень (3452)66-21-18
 Улан-Удэ (3012)59-97-51
 Ульяновск (8422)24-23-59
 Уфа (347)229-48-12
 Хабаровск (4212)92-98-04
 Чебоксары (8352)28-53-07
 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
 Чита (3022)38-34-83
 Якутск (4112)23-90-97
 Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47

Россия (495)268-04-70

Казахстан (772)734-952-31