



# TECHNICAL GUIDANCE

Operated by Windows machines  
High functions and High Speed

## CATAMS® Windows Tank Data Monitoring Software

### GENERAL

CATAMS Windows is a Software for Tank Data Monitoring which has been developed based on Tokyo Keiso's long time experience and know-how on Tank Monitoring.

It can be operated by personal computers which are easily available.



### STANDARD SPECIFICATION

● Delivery : By CD-ROM

● Operational condition

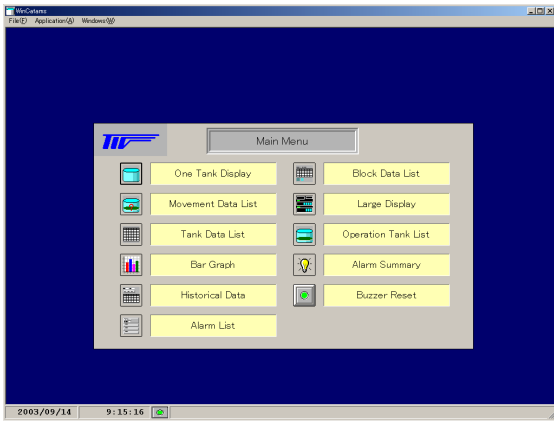
- Personal computer : PC with Windows XP SP3 or Windows 7
- CD-ROM drive to be provided
- Indication screen size : 1024 x 768 Pixel or more
- MOUSE and key board to be provided
- Communication Port : Serial Minimum 1 port  
Parallel 1 port

● BASIC Functions

- 12 different screens are provided.
- Operation through MOUSE
- Real time data of selected tanks and its setting parameter
- Transfer data after loading/unloading
- Data indication of all tanks
- Liquid level indication by Bar Graph
- Data historical
- Data printing (Edition by Microsoft Excel etc.)
- Error code and details
- Monitoring of tanks in operation
- Alarm Historical Data

SAMPLE OF DISPLAY

Main Menu Mode



Tank Data List Mode

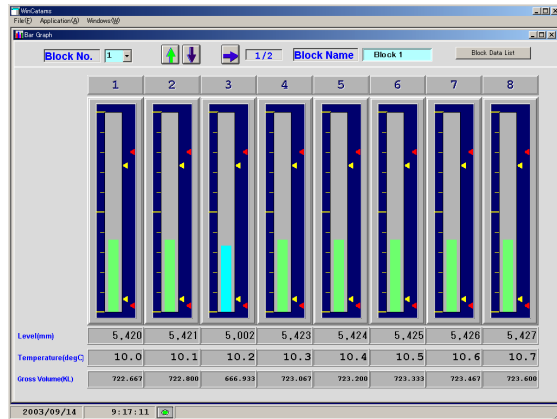
Tank No.	Liquid Name	Level (mm)	Temperature (degC)	Gross Volume (KL)	V.C.F.	Net Volume (KL)	Density (g/cm3)	Total Weight (MTon)	Error
1	LQD-01	5,443	10.0	725.733	1.0038	728.491	0.9000	655.642	Normal
2	LQD-02	5,444	10.1	725.867	1.0029	727.972	1.0000	727.972	Normal
3	LQD-03	5,002	10.2	666.933	1.0028	668.800	1.0000	668.800	Normal
4	LQD-04	5,446	10.3	726.133	1.0028	728.166	1.0000	728.166	Normal
5	LQD-05	5,417	10.4	726.267	1.0028	728.301	1.0000	728.301	Normal
6	LQD-06	5,408	10.5	726.400	1.0028	728.434	1.0000	728.434	Normal
7	LQD-07	5,440	10.6	726.533	1.0027	728.495	1.0000	728.495	Normal
8	LQD-08	5,450	10.7	726.667	1.0026	728.556	1.0000	728.556	Normal
9	LQD-09	5,451	10.8	726.800	1.0026	728.690	1.0000	728.690	Normal
10	LQD-10	5,452	10.9	726.933	1.0025	728.750	1.0000	728.750	Normal
11	LQD-11	5,453	11.0	727.067	1.0025	728.885	1.0000	728.885	Normal
12	LQD-12	5,454	11.1	727.200	1.0024	728.945	1.0000	728.945	Normal
13	LQD-13	5,455	11.2	727.333	1.0023	729.006	1.0000	729.006	Normal
14	LQD-14	5,456	11.3	727.467	1.0023	729.140	1.0000	729.140	Normal
15	LQD-15	5,457	11.4	727.600	1.0022	729.201	1.0000	729.201	Normal
16	LQD-16	0 LL	0.0 L	694.267	0.9960	691.490	1.0000	691.490	Normal
17	LQD-17	5,465	11.6	728.667	1.0021	730.197	1.0000	730.197	Normal
18	LQD-18	5,466	11.7	728.800	1.0020	730.258	1.0000	730.258	Normal
19	LQD-19	5,467	11.8	728.933	1.0020	730.391	1.0000	730.391	Normal
20	LQD-20	5,468	11.9	729.067	1.0019	730.452	1.0000	730.452	Normal
21	LQD-21	5,469	12.0	729.200	1.0018	730.513	1.0000	730.513	Normal
22	LQD-22	5,470	12.1	729.333	1.0018	730.646	1.0000	730.646	Normal
23	LQD-23	5,471	12.2	729.467	1.0017	730.707	1.0000	730.707	Normal

