NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

BOARD MEETING

CITY OF KRUM
CITY COUNCIL CHAMBERS
146 W. MCCART ST.
KRUM, TX 76249

TUESDAY
APRIL 8, 2014
9:30 AM

NOTICE OF PUBLIC MEETING

OF THE
BOARD OF DIRECTORS of the

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT
at the

City of Krum
City Council Chambers
146 W. McCart St
Krum, TX 76249
Tuesday, April 8, 2014 at 9:30 a.m.

Board Meeting

Notice is hereby given that the Board of Directors of the North Texas Groundwater Conservation District ("District") may discuss, consider, and take all necessary action, including expenditure of funds, regarding each of the agenda items below:

Agenda:

1. Pledge of Allegiance and Invocation.

2. Call to order, establish quorum; declare meeting open to the public.

3. Approval of minutes from the March 11, 2014, board meeting.

4. Consider and act upon approval of invoices and reimbursements.

5. Receive reports from the following Committees*:
   a. Budget and Finance Committee
      1) Receive Monthly Financial Information
      2) Consider and act upon amendment to FY 2014 budget
   b. Investment Committee
   c. Rules and Bylaws Committee
      1) Consider and discuss amending Temporary Rules
   d. Groundwater Monitoring and Database Committee
   e. Policy and Personnel Committee
   f. Conservation and Public Awareness Committee
   g. Management Plan Committee
      1) Receive Quarterly Report

6. Update and possible action on the Northern Trinity/Woodbine Aquifer GAM Overhaul Project and the development of proposed Desired Future Conditions (DFCs).

7. Update and possible action regarding the process for the development of Desired Future Conditions (DFCs) including the consideration and possible approval of consulting services.

8. Consider and act upon establishing a procedure for closure of hand dug wells

9. General Manager's Report: The General Manager will update the board on operational, educational and other activities of the District.

10. Public comment.

11. Open forum / discussion of new business for future meeting agendas.

12. Adjourn public meeting.

* Reports from District standing committees will include a briefing by each committee for the Board on the activities of the committee, if any, since the last regular Board meeting.

The above agenda schedules represent an estimate of the order for the indicated items and is subject to change at any time.

These public meetings are available to all persons regardless of disability. If you require special assistance to attend the meeting, please call (855) 426-4433 at least 24 hours in advance of the meeting to coordinate any special physical access arrangements.

At any time during the meeting or work session and in compliance with the Texas Open Meetings Act, Chapter 551, Government Code, Vernon's Texas Codes, Annotated, the North Texas Groundwater Conservation District Board may meet in executive session on any of the above agenda items or other lawful items for consultation concerning attorney-client matters (§551.071); deliberation regarding real property (§551.072); deliberation regarding prospective gifts (§551.073); personnel matters (§551.074); and deliberation regarding security devices (§551.076). Any subject discussed in executive session may be subject to action during an open meeting.

ATTACHMENT 3

MINUTES OF THE BOARD OF DIRECTORS' PUBLIC MEETING
NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

TUESDAY, MARCH 11, 2014

CITY OF KRUM
CITY COUNCIL CHAMBERS
146 W. MCCART ST
KRUM, TX 76249

Members Present:	Thomas Smith, Ronny Young, Eddy Daniel, Evan Groeschel, Kenny Klement, Ron Sellman
Members Absent:	Philip Sanders, Chris Boyd, Dan Collins
Staff:	Jerry Chapman, Drew Satterwhite, Carolyn Bennett and Carmen Catterson
Visitors:	Kristen Fancher, Sledge Fancher, PLLC C. Kent Adams, The Hills of Lone Star Dale Chepulis, Double D Drilling Bob Fazen, property owner Andrew Figueroa, Town of Little Elm Axel Haubold, Bedrock Ranch May Haubold, Bedrock Ranch Zac Hildenbrand, Inform Environmental Penny Jordan, property owner Keith King, The Weekly News of Cooke County Jerry Morgan, Oak Bend HOA Water Supply Corporation David Patterson, Patterson Professional Services Chris Rakoci, property owner Martin Rakoci, property owner Matt Van Hattan, Collier Consulting Neal Welch, City of Sanger

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1. Pledge of Allegiance and Invocation

Board Member Daniel led the Pledge of Allegiance and the invocation.

2. Call to order, establish quorum; declare meeting open to the public

President Smith called the public meeting to order at 9:37 AM. All Board members were present except Board Members Sanders, Boyd, and Collins

3. Approval of Minutes from the January 14, 2014, public hearing and board meeting

Secretary/Treasurer Young motioned to approve the Minutes from the January 14, 2014 board meeting. The motion was seconded by Board Member Sellman and passed unanimously with Board Members Boyd, Collins and Sanders absent.

4. Consider and act upon approval of invoices and reimbursements.

Mr. Satterwhite reviewed the invoices with the Board.

Board Member Daniel motioned to approve the invoices as presented for a total cost of $46,024.45. The motion was seconded by Board Member Groeschel and passed unanimously with Board Members Sanders, Boyd, and Collins absent.

5. a. Budget and Finance Committee

1) Receive Monthly Financial Information

Mr. Satterwhite reviewed the financial information with the Board.

2) Consider and act upon confirming execution of engagement letter for audit services for fiscal year ending December 31, 2013

The audit proposals were on the February agenda for consideration. However, the meeting was cancelled due to inclement weather. President Smith appointed a committee to review the proposals and select one to be confirmed by the Board. The committee selected Hankins, Easup, Deaton, Tonn & Seay to perform auditing services for 2013 fiscal year.

Secretary/Treasurer Young motioned to select the Hankins, Easup, Deaton, Tonn & Seay Firm to perform 2013 auditing services. The motion was seconded by Board Member Sellman and passed unanimously with Board Members Sanders, Boyd, and Collins absent.

b. Investment Committee

No report received

c. Rules and Bylaws Committee

No report received

d. Groundwater Monitoring and Database Committee

No report received

e. Policy and Personnel Committee

No report received

f. Conservation and Public Awareness Committee

Board Member Klement reported that he had received a question from a citizen as to why yards were irrigated with sprinklers instead of soaker hoses. Board Member Groeschel explained that The Colony uses drip irrigation systems and many of their citizens do as well. Drip irrigation systems result in less water loss to evaporation than traditional sprinkler systems. President Smith explained that the Conservation Committee could review the different types of sprinklers to provide recommendations to property owners.

g. Management Plan Committee

1) Receive quarterly report

Mr. Satterwhite provided the quarterly report. 31 well inspections were performed in 2013.

2) Receive annual report

Mrs. Bennett presented the annual report to the Board. She explained that the staff worked in 2013 to review the Texas Department of Licensing and Regulation (TDLR) submitted driller reports and compared them with the District's registered wells. Many wells were found that needed to be registered. The well drillers were educated on registration requirements and are now coming into compliance.

Board Member Sellman motioned to accept the 2013 annual report as presented. The motion was seconded by Board Member Daniel and passed unanimously with Board Members Sanders, Boyd, and Collins absent.

6. Consider and act upon proposal from Dr. Zac Hildenbrand for the UT-Arlington Barnett Shale study

This was discussed at the January Board meeting with information provided by Dr. Zac Hildenbrand. Dr. Hildenbrand provided a proposal to the Board. Board Member Groeschel asked about the funding process. Dr. Hildenbrand explained that the funding would be provided to Dr. Hildenbrand and then he would provide the appropriate share of funds to UT Arlington. This allows more data to be collected. The timeline includes a full report by September 1st. Updates can be provided to the Board as often as necessary with an expected update within 2-3 months.

The current project is only in the Barnett Shale formation, but they are working to expand into two other shale formations in Texas and eventually across the United States. Mrs. Fancher clarified that the proposal is the same as the one approved by groundwater districts across the State. She confirmed that from a legal perspective, the District would be protected.

Board Member Daniel clarified that the research is scientific and unbiased. Secretary/Treasurer Young explained that he felt this was in line with the District's goals and requirements.

Secretary/Treasurer Young motioned to approve the proposal for well testing with Dr. Hildenbrand. The motion was seconded by Board Member Groeschel and passed unanimously with Board Members Sanders, Boyd, and Collins absent.

7. Update and possible action on the Northern Trinity/Woodbine Aquifer GAM Overhaul Project and the development of proposed Desired Future Conditions (DFCs)

Board Member Daniel explained that Groundwater Management Area 8 (GMA 8) met on January 21st and discussed the Desired Future Condition (DFC) challenge, which is not optional. The deadline for DFC development is May 1, 2016. GMA 8 discussed how the process would work, the need for at least quarterly meetings. The Groundwater Availability Model (GAM) update is on time and on budget. The consultants will run one model based on the existing DFCs and then one based on desired situations. The Texas Water Development Board (TWDB) is still on board and is fully supportive. The updated model will help the District with future goals and to make better educated decisions.

