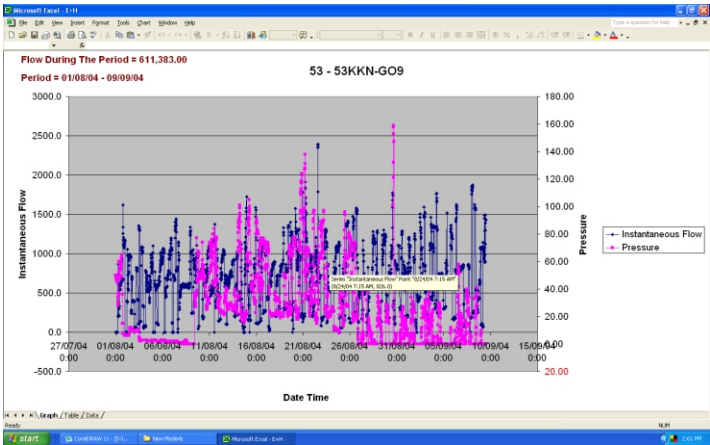


# DATA LOGGER

DATA LOGGER is a device used to store flow related data of bulk water supply schemes in many water pumping and distribution areas. The DATA LOGGER accepts two 4-20mA inputs for pressure in the pipe line & rate of flow and a pulse input for cumulation. It is designed to be a stand alone equipment capable of storing the data in non-volatile memory at preset intervals of time. With a built in Real Time Clock each stored record is stamped with Date & Time. The storage memory provided is 512KB which can store about one and a half years data. In a water supply scheme, many such DATA LOGGERS can be located at different locations and each of them can be assigned a unique ID. These data can be downloaded onto a Laptop or a unique DATA LOADER through a RS232C port and then uploaded on to a master PC. Based on the Unique ID, the data are appended to respective databases in the master PC. With the help of custom made software in PC, these data are presented in tabular & Graphical forms in Excel worksheet. A 16x2 alphanumeric LCD with backlit on the front panel displays all the measured parameter along with date & time.



## Features



Sr. No.	Date	Time	Pressure	Instantaneous Flow Reading	Cumulative Flow Reading	Rate of Flow Calculated	Remarks
1	01-Aug04	12:00 AM	35.00	211.0	50980.00	76330.00	
2	01-Aug04	12:15 AM	36.00	238.0	50933.00	76330.00	
3	01-Aug04	12:30 AM	36.00	217.0	50866.00	76330.00	
4	01-Aug04	12:45 AM	52.00	207.0	50945.00	86400.00	
5	01-Aug04	1:00 AM	69.00	237.0	51126.00	116640.00	
6	01-Aug04	1:15 AM	69.00	336.0	52101.00	120960.00	
7	01-Aug04	1:30 AM	59.00	334.0	52395.00	122400.00	
8	01-Aug04	1:45 AM	53.00	354.0	52993.00	126000.00	
9	01-Aug04	2:00 AM	50.00	346.0	53529.00	130560.00	
10	01-Aug04	2:15 AM	49.00	537.0	53865.00	135040.00	
11	01-Aug04	2:30 AM	49.00	553.0	53959.00	139560.00	
12	01-Aug04	2:45 AM	50.00	553.0	53932.00	141520.00	
13	01-Aug04	3:00 AM	64.00	685.0	54675.00	209920.00	
14	01-Aug04	3:15 AM	66.00	696.0	54623.00	213120.00	
15	01-Aug04	3:30 AM	55.00	592.0	54371.00	213120.00	