● Each mode can be selected by MOUSE Operation.

● Status of All Registered tanks can be monitored.

One Tank Detailed Indication Mode

Bar Graph Mode



- Real time data and setting parameters of selected tank are indicated.
- Operating parameters of selected tank can be changed through this mode
- Remote control of FW-9000 Super intelligent Servo Gauge can be conducted.

- Liquid level is indicted by Bar Graph
- Operating condition status such as stable and loading/unloading are identified by colour of the bar.
- Grouping of tanks can be adjustable through System Data Change Mode.

Loading/Unloading Mode

Item No.	1	Tank No.	1	Product Name	LQD-01	Open	Erase
Time							
Now	8:16:29		5,463	10.0	728.400	1.0038	731.168

Historical Data Mode

Tank No.	1	Liquid Name	LQD-01	Month	09	Day	14	Year	2003
Level (mm)									
9	6,451	10.0	860.133	1.0038	863.402	0.9000	777.062		
8	6,052	10.0	806.933	1.0038	809.999	0.9000	728.999		
7	5,650	10.0	753.533	1.0038	756.196	0.9000	680.576		
6	5,250	10.0	700.000	1.0038	702.660	0.9000	632.394		
5	5,149	10.0	688.533	1.0038	688.142	0.9000	620.229		
4	5,549	10.0	739.867	1.0038	742.678	0.9000	668.410		
3	5,948	10.0	793.067	1.0038	796.081	0.9000	716.473		
2	6,348	10.0	846.400	1.0038	849.616	0.9000	764.654		
1	6,748	10.0	899.733	1.0038	903.152	0.9000	812.837		
0	6,852	10.0	913.600	1.0038	917.072	0.9000	825.365		
23	6,453	10.0	860.400	1.0038	863.670	0.9000	777.303		
22	6,054	10.0	807.200	1.0038	810.207	0.9000	729.240		
21	5,653	10.0	753.533	1.0038	756.597	0.9000	680.937		
20	5,253	10.0	700.400	1.0038	703.062	0.9000	632.756		
19	5,147	10.0	686.267	1.0038	688.875	0.9000	619.987		
18	5,547	10.0	739.600	1.0038	742.410	0.9000	668.169		
17	23	91.7	0.000	0.0000	0.000	0.0001	0.000		
16	23	91.6	0.000	0.0000	0.000	0.0001	0.000		
15	23	91.5	0.000	0.0000	0.000	0.0001	0.000		
14	23	91.4	0.000	0.0000	0.000	0.0001	0.000		
13	23	91.3	0.000	0.0000	0.000	0.0001	0.000		
12	23	91.2	0.000	0.0000	0.000	0.0001	0.000		
11	23	91.1	0.000	0.0000	0.000	0.0001	0.000		
10	23	91.0	0.000	0.0000	0.000	0.0001	0.000		

- Start and end time for specific tank can be registered. Trend of volume change can be monitored.
- These trend of volume change is stored and can be recalled.

- Trend of All Registered tanks with 1 hour interval is recorded and indicated.