GMA 8 is composed of 12 groundwater districts. North Texas GCD is only one of the 12. The aquifer levels are dropping because the aquifer is being overdrawn. The population is growing and everyone wants more water and there is a limited resource.

The Board discussed legislative efforts to regulate brackish water. Brian Sledge with the Sledge Fancher, PLLC firm is working to educate legislators on the complexity of hydrogeologic formations. President Smith discussed the availability of brackish water and the success experienced recently in desalinating brackish water for drinking water.

8. Update and possible action regarding the process for the development of Desired Future Conditions (DFCs) including the consideration and possible approval of consulting services

GMA 8 is in the process of working to develop DFCs. The updated GAM will be finished in August. Then, the model will be used to develop DFCs for each groundwater district. After that, negotiations will be needed to determine the amount of water that can be removed from the aquifer. The Board entered into a contract with LBG Guyton for interpretation of the GAM. The Board previously discussed entering into a contract on behalf of GMA 8 with Bill Mullican for him to manage the DFC process. Five or six groundwater districts in GMA 8 have agreed to participate in the funding of the contract. The North Texas GCD is the administrative district for GMA 8.

Board Member Daniel motioned for formal approval of the Mullican contract to manage the DFC process. The motion was seconded by Board Member Klement. The motion was passed unanimously with Board Members Boyd, Collins and Sanders absent.

Mrs. Fancher expressed that GMA 8 is the most organized GMA across the state. She expressed appreciation for the way the North Texas GCD operates the meetings.

Pursuant to Government Code Section 551.071, the Board adjourned into closed Executive Session at 10:22 AM to discuss the following:

Consultation with Attorney

The Board reconvened into regular session at 11:06 AM. President Smith stated no action was taken on items discussed during the Executive Session.

President Smith explained that Items 9, 10 and 11 will be moved to after Item 14 in order to receive public comment before action is taken.

12. General Counsel's Report

a. Update and possible action on the status of groundwater-related case law, including Texas Supreme Court review of *Edwards Aquifer Authority v. Bragg* case

Mrs. Fancher explained that the *EAA v Bragg* case stated that the burden is on the public to recoup the cost for those who have the takings claim against a groundwater district. An Amicus Brief will be sent to the Texas Water Conservation Association (TWCA) to request they see this case. She recommended that the District consider

Secretary/Treasurer Young motioned to support the Amicus Brief in the amount not to exceed $12,000. The motion was seconded by Board Member Groeschel and passed unanimously with Board Members Boyd, Collins and Sanders absent.

b. Update on groundwater legislative activities

Brian Sledge is the Chair of the TWCA committee. The committee is currently reviewing all possible groundwater legislation in 2015. All language in the proposed legislation will need to be blessed by the TWCA committee. The District has the option of participating at a pro rata share to be represented in the committee and the legislation.

c. Other legal matters

Mrs. Fancher reported that she and Mr. Sledge are currently meeting with LBG Guyton to discuss the GAM and the runs. She also discussed a program that her firm handles to review oil and gas injection well applications. Board Member Daniel explained that the District has utilized that program in the past as recently as 2013.

13. General Manager's Report

President Smith thanked Mr. Chapman for his years of good service and expressed their hope for good fortune in his retirement.

Mr. Satterwhite reported that he had requested permission to apply for agricultural grants. However, upon further review the grant application required a water conservation plan. The grant application will have to wait until after a water conservation plan is adopted.

Mr. Beach with LBG Guyton has requested a workshop to discuss submission of data related to DFCs. Board Member Daniel explained that the discussion will be very technical and will need at least one to two hours. He recommended scheduling a work shop at a separate time from the next Board meeting. The Board requested the staff contact the Board and locate a meeting location, possibly at the City of Krum. Secretary/Treasurer Young recommended hosting it at the Authority offices.

The Board also agreed to host a presentation from the USGS on a water quality monitoring program. A similar item was requested to be developed by Dr. Hildenbrand.

14. Public Comment

Neal Welch with the City of Sanger explained that his City received a letter of violation for his meters. He has explored options to purchase meters with larger registers. He could not find one large enough, but he did learn that they could recalibrate their registers to read in 1000s of gallons. He is anticipating having this completed by the end of March 2014.

Kent Adams, a landowner in Collin County expressed a concern regarding regulation. He has a development where people could move to the country and have some space. Mr. Adams expressed concern that his well is required to be regulated in the Temporary Rules, despite having a very small impact on the aquifer. He stated that the District does not have to regulate wells based on capacity. He stated there are thousands of wells in the same situation as his well. He recommended the District to change the way they determine exempt and non-exempt wells. Mr. Adams stated that he felt the current methods of regulating wells is unfair to "rural dwellers".

Jerry Morgan with the Oak Bend Homeowners Association expressed that he did not like paying more fees for water they are already pumping. However, he wanted to see where the funds are being utilized. He expressed appreciation that the District's activities are visible and available to the public. Mr. Morgan stated he has two wells, one of which will not pump during the summer due to aquifer drawdown and would like to not have to drill another well. Mr. Morgan expressed that he felt the District was working to investigate water quality and water wells and hoped that the District would reduce fees after the initial studies are completed.

Bob Fazen, a Cooke County resident, thanked the Board for their activities and for accepting Dr. Hildenbrand's proposal.

Dale Chepulis with Double D Drilling, a water well drilling company out of Denton County commented on the fact that the Rules are well defined, but he expressed concern about

personal interpretation. Rule 2.1(a)1 regarding exemption and domestic use should be upheld as it is written.

9. Consider and act upon request to waive registration fees

Secretary/Treasurer Young motioned to enforce the rules as they stand. The motion was seconded by Board Member Klement and passed unanimously with Board Members Boyd, Collins and Sanders absent.

10. Consider and act upon request for clarification of Temporary Rules regarding domestic use exemption

President Smith requested the Rules and Bylaws committee further review this item and provide direction at the next meeting. The Board agreed unanimously.

11. Consider and act upon compliance and enforcement activities for violations of District Rules

Board Member Daniel motioned that the Rules have clear compliance and enforcement sections and for those who violate the rules, the District proceeds with compliance and enforcement. The motion was seconded by Secretary/Treasurer Young and passed unanimously with Board Members Sanders, Boyd, and Collins absent.

15. Open Forum / discussion of new business for future meeting agendas

Future agenda items should include repayment to the counties, update on the development of DFCs, and further definition of domestic use exemption.

16. Adjourn public meeting

The public meeting adjourned at 11:48 AM.

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_____ _____

Recording Secretary Secretary-Treasurer

ATTACHMENT 5 A-2

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: April 1, 2014

SUBJECT: AGENDA ITEM NO. 5A (2)

CONSIDER AND ACT UPON AMENDING 2014 BUDGET

ISSUE
Consider and act upon amendments to the 2014 budget

BACKGROUND
At the March meeting, the Board of Directors approved consultant contracts with Mullican and Associates and Inform Environmental. At the January meeting, the Board of Directors approved a consultant contract with LBG Guyton and Associates. After discussion among the members of the staff, it was determined that sufficient revenues were expected to be received this fiscal year to pay for the three (3) additional consulting services contracts.

During the 2014 budget planning, the Board of Directors approved a $5,000 budget for well monitoring/testing equipment. At that time, the budget item was to include the purchase of equipment to measure water levels in the well monitoring program that the district will take over from the TWDB moving forward. Since the budget was adopted, the district staff has identified several benefits to also having a portable flow metering device for the field technician to have available for his/her use.

OPTIONS/ALTERNATIVES
The Board can decide to amend the budget for any of the above items as they see fit, or the Board can wait until the end of the year to modify the budget for adjustments of expenditures that occurred during the course of the year.

CONSIDERATIONS
Since the additional consulting services have already been approved by the Board, it would seem to be the best order of business to proceed with identifying this approved expenditure in an approved budget.

The district staff is of the opinion that a portable flow meter would assist in determining whether wells are exempt or non-exempt. The district has received many applications/logs that show the well production capabilities to be just below the exempt limit of 25 gpm. If the board is interested, the staff could also pursue a potential cost sharing of the flow metering and well measuring equipment with Red River Groundwater Conservation District.

STAFF RECOMMENDATIONS
The staff recommends the Board approve the amended budget illustrating the three (3) consultant contracts and portable flow measuring equipment.