- Based on the latest single chip microcontroller.
- Two 4-20mA & one pulse inputs for measuring Pressure, Flow Rate and totalized value.
- 512K bytes of NV memory for storing the measured parameter values.
- Memory can be erased after uploading the memory on to a PC. Minimum 10<sup>6</sup> erase cycles.
- Built in Real Time clock.
- Date & Time stamp with every stored record.
- Storage interval programmable from 1 to 240 minutes. Available memory stores 43000 records, equivalent to 5 months data @ 5 minutes or 15 months @ 15 minutes or 60 months data @ 1 hour storage intervals.
- Totalisation base selectable from Pulse input or Flow Rate.
- Scaling for totalisation (1/100/1000) programmable. This will be the multiplying factor for Pulse input and divisor factor for Flow Rate input.
- Password protection for totalized value reset and changing the settings.
- RS232C port for downloading the stored data onto a PC/Laptop/Hand held DATA LOADER.
- Optional Centronics Printer port for getting periodic printouts of the parameter values along with date & time at programmed print intervals.
- Sleek wall mountable, powder coated MS enclosure.
- Password protection for changing the settings.
- Settings stored in EEPROM.
- Universal SMPS (90 to 270 V AC/DC) or optional 24V DC.

DATA LOADER is a hand held device that helps in downloading the data from the field mounted DATA LOGGER and uploading the same onto a PC. The DATA LOADER is provided with 4MB memory, which can be allocated to various banks and the data from upto a maximum of 16 DATA LOGGERS can be downloaded in them and then uploaded to PC.

It is possible to view the data pertaining to any particular record of any data logger, by selecting the bank in which the respective data is downloaded. The unit is provided with a 16 x 2 alphanumeric LCD display with backlit and 4 keys for operation.

The 4 MB memory can be optimized to download from Dataloggers by dividing them into a maximum of 16 banks and assigning memory capacity of 256 KB to 512 KB for each bank. Once the data is downloaded from the logger and uploaded onto the PC, the banks can be erased individually.



<b>Technical Specifications</b>	
Type	Microcontroller based
Inputs	1) 4 - 20 mA for measuring pressure 2) 4 - 20 mA for measuring Flow Rate 3) Pulse input for measuring totalized value
Engineering Value	The pressure and Rate of Flow ranges programmable.
Totaliser Base	From Rate of Flow input or Pulse input. In case of pulse input, for every pulse the totalized value is incremented by the factor set against Cumulation factor.
Displays and Keypad	One 16x2 LCD with backlit for displaying the measured parameters Pressure, Rate of Flow and Cumulation along with Date & Time. Four numbers keys for setting the parameter values.
Data Storage	Pressure, Rate of Flow and totalized value are stored in a 512K Flash Memory. Each record is stored with Date & Time stamp. Retention time of Data is better than 10 years. Once the data in the Logger is downloaded onto a PC the memory can be erased for fresh recording.
Storage Interval	Programmable from 1 minute to 4 hours.
Real Time Clock	Battery backed built-in Real Time clock for stamping date & time with each of the stored record.
Parameter storage	All settings are stored in EEPROM and password protected.
Serial Port	One RS232C port for downloading data onto a Laptop/Data Loader
Centronics Parallel Printer Port(optional)	Any standard 80 col. Dot matrix printer can be connected and print outs of parameter values can be obtained at programmed intervals .
Power Supply	90 to 270V AC/DC; Optional 24V DC
Enclosure	Sleek powder coated wall mountable MS enclosure.
Dimension	205mm (W) x 225mm (H) x 130mm (D)
Field Termination	Through TBs provided on the unit.
Environment condition	0 - 55 °C; 95% Rh.
Software Particulars	Windows based custom developed package for uploading data from the Data Loader to PC.  Necessary site particulars for each location such as site name, logging interval, client's name and relevant particulars can be configured. A separate Database is created for each location. Based on the unique ID of the Datalogger, the data is appended to the respective database during each upload. Only fresh records are appended and already available records are ignored.  From this data base the data can be exported to an Excel worksheet by giving the required start and end date & time for generating the records. A worksheet with 3 spreadsheets is generated for following details  1. Date, Time, Pressure, Rate of Flow and Totalized value from each stored record. 2. One X-Y graph to represent the Pressure & Rate of Flow. 3. One data spreadsheet with daily totalized value at every day 00:00 hours.

11-06



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Information in this Catalogue is subject to change without notice

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