### Block Data List Mode

Tank No.	Liquid Name	Level (mm)	Temperature (degC)	Gross Volume (KL)	V.C.F.	Net Volume (KL)
1	LQD-01	5,314	10.0	708,533	1.0038	711,225
2	LQD-02	5,315	10.1	708,667	1.0029	710,722
3	LQD-03	5,002	10.2	666,933	1.0028	668,800
4	LQD-04	5,317	10.3	708,933	1.0028	710,918
5	LQD-05	5,318	10.4	709,067	1.0028	711,052
6	LQD-06	5,319	10.5	709,200	1.0028	711,186
7	LQD-07	5,320	10.6	709,333	1.0027	711,248
8	LQD-08	5,321	10.7	709,467	1.0026	711,312
9	LQD-09	5,322	10.8	709,600	1.0026	711,445
10	LQD-10	5,323	10.9	709,733	1.0025	711,507
11	LQD-11	5,324	11.0	709,867	1.0025	711,642
12	LQD-12	5,325	11.1	710,000	1.0024	711,704
13	LQD-13	5,326	11.2	710,133	1.0023	711,766
14	LQD-14	5,327	11.3	710,267	1.0023	711,901
15	LQD-15	5,328	11.4	710,400	1.0022	711,963
16	LQD-16	0 LL	0.0 L	694,267	0.9960	691,490

**Total Liquid Volume** 11,294.400 (KL)  
**Total Net Volume** 11,319.881 (KL)  
**Total Liquid Weight** 11,248.758 (M.Ton)

- Acceptable changing volume can be programmed in System Data Change Mode.

### Alarm Historical Mode

TANK No	Status	Contents	Acutual	Setting	Date
1	3	LL	LEVEL	500(mm)	2003/09/14
2	3	LL	LEVEL	0(mm)	2003/09/14
3	64	L	TEMP ALARM	16.3(degC)	2003/09/14
4	64	LL	LEVEL	5063(mm)	2003/09/14
5	64	L	TEMP ALARM	0(degC)	2003/09/14
6	64	LL	LEVEL	0(mm)	2003/09/14
7	48	L	TEMP ALARM	0(degC)	2003/09/14
8	48	LL	LEVEL	0(mm)	2003/09/14
9	32	L	TEMP ALARM	0(degC)	2003/09/14
10	32	LL	LEVEL	0(mm)	2003/09/14
11	27	H	TEMP ALARM	12.6(degC)	2003/09/14
12	22	L	LEVEL	5021(mm)	2003/09/14
13	16	L	TEMP ALARM	0(degC)	2003/09/14
14	16	LL	LEVEL	0(mm)	2003/09/14
15	15	HH	LEVEL	5014(mm)	2003/09/14
16	3	HH	LEVEL	3000(mm)	2003/09/14

- Actuation and recover of alarm status is recorded and can be recalled.

### Large Size Indication Mode

**Level(mm)**  
5,264

**Temperature(degC)**  
10.0

Error Status: ER1, ER2, ER3  
 IF ERROR

- Level and temp. data of specified tank is indicated in large size for easy reading from distance.

### Alarm Status Confirmation Mode

Grid of 50 tanks (1-50) with status indicators (Level, Temp, Volume) and color-coded backgrounds (Green, Yellow, Red, Blue).

- The present status of all tanks (alarm, error, operation status) are shown and identified by changing colours.