ATTACHMENTS
Draft Amended Budget

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E. General Manager

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT
BUDGET 2014

	Approved Budget 2014		Amendments	Final Budget 2014
Ordinary Income/Expense				
Income				
46003 GMA8	20,000	(3)	28,000	48,000
*46005 PRODUCTION FEES	600,000			600,000
46006 WELL REG FEES	2,500			2,500
46002 - COUNTY LOAN	-			-
Total Income	622,500		28,000	650,500
Expense				
77010 ADMINISTRATIVE	110,000			110,000
77020 ADS-LEGAL	1,000			1,000
77025 ACCOUNTING	20,000			20,000
77027 AUDITING	5,000			5,000
77050 BANKING FEES				-
77100 CONSULTING UPDATE	140,000			140,000
77150 CONSULTING-HYDROGEO		(1)	18,960	18,960
77150 CONTRACT FIELD PERSON	55,000			55,000
77325 DIRECT COSTS-REIMB	4,500			4,500
77450 DUES & SUBSCRIPTION	1,000			1,000
77500 FEES-GMA8	21,818	(3)	31,900	53,718
77650 FUEL/MAINTENANCE	4,000			4,000
77810 INSURANCE & BONDING	5,000			5,000
77970 LEGAL	15,000			15,000
78000 LOAN REIMB	150,000			150,000
78010 MEETINGS & CONFERENCES	1,500			1,500
78310 RENT	2,400			2,400
78600 SOFTWARE MAINT	7,800			7,800
78610 TELEPHONE	2,000			2,000
78775 WATER QUALITY ISSUES		(2)	32,058	32,058
78780 WELL MONITORING/TESTING	5,000	(4)	5,100	10,100
Total Expense	551,018		88,018	639,036
Net to Fund Balance	71,482		-60,018	11,464

(1) LBG Guyton

(2) Inform Environmental

(3) Mullican

(4) Flowmeter, ultrasonic thickness gauge

MEMO

To: Drew Satterwhite P.E., General Manager

From: Wayne Parkman, Field Technician

Date: March 28, 2014

Re: Portable flow metering device

In the last year we have had an unusual amount of wells registered just below the 26 GPM mark to make the well exempt. Several of these wells do not have a discharge point that is accessible to test the flow rate. I have talked to the other groundwater districts to see what they use in this circumstance. All of the districts I spoke with use portable ultrasonic flow meters. The districts are using two different brands, the G.E. Panametrics and the Fuji Portaflow. Most of the districts use the Fuji. The Fuji brand is in the mid-range as far as pricing. Along with the flow meter we would need the buy a pipe thickness gauge. I spoke with a Sales representative with in the San Antonio area that carries the Fuji brand to get an ideal of cost.

Prices are as follows (including a discount from retail):

Portaflow C Ultrasonic Flowmeter: $5842

FS200 Ultrasonic Thickness Gauge: $1235

The G. E. Panametrics starts at $ 6,200

I think it would be beneficial to the district to have a device like this to show concrete evidence on the flow rate of any given well. North Texas GCD may want to share the cost of the units with Red River GCD to lower the rate we would have to pay. I will leave this matter to you and the board to decide what you think is best.

Wayne Parkman WP
Field Technician
North Texas Groundwater Conservation District

See attachments.

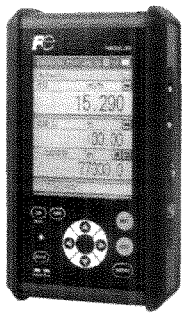
PORTABLE TYPE
ULTRASONIC FLOWMETER (PORTAFLOW-C)

DATA SHEET FSC, FLD/FSD

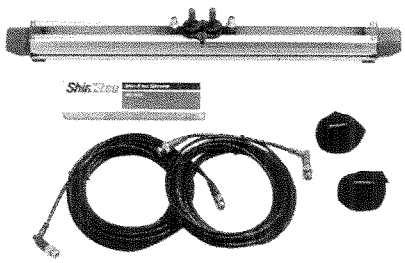
PORTAFLOW-C is a portable type ultrasonic flowmeter utilizing transit time difference for measuring flow rates in pipes from the outside.
It is a compact and light-weight instrument incorporating the latest electronics and digital signal processing technologies, realizing high performance and easy operation.

FEATURES

1. **Compact and light-weight**
   The adoption of the latest electronics and digital signal processing technologies has reduced the size and weight of the flow transmitter by 30% and 40%, respectively, in comparison with traditional model.
2. **Battery operation**
   This flowmeter is designed for 12 hours of continuous operation with its own built-in battery which is rechargeable in 3 hours with the supplied power adapter.
3. **Full variety of detectors**
   The flowmeter can be used with various types of detectors applicable for small to large diameter pipe (ϕ13 to ϕ6000mm) and low to high temperature (–40 to +200°C).
4. **High accuracy and high-speed response**
   The flowmeter is designed for high accuracy (±1.0%). Response time is within 1 second.
5. **Improvement in anti-bubble characteristic**
   Anti-bubble characteristic is greatly improved by digital signal processing.
6. **Excellent performance and easy operation**
   Large type graphic LCD that is bright but easy-to-see and minimum number of function keys are used for page selection, allowing easy setting.
   The flowmeter is water-proof and can be used in a place where it is exposed to rain.
7. **Built-in SD memory card**
   With standard capacity (256MB), data can be saved for a long time (available up to 8GB).
8. **Serial communication**
   Use of a USB port allows you to connect a personal computer easily.
9. **Heat quantity measurement**
   Heat quantity can be measured by temperature input, making energy management easy for cooling and heating.
10. **Graphic printer connection (option)**
    Easy recording with the Integral type printer.
11. **Flow velocity profile measurement (option)**
    Flow status can be observed in real time.
12. **Thickness measurement (option)**
    Use of an optional thickness gauge probe enables measuring thickness of pipes.



Flow transmitter (FSC)



Detector, etc. (FLD)

SPECIFICATIONS

Measuring objects

Measurement fluid: Uniform liquid in which ultrasonic waves can propagate.
Turbidity of fluid: 10000 mg/L or less
State of fluid: Well-developed turbulent or laminar flow in a filled pipe.
Fluid temperature: –40 to +200°C
Measuring range: 0···±0.3 to ±32m/s

Piping conditions

Applicable piping material: Select from carbon steel, stainless steel, cast iron, PVC, FRP, copper, aluminum, acrylic or material of known sound velocity.
Pipe size: Flow rate measurement
ϕ13 to ϕ6000mm
Flow velocity profile measurement
ϕ40 to ϕ1000mm
Lining material: Select from no lining, tar epoxy, mortar, rubber, Teflon, pyrex glass or material of known sound velocity.
Note) There is no gap between the lining and the pipe.

Straight pipe length:
10D or more for up stream and 5D or more for down stream (D: internal pipe diameter)
Refer to Japan Electric Measuring Instruments Manufactures' Association's standard JEMIS-032 for details.

Performance specifications

Accuracy rating:

Piping diameter (inner diameter)	Flow velocity range	Accuracy
ϕ13 to ϕ25mm	2 to 32m/s	±2.5% of rate
	0 to 2m/s	±0.05m/s
ϕ25 to ϕ50mm	2 to 32m/s	±1.5% of rate
	0 to 2m/s	±0.03m/s
ϕ50 to ϕ300mm	2 to 32m/s	±1.0% of rate
	0 to 2m/s	±0.02m/s
ϕ300 to ϕ6000mm	1 to 32m/s	±1.0% of rate
	0 to 1m/s	±0.01m/s

Note) Reference conditions are based on JEMIS-032.

Flow transmitter (Type: FSC)

Power supply: Built-in battery or power adapter
Built-in battery: Special type lithium button battery (5000m Ah)
Continuous operation time, about 12 hours (without printer, back light OFF)
Recharging time, about 3 hours (power adapter used)
Power adapter: Special type power adapter 90V to 264V AC (50/60Hz)
Power Consumption; Approx. 3W

LCD: Semi-transmissive color graphic display 240 × 320 dot (with back light)
Measurement value (instantaneous flow rate, integrated flow rate) and various settings are displayed.
Visibility is excellent even outdoors in direct sunlight.

LED display: DC IN (green), CHARGE (red)
Status display when using AC power adapter.
DC IN (green): Power supply status
CHARGE (red): Battery charging underway

Operating unit: keypad 11 points
(ON, OFF, ENT, ESC, MENU, △, ▽, ◁, ▷, LIGHT, PRINT)
Various settings are made.

Power failure backup:
Measurement value is backed up by nonvolatile memory.
Clock backup with lithium battery (effective term, 10 years or more)

Response time: 1 second

Analog output signals:
4 to 20mA DC, one point (load resistance, 600Ω or less)
Instantaneous velocity, instantaneous flow rate or heat quantity is output after scaling.

Analog input signal:
4 to 20mA DC, one point (input resistance, 200Ω or less)
4 to 20mA DC, one point (input resistance, 200Ω or less) or 1 to 5V DC, one point
(Total 2 points)
Used to input temperature for heat quantity measurement, etc.

SD memory card: Standard 256MB, available up to 8GB
Used for data logger function and recording screen data.

Serial communication:
USB port (device compatible):
Mini B receptacles
Connectable number of Mini B receptacles:
1 unit
Transmission distance: 15m max.
Transmission speed: 500kbps
Data:
Instantaneous velocity, instantaneous flow rate, total value, heat quantity value, error information, logger data, etc.

Printer (option): To be mounted on top of flow transmitter
Thermal line dot printing

Ambient temperature:
−10 to +55°C (Without printer)
−10 to +45°C (With printer)

Ambient humidity: 90%RH or less

Type of enclosure: IP65 (Without printer)

Enclosure case: Plastic case

Outer dimensions: H210 × W120 × D65mm (Without printer)
H320 × W120 × D65mm (With printer)

Weight: 1.0kg (Without printer)
1.2kg (With printer)

Various functions

Display language: Select from Japanese, English, German, French or Spanish (switchable by key operation).

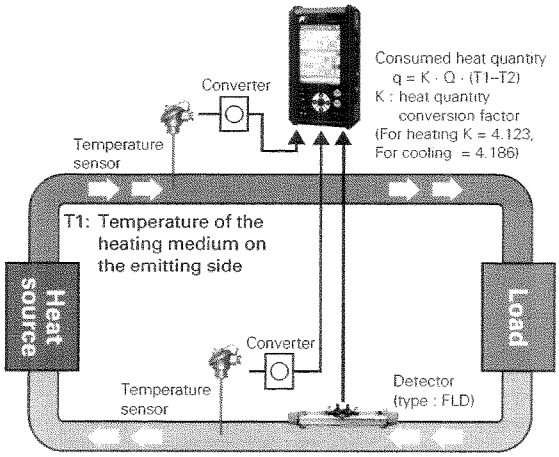
Clock display function:
Time (year, month, day, hour, minute) display and setting available
Accuracy: Monthly variation about 2 minutes, except of time log when power is turned ON/OFF.

Instantaneous value display function:
Instantaneous velocity, instantaneous flow rate display (The flow in reverse direction is displayed with minus "−.")
Numeric value: 10 digits (decimal point is corresponding to 1 digit)
Unit: Metric/English system selectable
Metric system
Velocity: m/s
Flow rate: L/s, L/min, L/h, L/d, kL/d, ML/d, m^3/s, m^3/min, m^3/h, m^3/d, km^3/d, Mm^3/d, etc

Total value display function:
Display of forward or reverse total (reverse is displayed in minus)
Numeric value: 10 digits (decimal point is corresponding to 1 digit)
Unit: Metric/English system selectable
Metric system
Flow rate total: mL, L, m^3, Km^3, Mm^3, etc

Consumed heat quantity display function:
Display of consumed heating medium
Heat flow: MJ/h, GJ/h
Total heat quantity: MJ, GJ

Computation function of consumed heat quantity:
This function calculates the heat quantity received and sent with liquid (water) in cooling and heating.



T2: Temperature of the heating medium of the receiving side
Q: Flow rate of the heating medium

Temperature display function:
Fluid temperature is displayed by current input from temperature transmitter.
Temperature: °C, K

Damping: 0 to 100sec (every 0.1sec) configurable for analog output and velocity/flow rate display

Low flow cut: Equivalent to 0 to 5m/s

Output setting function:
Current output scaling, output type, burn-out setting and calibration available

Serial communication function:
Instantaneous velocity, instantaneous flow rate, total value, heat flow, error information, received waveform, analog input, logger data, etc. can be downloaded in a personal computer.

Logger function: Instantaneous velocity, instantaneous flow rate, total value, heat flow, error information, received waveform, analog input can be saved in a SD memory card.

Waveform display function:
Bi-directional received waveforms can be displayed.

Graph display function:
Flow rate trend graph can be displayed.

Printing function (option):
Hard copy output of a screen
Periodic printing
Logger data

Thickness measurement (option):
Pipe wall thickness can be measured from the outside using the special type thickness gauge (option).
Measurement result can be reflected on the piping parameter.

Flow velocity profile measurement (option):
Flow velocity profile can be observed in real time using the special type detector (option).
(Refer to page 6 for details.)

Detector (Type: FLD)

Type of detector:

Kind	Type	Internal pipe diameter (mm)	Fluid temperature
Small type	FLD12	ϕ50 to ϕ300	–40 to 100°C
Small diameter	FLD22	ϕ13 to ϕ100	–40 to 100°C
High temperature	FLD32	ϕ50 to ϕ400	–40 to 200°C
Middle type	FLD41	ϕ200 to ϕ1200	–40 to 80°C
Large type	FLD51	ϕ200 to ϕ6000	–40 to 80°C

Mounting method:
Mounting on outside of already constructed pipe

Sensor mounting method: V or Z method

Signal cable: Special type coaxial cable
Standard 5m

Method for connection:
Flow transmitter side
Special type connector
Detector side
Large/middle type: Screw terminal
Others: BNC connector

Ambient temperature: –20 to +60°C

Ambient humidity: Large/middle type sensor:
100%RH or less
Others: 90%RH or less

Type of enclosure:
Large/middle type sensor: IP67
Others: IP52

Material and mounting belt/wire:

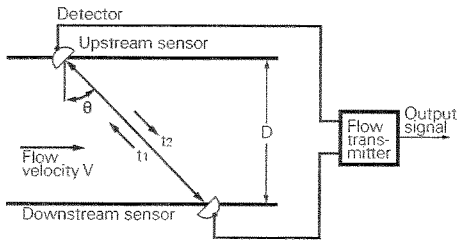
Kind	Type	Sensor case	Mounting bracket	Mounting belt /wire
Small diameter	FLD22	Plastic	Aluminum alloy + Plastic	Plastic cloth belt
Small type	FLD12	Plastic	Aluminum alloy + Plastic	Plastic cloth belt
Middle type	FLD41	Plastic	--	Stainless wire
Large type	FLD51	Plastic	--	Stainless wire
High temperature	FLD32	SUS304	Aluminum alloy + SUS304	Stainless belt

Extension cable (option):
Extended when the length of the detector signal cable is not sufficient.
Length: 10m, 50m

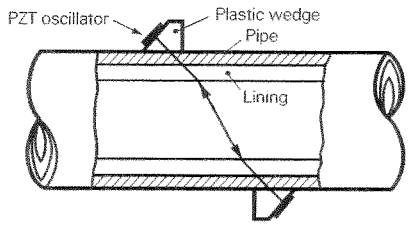
Thickness gauge (option):
Measuring range: 0.8 to 80mm
Accuracy:
Less than 20mm: ±0.1mm
More than 20mm: ±0.5% of read
Operating temperature: 0 to +50°C
Ambient humidity: 90%RH or less

MEASURING PRINCIPLE

With ultrasonic pulses propagated diagonally between the up stream and down stream sensors, flow rate is measured by detecting the time difference obtained by the flow of fluid.

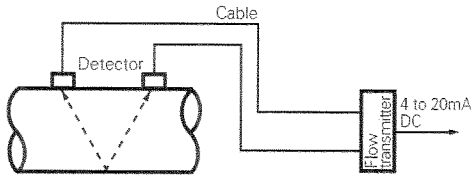


MOUNTING OF DETECTOR

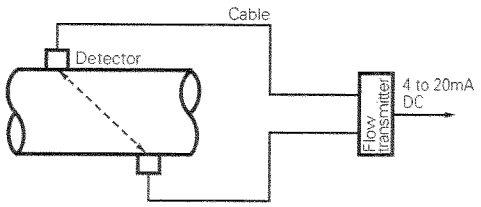


CONFIGURATION DIAGRAM

(1) When V method is used for mounting



(2) When Z method is used for mounting



DETECTOR SELECTION GUIDE

Type	Fluid temperature [°C]	Mounting method	Inner diameter of piping ø (mm) 13 25 50 100 200 250 300 400 1000 3000 6000
FLD12	−40 to 100	V	50 – 300
FLD22	−40 to 100	V	13 – 100
FLD32	−40 to 200	V	50 – 250
		Z	150 – 400
FLD41	−40 to 80	V	200 – 600
		Z	200 – 1200
FLD51		V	200 – 3000
		Z	200 – 6000

FLOW VELOCITY PROFILE DISPLAY FUNCTION (OPTION)

Flow velocity profile can be observed in real time using the dedicated detector from the outside. It is specifiable by the code symbol of flow transmitter.