### Operating Tank List Mode

Tank No.	Liquid Name	Level (mm)	Temperature (degC)	Filling (t/h)	Gross Volume (KL)	V.C.F.	Net Volume (KL)	Density (g/cm3)	Total Weight (t)
1	LQD-01	5,239	10.0	479,997	698,533	1.0038	701,197	0.9000	631,068
2	LQD-02	5,240	10.1	480,007	698,667	1.0029	700,693	1.0000	700,693
4	LQD-04	5,242	10.3	478,681	698,933	1.0028	700,890	1.0000	700,890
5	LQD-05	5,243	10.4	478,681	699,067	1.0028	701,024	1.0000	701,024
6	LQD-06	5,244	10.5	478,681	699,200	1.0028	701,158	1.0000	701,158
7	LQD-07	5,245	10.6	478,681	699,333	1.0027	701,221	1.0000	701,221
8	LQD-08	5,246	10.7	478,681	699,467	1.0026	701,286	1.0000	701,286
9	LQD-09	5,247	10.8	478,681	699,600	1.0025	701,419	1.0000	701,419
10	LQD-10	5,248	10.9	480,003	699,733	1.0025	701,462	1.0000	701,462
11	LQD-11	5,249	11.0	479,997	699,867	1.0025	701,617	1.0000	701,617
12	LQD-12	5,250	11.1	479,993	700,000	1.0024	701,660	1.0000	701,660
13	LQD-13	5,251	11.2	480,003	700,133	1.0023	701,743	1.0000	701,743
14	LQD-14	5,252	11.3	480,003	700,267	1.0023	701,878	1.0000	701,878
15	LQD-15	5,253	11.4	479,993	700,400	1.0022	701,941	1.0000	701,941
17	LQD-17	5,262	11.6	479,997	701,600	1.0021	703,073	1.0000	703,073
18	LQD-18	5,263	11.7	479,997	701,733	1.0000	703,136	1.0000	703,136
19	LQD-19	5,264	11.8	479,997	701,867	1.0000	703,271	1.0000	703,271
20	LQD-20	5,265	11.9	479,993	702,000	1.0019	703,334	1.0000	703,334
21	LQD-21	5,266	12.0	480,000	702,133	1.0018	703,397	1.0000	703,397
22	LQD-22	5,267	12.1	480,002	702,267	1.0018	703,531	1.0000	703,531
23	LQD-23	5,268	12.2	479,992	702,400	1.0017	703,594	1.0000	703,594
24	LQD-24	5,269	12.3	479,992	702,533	1.0017	703,727	1.0000	703,727
25	LQD-25	5,270	12.4	480,000	702,667	1.0016	703,791	1.0000	703,791

- Volume movement is monitored to check the operation status. Movement value is programmable.
- Programming can be conducted through System Data Change Mode.

### System Data Change Mode

Scanning Tank No. [1] Block Tank No. [1] Spare [ ]  
 Alarm and Hysteresis [ ] Pass/Word / Code [ ] Data Printout Timer [ ]  
 Tank Calibration Table [ ] Changeable Items [ ]

Tank No. [1] Tank Delete [X] Product [LQD-01]  
 Tag No. [1]

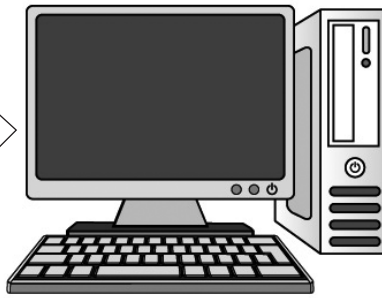
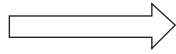
**Alarm** Level(mm) [15,000] Height [ ]  
 Transmitter Temp.(degC) [40.0] H [ ]  
 Volume Leak/Volume [ ] L [ ]  
 Leak(mm) [ ] L [ ]  
 Volume(KL) [ ] LL [ ]  
 Tank [ ]

Liquid Name : Within 12 Characters

- Pass word system is arranged to avoid unauthorized access.
- Grouping, Printing contents, Alarm handling etc. can be programmed.

INSTRUMENTS FOR SYSTEM

Software (Tokyo Keiso's scope)



Computer (Tokyo Keiso's scope)



Any PC acceptable when the operating condition is satisfied.

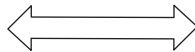
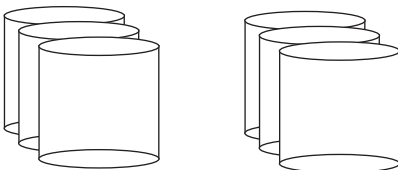
To be installed by Tokyo Keiso



Interface (Tokyo Keiso's scope)

Field Gauges

FW-9000N Super Intelligent Servo Gauge  
DM4N Digital transmitter  
Others



IFX-20000



NMR-4000



Others Interface

OPTIONS

In addition to standard CATAMS Windows, the following optional functions are available on request;

- 1) Tank table registration
- 2) Custom made software
- 3) Data communication with DCS, PC, etc

\* Specification is subject to change without notice.

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