APPLICATION

Pulse Doppler method is selected to observe flow velocity profile in real time, display the flow status in the pipe, and decide the appropriate measurement location. Also, it can be used for diagnosis of flow and laboratory test.

SPECIFICATIONS

Measuring fluid: Uniform liquid in which ultrasonic waves can propagate.
Turbidity of fluid: Axisymmetric flow in a filled pipe.
Fluid temperature:
−40 to +100°C (FSDP2)
−40 to +80°C (FSDP1,FSDP1)
Air bubble quantity:
0.02 to 15Vol% (Velocity is 1m/s)
Pipe size: Small type sensor : ϕ40 to ϕ200mm
Middle type sensor :ϕ100 to ϕ400mm
Large type sensor :ϕ200 to ϕ1000mm
Measurement range:
0 to ±0.3: ±Maximum Velocity (depending on the pipe diameter)
Maximum flow rate will hereinafter be described in detail.
Note) This function is to observe flow velocity profile, and it may be different from actual flow rate.

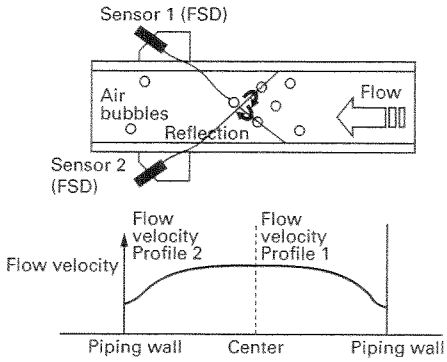
DETECTOR FOR FLOW VELOCITY PROFILE MEASUREMENT (TYPE: FSD)

Mounting method:
Mounting on outside of already constructed pipe
Ambient temperature: −20 to +80°C
Ambient humidity: 100% RH or less
Type of enclosure: IP67
Material: Sensor housing: PBT
Guide frame: Aluminum alloy
Mounting belt: Plastic cloth belt/stainless belt

Measurement principle

<Pulse Doppler method>

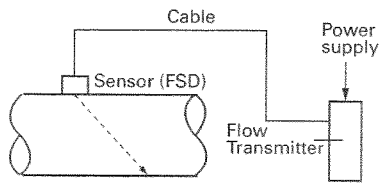
- Ultrasound pulses are transmitted into a liquid, and flow velocity profile is found and the flow rate is measured by using the characteristics that Doppler frequency of the echo from reflectors such as air bubbles and particles in the liquid changes according to flow velocity.



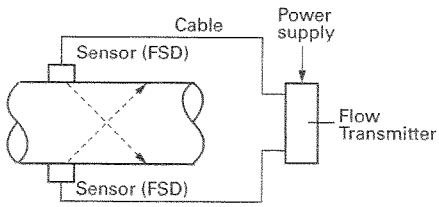
The above shows an example when using two sensors.

Block diagram

(1) Using one sensor



(2) Using two sensors



Maximum measurement range in pulse doppler method

When stainless steel is selected as pipe material, nominal wall thickness is Sch20s, and the fluid is water.

<Maximum measurable flow velocity>

Unit: m/s

Caliber	FSDP2	FSDP1	FSDP0
40A	6.56		
50A	6.04		
65A	4.99		
80A	4.40		
90A	3.92		
100A	3.45	6.95	
125A		5.86	
150A		5.04	
200A		3.90	7.59
250A			6.26
300A			5.32
350A			4.82
400A			4.25
450A			3.80
500A			3.54
550A			3.14
600A			2.89
650A			2.69
700A			2.50
750A			2.34
800A			2.19
850A			2.07
900A			1.95
1000A			1.76

<Maximum measurable flow rate>

Unit: m^3/h

FSDP2	FSDP1	FSDP0
33.68		
48.5		
67.8		
81.8		
97.1		
110.2	222.0	
	279.2	
	343.2	
	462.8	887
		1,146
		1,404
		1,572
		1,831
		2,091
		2,393
		2,587
		2,850
		3,067
		3,325
		3,590
		3,839
		4,112
		4,357
		4,852

Loader software for PCs

Equipped as standard

- Works on PC/AT compatible machines.
- Operation on PC98-series machines (NEC) cannot be guaranteed.
- Operation on self-made PCs or shop-brand PCs cannot be guaranteed.
- Major functions: Performs various parameter setting/change of the main unit.
  Instantaneous velocity, instantaneous flow rate, total value, error information, received waveform, analog input, logger data, etc. can be downloaded in a personal computer.
- O/S: Windows2000/XP
- Memory requirement: 128MB or more
- Disk unit: Windows2000/XP-compatible CD-ROM drive
- Hard disk drive capacity: Free space of 52MB or more

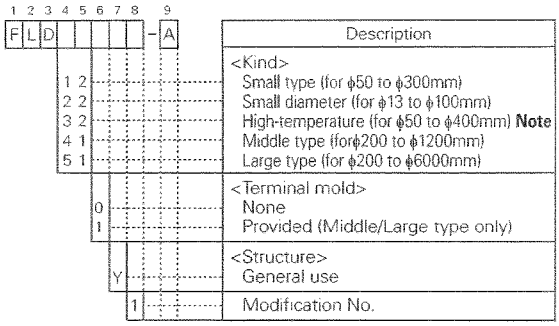
CODE SYMBOL

<Flow transmitter>

1	2	3	4	5	6	7	8	Description
F	S	C					1	
			S					<Specification> Standard
				1				<Converter> Basic system
				2				Basic system + Printer
				3				Basic system + Thickness gauge
				4				Basic system + Printer + Thickness gauge
					0			<Flow velocity profile measurement> None
					1			Provided (detector to measure flow velocity profile is separately required.)
						A		<Power adapter> AC power + power cord (125V AC) for Japanese and North American use
						B		AC power + power cord (250V AC) for European and Korean use
						C		AC power + power cord (250V AC) for Chinese use
							1	Modification No.

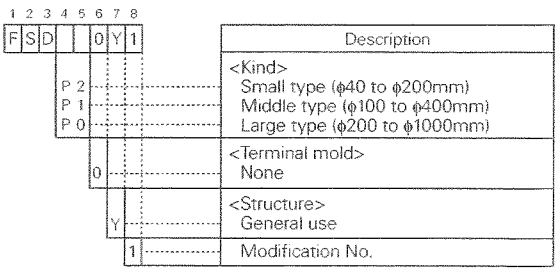
<Detector>

(for transit time)



Note)
Use the optional guide rail, if a pipe that does not allow ultrasonic waves to pass through easily, such as when an old pipe, cast iron pipe or a pipe with mortar lining is used, or the flow or liquid high in turbidity is measured. Employ the Z method for mounting.
Applicable diameter range: V method: ϕ50 to ϕ250
Z method: ϕ150 to ϕ400

(for flow velocity profile measurement)



SCOPE OF DELIVERY

<Flow transmitter>

	Name of unit	Scope of delivery
1	Basic system	1) Conversion unit 2) Power adapter 3) Power connector conversion cord 4) Analog input/output cord (1.5m) 5) USB cable 6) Carrying case 7) Strap 8) SD card (256MB) 9) Special type signal cable (5m × 2) 10) BNC adapter
2	Printer (option)	1) Printer unit 2) Printer rolled paper (1 roll)
3	Thickness gauge (option)	1) Thickness gauge (with cable) 2) Test specimen 3) Ultrasonic couplant

<Detector>

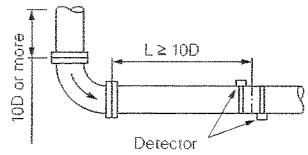
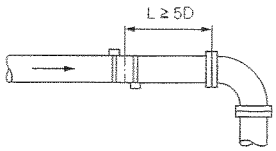
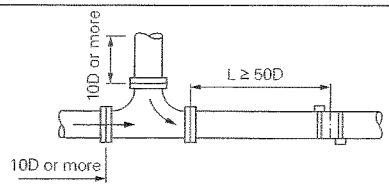
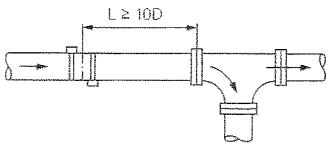
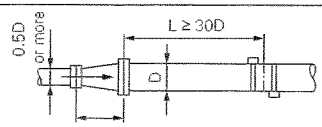
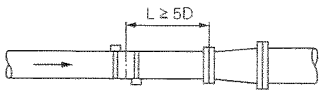
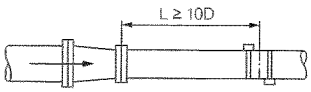
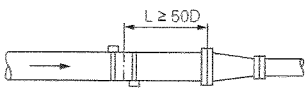
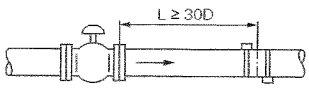
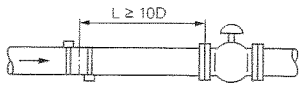
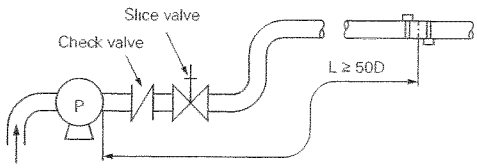
	Name of unit	Scope of delivery
1	Small/Small diameter/High temperature/Middle/Large	1) Sensor unit 2) Signal cable (5m) 3) Mounting belt/wire 4) Silicone grease (100g)

OPTIONAL ITEMS

	Name	Specifications	Arrangement No.
1	Battery	Special type Li-ion battery (7.4V, 2500mAh)×2	TK373312P4
2	Power adapter	Special type power adapter, with power cable, 2m 90 to 264V AC, 50/60Hz · AC power adapter · Power connector conversion mode	 TK7N6380P1 TK4J2637C1
3	Printer unit	To be mounted on top of converter Thermal serial dot system (8 x 384 dot)	TK4J2634C1
4	Printer roll paper	Maker: SEIKO I SUPPLY Co. Ltd. Type: LP-251L Specifications: Thermal roll paper Width: 58mm×ϕ48mm, No core	TK7G7982C1
5	Silicone grease	Maker: Shin-Etsu Chemical Co., Ltd. Type: · For standard use G40M, 100g · For high temperature KS62M, 100g	 TK7G7984C1 TK7G7983C1
6	Signal cable	Special type signal cable, 5m × 2 Connector on both sides Red connector Blue connector · Middle type/Large type sensor: BNC connector on one side	 TK4J2640C1 TK4J2640C2 TK7G7987C1
7	Extension signal cable	Special type coaxial cable with BNC connector · 10m × 2 · 50m × 2	 TK468664C3 TK468664C4
8	Analog input/output cable	4-core cable, 1.5m, with connector	TK4J2639C1
9	Mounting belt /wire	· Small type/small diameter sensor: Plastic cloth belt · Large type sensor: Stainless wire Nominal diameter ϕ200 to ϕ500mm ϕ200 to ϕ1000mm ϕ200 to ϕ2000mm ϕ200 to ϕ3000mm ϕ200 to ϕ6000mm · High-temperature sensor: Stainless steel belt	TK7G7979C1 TK7G7980C1 TK7G7980C2 TK7G7980C3 TK7G7980C4 TK7G7980C5 TK7G7981C1
10	Thickness gauge detector	Cable length: 0.8mm Measuring range: 0.8 to 80mm Accuracy: 20mm or less p0.1mm 20mm or more ±0.5% of read	TK7N6385P1
11	Guide rail for high-temperature sensor	· Case material: SUS304 · Mounting bracket material: Aluminum alloy+SUS304	TK4C6164C1
12	SD memory card	Maker: Apacer Technology, Inc. Type: AP-ESD256TPSR Capacity: 256MB	TK7N6386C1
13	USB cable	Maker: Sunwa Supply Inc. Type: KU-AMB510 Specifications: Mini USB cable (1.0m)	TK7N6622C1

Conditions on straight pipe

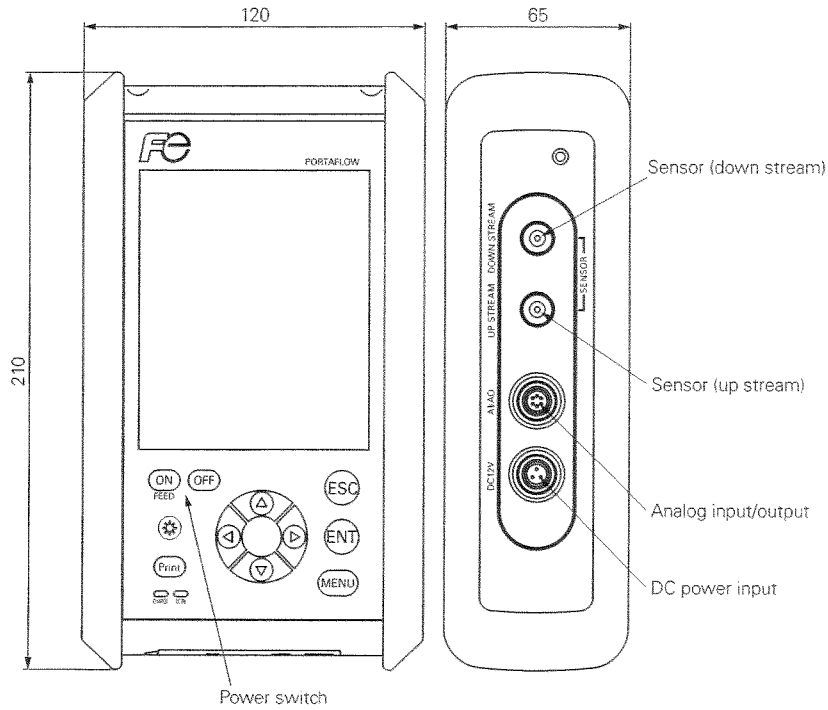
(D: Nominal diameter of pipe)

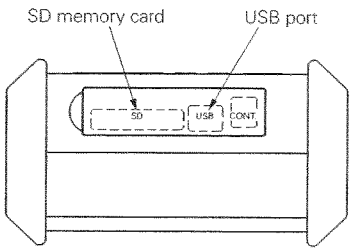
Type	Length of upstream straight pipe	Length of downstream straight pipe
90° bend		
Tee		
Diffuser		
Contraction pipe		
Valve		
Pump		

Note) Source: Japan Electric Measuring Instruments Manufacturers' Association (JEMIS-032)

OUTLINE DIAGRAM (Unit:mm)

Flow transmitter

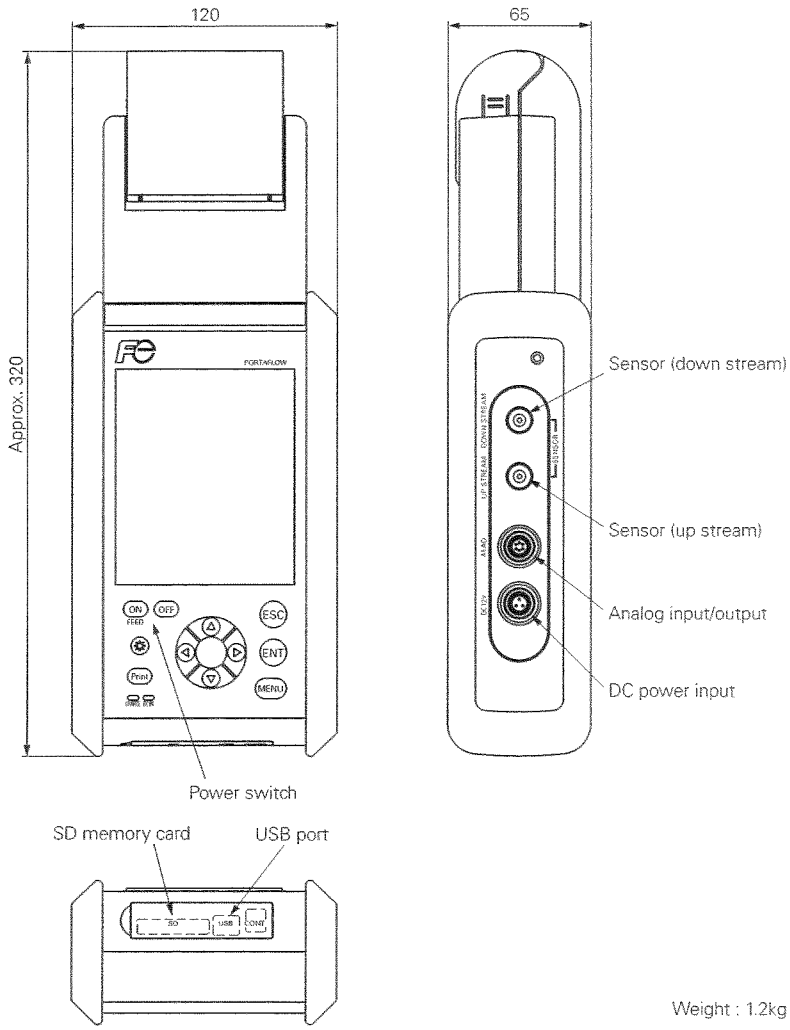




Weight : 1.0kg

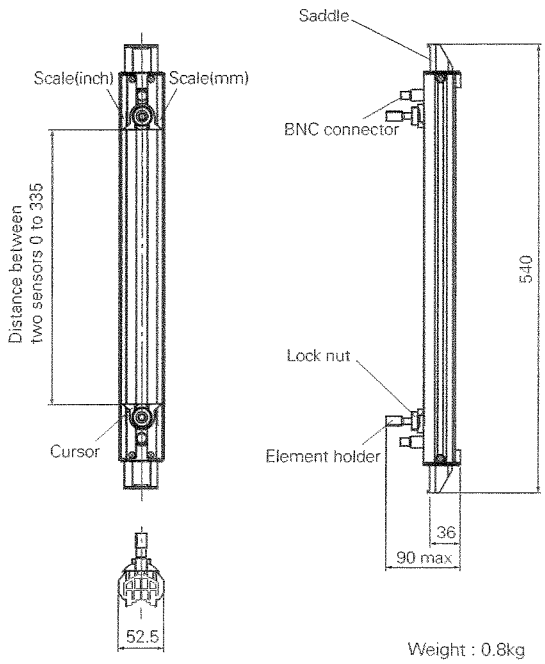
OUTLINE DIAGRAM (Unit:mm)

Flow transmitter (with printer)

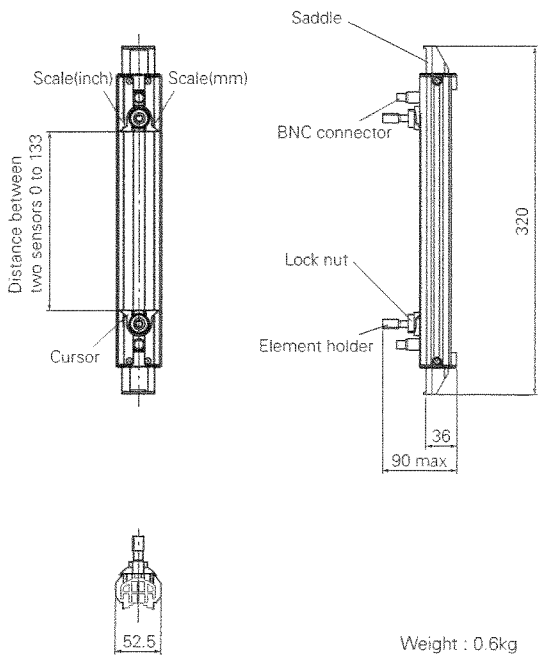


Weight : 1.2kg

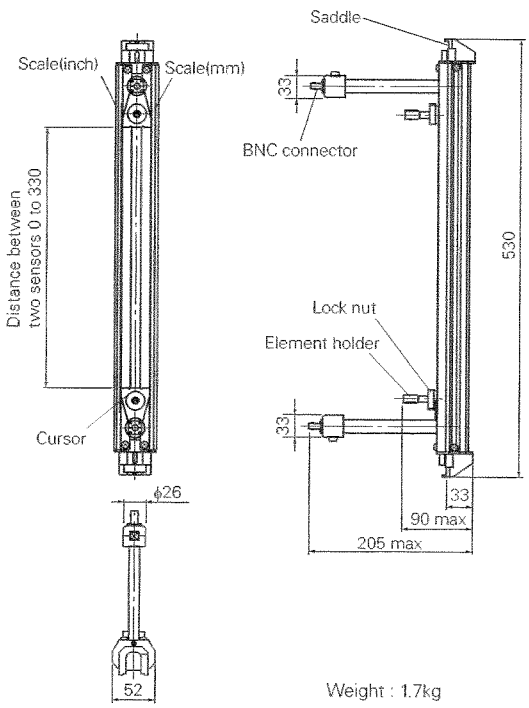
OUTLINE DIAGRAM (Unit:mm)



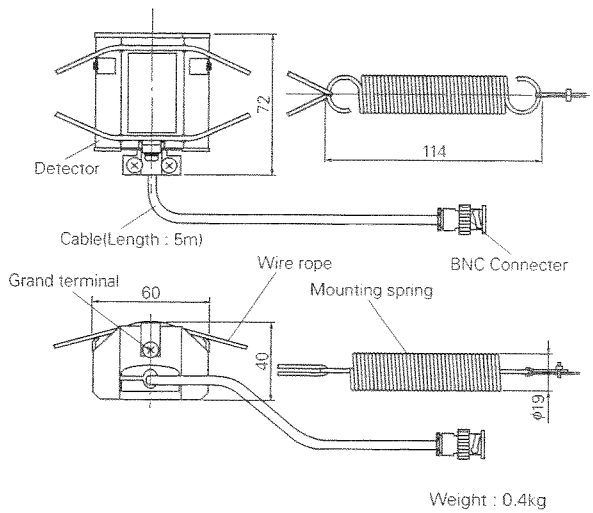
Detector FLD12 (Small sensor)



Detector FLD22 (Small diameter sensor)

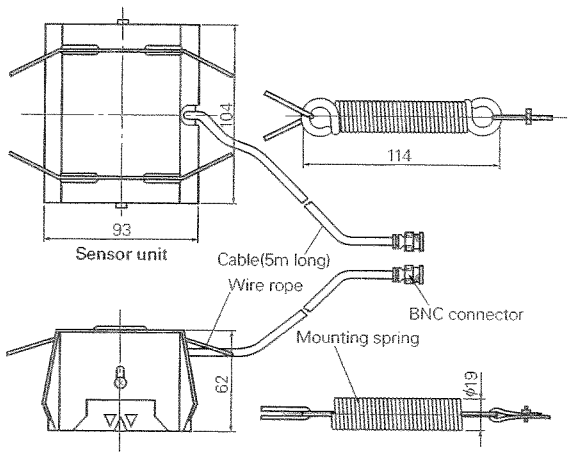


Detector FLD32 (High-temperature sensor)



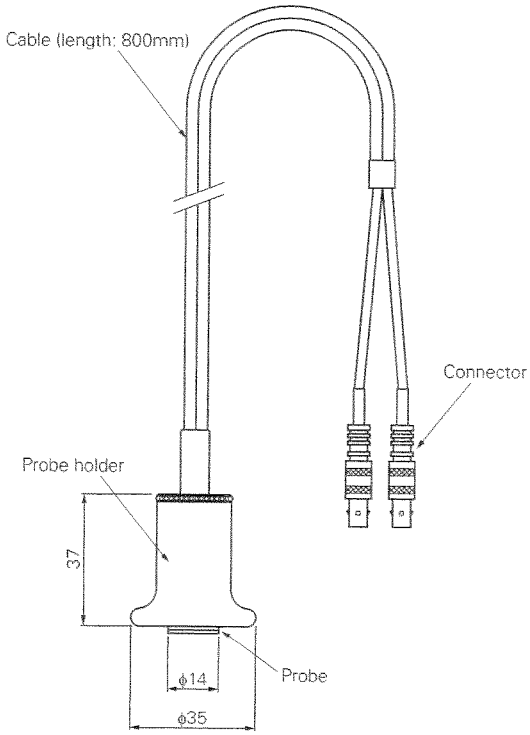
Detector FLD41 (Middle sensor)

OUTLINE DIAGRAM (Unit:mm)

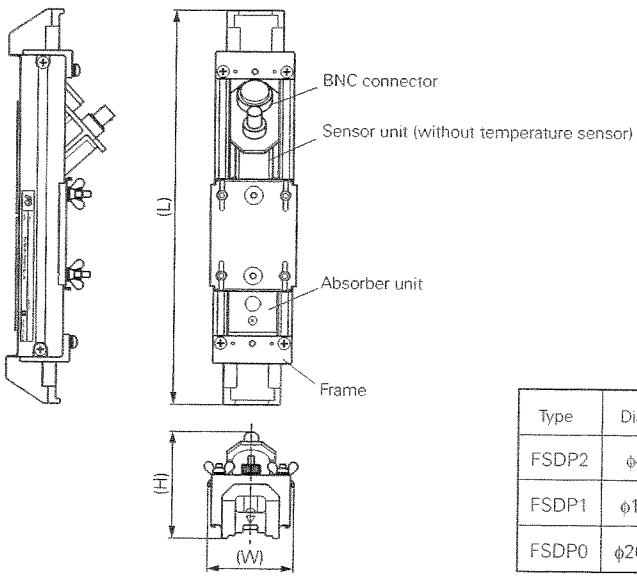


Weight : 1.4kg

Detector FLD51 (Large sensor)



Ultrasonic thickness gauge



Detector FSD

Type	Diameter (mm)	L	H	W	Weight Approx. (kg)
FSDP2	φ40 to φ200	260	70	57	1.7
FSDP1	φ100 to φ400	260	72	57	1.7
FSDP0	φ200 to φ1000	350	90	85	4.5

⚠ Caution on Safety

*Before using this product, be sure to read its instruction manual in advance.

Fuji Electric Systems Co., Ltd.

Sales Div. III, International Sales Group
Global Business Group

Gate City Ohsaki, East Tower, 11-2, Osaki 1-chome,
Shinagawa-ku, Tokyo 141-0032, Japan
http://www.fesys.co.jp/eng
Phone: 81-3-5435-7280, 7281 Fax: 81-3-5435-7425
http://www.fic-net.jp/eng

FS-200 Ultrasonic Micrometer

Intelligent, Hand-Held, Untrasonic Pipe-Thickness Meter

Key Features

- **Multi-function backlit LCD display**
- **Rugged construction**
- **Advanced transducer**
- **Portable and lightweight**

The Fuji Electric FS-200 is a rugged and light-weight ultrasonic micrometer for measuring pipe wall thicknesses. It is the perfect companion for ultrasonic flowmeter station setup, or for piping system maintenance in general. The FS-200 can scan the pipe surface and provide a profile of the inside of the pipe, revealing corrosion and isolating weak spots while systems remain up and operational. A large backlit display is easy to read and the FS-200 will run for about 200 hours on two standard batteries. No special training is required to operate the unit. The unit even indicates the stability of its own readings.

Features

- Multi-function backlit LCD display – 4.5-digit display with large half-inch digits for easy reading. Backlight can operate by illuminating only when measurements are taken, saving battery life
- Rugged construction – extruded aluminum body and nickel-plated aluminum end caps, environmentally sealed, and resistant to impact, petroleum products, and water
- Advanced transducer – dual element (transmit and receive) transducers with quick disconnect LEMO locking connectors
- Portable and lightweight – weighs only ten ounces; fits in a pocket

Specifications

Measuring range 0.025 to19.99 in
Units English or metric (inch/mm)
Resolution 0.001 in (0.01 mm)
Sonic velocity range 0.0492 to 0.3937 in/µs (1250-10,000 m/s)
Zero reference Built-in reference for probe zeroing
Reading rate 4 readings per second standard, 16 readings per second in scan mode
Power (2) 1.5V AA cells; last approximately 200 hours
Transducer 1 to 10 MHz frequency range, custom transducers available.
Operating temperature -20° to 120°F
Dimensions 2.5 x 4.75 x 1.25 in. (WxHxD)
Warranty 5 years

We attempt to provide you with complete information in this catalog. Because of the specific nature of ultrasonic technology, we strongly recommend you contact us regarding application and availability before placing your order.

Ordering Information

Included in standard delivery: Meter, transducer, sonic gel, manual, calibration certificate

FS200	Ultrasonic Micrometer ($ 1,300 if purchased with a flow meter.)	$ 1,425

Information subject to change without notice. Prices in USD.

050306

Well monitoring equipment price list

Gas powered air compressor ----------$1,000.00

100' air hose (need two)----------$25.00

2" air gauge----------$15.00

Miscellaneous fittings and parts----------$100.00

300' graduated steel tape----------$315.00

Reel for 300' tape----------$130.00

500' graduated steel tape----------$1200.00

Reel for 500' tape----------$180.00

Total----------$2965.00

ATTACHMENT 5 C-1

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: April 8, 2014

SUBJECT: AGENDA ITEM NO. 5C-1

CONSIDER AND DISCUSS AMENDING TEMPORARY RULES

ISSUE
Consider and discuss amendments to the Temporary Rules and establish date for public hearing

BACKGROUND
The Board previously adopted Temporary Rules and amended them on November 12, 2013.

OPTIONS/ALTERNATIVES
The Board can continue operating with the existing Temporary Rules, realizing that there may be areas that need refinement and additional clarification. Or, the Board may determine that it is in the best interest of the District to establish a public hearing and discuss the areas where additional clarification may be needed and subsequently adopt revisions to the Temporary Rules. Several items may require adjustment, modification or clarification. The staff is currently working with legal counsel to finalize the draft redline of the Temporary Rules.

CONSIDERATIONS
The District staff participated in a conference call with the Rules Committee on March 28th, 2014. The District's attorney subsequently reviewed the proposed rule changes.

STAFF RECOMMENDATIONS
The staff requests direction from the Board on any amendments to the Board's Temporary Rules. The staff also recommends a public hearing be scheduled at a future board meeting.

ATTACHMENTS
Redlined Temporary Rules will be provided as soon as they are complete.

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E., General Manager

ATTACHMENT 5 G-1

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

COLLIN COUNTY - COOKE COUNTY - DENTON COUNTY

General Manager's Quarterly Report
March 2014
North Texas GCD Management Plan

This quarterly briefing is being provided pursuant to the adopted Management Plan for the quarter ending March 31, 2014.

Well Registration Program:

Current number of wells registered in the District: 1,096 as of March 31, 2014

Aquifers in which the wells have been completed: Trinity and Woodbine

Well Inspection/Audit Program:

2014
Well Inspections

Month	Collin	Denton	Cooke	Total
January	9	10	8	27
February	0	10	2	12
March	3	0	0	3
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	0	0	0	0
August	0	0	0	0
September	0	0	0	0
October	0	0	0	0
November	0	0	0	0
December	0	0	0	0
Total	12	20	10	42

ATTACHMENT 8

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: April 1, 2014

SUBJECT: AGENDA ITEM NO. 8

CONSIDER AND ACT UPON POLICY CONCERNING HAND DUG WELL

ISSUE

The district's rules do not currently address the closure hand dug wells that were generally constructed decades ago. This has caused the need for the District to develop a policy and procedure for dealing with the closure of hand dug wells.

CONSIDERATIONS

Hand dug wells were popular several decades ago and almost every well developed today is a drilled well. The district staff would like a reasonable procedure to follow to get the hand dug wells, no longer in use, closed out. These wells can be hazardous to both humans and animals, and can also serve as a potential avenue for pollution to the water table.

RECOMMENDATIONS

Staff proposes that the attached proposed policy, prepared by district staff, be considered by the Board of Directors.

ATTACHMENTS

Proposed Hand Dug Well Policy and Procedure

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E. General Manager

RESOLUTION NO. 2014-04-08-2

A RESOLUTION BY THE BOARD OF DIRECTORS OF THE NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT ESTABLISHING A PROCEDURE FOR CLOSURE OF HAND DUG WELLS

WHEREAS, a hand dug well is defined as a well not more than 50 feet deep that was excavated by hand with a diameter of at least 3 feet; and

WHEREAS, hand dug wells do not enter into either the Trinity or Woodbine Aquifers, and

WHEREAS, open hand dug wells can provide a source of contamination to the water table and provide a risk of injury to persons or animals; and

WHEREAS, the North Texas Groundwater Conservation District ("District") has determined a need to formally adopt a procedure for property owners to close hand dug wells that are no longer in use; and

NOW, THEREFORE BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT that the procedure for closure of hand dug wells shall be as follows:

1. Hand dug wells must be closed by being refilled with rocks and soil to the surface level.
2. Well owners who close hand dug wells must provide a report to the District providing information about the method of closure, location of well and date of closure.
3. Well owners do not need to pay registration fees or driller report deposit fees and do not need to receive authorization to complete the closure of the well before work commences.

Upon motion by _____, seconded by _____, the foregoing Resolution was passed and approved on this 8th day of April, 2014 by the following vote:

AYE: NAY: ABSTAIN:

At a meeting of the Board of Directors of the North Texas Groundwater Conservation District.

_____
President

ATTEST:

_____
Secretary-Treasurer

ATTACHMENT 9

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

AGENDA COMMUNICATION

DATE: April 8, 2014

SUBJECT: AGENDA ITEM NO. 9

GENERAL MANAGER'S REPORT

SUMMARY

A detailed summary of well activities for March is attached. All wells registered in North Texas GCD are in the Trinity and Woodbine Aquifers.

ATTACHMENTS

PREPARED AND SUBMITTED BY:

Drew Satterwhite, P.E., General Manager

North Texas Groundwater Conservation District

Well Registration Summary
As of March 31, 2014

County	Exempt Wells	Non-Exempt Wells	Total Registered Wells
Collin County	69	82	**151**
Cooke County	297	361	**658**
Denton County	173	114	**287**
Total	**539**	**557**	**1096**

Monthly Summary
March 2014

County	New Exempt Well Registrations	New Non-Exempt Well Registrations	Existing Exempt Well Registrations	Existing Non-Exempt Well Registrations	Exempt Wells Completed	Non-Exempt Wells Completed	Wells Plugged
Collin County	2	0	1	0	3	3	0
Cooke County	5	0	1	0	5	0	1 (capped)
Denton County	11	1	0	0	6	1	0
Total	**18**	**1**	**2**	**0**	**14**	**4**	**0**

ADJOURN