

DISTRIBUTED DATA ACQUISITION SYSTEM

From:

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INTRODUCTION:

Distributed Data Acquisition System (DDAS)

Salient Features:

- 1. Measures, Logs & Reports the Process parameters like Temperature, Pressure, Vacuum, pH etc.**
- 2. Distributed DAS reduces the Cable Cost substantially.**
- 3. Digital Data transmission eliminates 4 – 20 mA loop errors.**
- 4. Tag based process parameter deviation Annunciation.**
- 5. Synchronization of DDAS with clock networks.**
- 6. Integrated approach to Productivity, Safety & Regulatory requirements.**
- 7. 21 CFR Part11 Compliance.**

Distributed Data Acquisition System (DDAS)

Instrumentation :

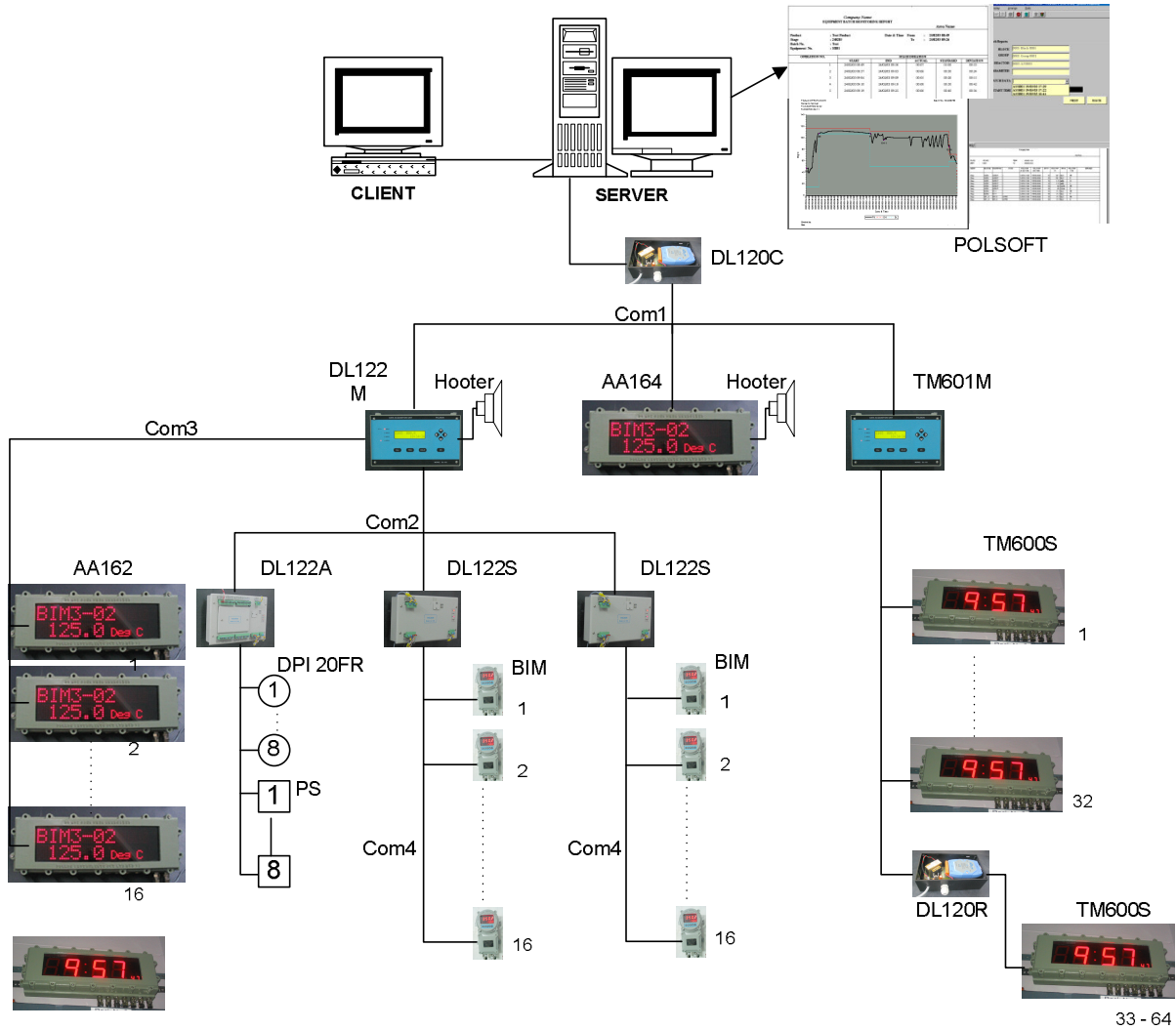
Hardware:

- **Batch Intelligent Module (DPI10F)**
- **Data Acquisition Unit (DL122M)**
- **Analog Module (DL122A)**
- **Serial Module (DL122S)**
- **Annunciation Module (AA162)**
- **Annunciation Module Utilities (AA164)**
- **RS232-RS485 Converter (DI120C)**
- **RS-485 Repeater (DL120R)**

Software:

- **Distributed Data Acquisition Software (POLSOFT)**
Features:
 - User friendly software**
 - Data base connectivity to third party SCADA Software's.**
 - Modularized for Clean Rooms & Production.**

DDAS Network Layout



- DL122M - Data Aquisition Unit
- DL122A - Analog Module
- DL122S - Serial Module
- BIM - Batch Intelligent Module
- AA162 - Annunciation Module
- AA164 - Annunciation Module Utilities
- DPI 20FR - RTD Temp. Sensor
- PS - Utility Pressure Switch

- Com1 - PC communication Bus
- Com2 - Module Communication Bus
- Com3 - Annciation Communcation Bus
- Com4 - Device Communication Bus
- TM601M - Sync Master Clock
- TM600S - Sync Slave Clock
- DL120C - RS232 - RS485 Converter
- DL120R - RS485 Repeater

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DATA ACQUISITION UNIT

MODEL No: DL-122M

***** Experience the unrivaled capacity of the distributed D.A.S**



CLASSIC FEATURES:

- Accepts data from “Analog Module” & “Serial Module” in local RS 485 loop.
- Stamps each data packet with Real time & date.
- Stores data in built in 384 KB of Flash memory and transmit it to PC.
- Displays PVs (Process Values) & provides remote interface to user for configuring interface modules.
- Supports a maximum of 144 process channels.
- Supports High communication baud rate viz. 38.4Kbps.
- Provides uninterrupted PV (Process Value) data to “Annunciation card” for violation generation even in absence of PC.
- Supports 12 user defined units & 4 different resolutions for PV data.

DL122M is designed as the most convenient and effective way of acquiring data from Field. Its application software supports network modules (upgradeable to max. 16 modules) performing various tasks required in process plants.

It supports 512Kb of reliable FLASH memory, which can store a maximum of 22.2 hrs. of field data. DL122M in conjunction with POLSOFT is capable of programming all network modules.

These features supported by DL122M help in reducing cable cost and negates installation and maintenance problems.

Specifications:

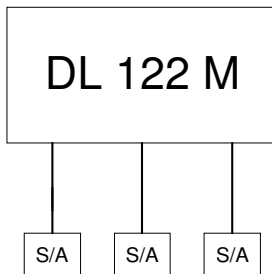
Model NO.	DL-122M	
No. of channels	Min 16, Max. 144	
Display Scan rate	1 sec to 99 sec [programmable].	
Channel i/p scan rate	20 milli sec/channel	
Log rate	1 min to 999 min.	
Lag time between field devices & Logger	3 Sec. (Maximum)	
No. of I/O modules	3	
Display	LCD display (16 X 2 Alphanumeric) with backlit 5 status LED's for indications of communication with field devices & PC	
Time & Calendar	Programmable quartz clock with in built Lithium battery having a lifetime of 10 years.	
Alarm Setting	Hi and Lo limits for each channel.	
Channel configuration options	Offset, Multiplication factor, skip, print, Alarms, Engg. Units etc.	
Communication	RS 485	
Communication Port	Com1 (PC communication) Com3 (AA162 Communication) Com4 (Module communication)	
Programming	a. From panel by user friendly keys. b. Remotely from PC by POLSOFT software.	
Memory	Non-Volatile 512 KB, Flash Memory.	
Memory storage time	22.2 Hrs. for 144 channels.	
Membrane Keys	8(ESC,PRG,HOLD,OK, ←, →, ▲, ▼).	
Display Resolution	Programmable	- .XXX to X.XXX
		- XX.X to XX.XX
		- X.XX to XXX.X
		- XXX to XXXX
Hooter output	Common hooter output for all channels	
Diagnostic messages	Err0,Err1 (Err0-Sensor open, Err2- No response from field devices)	
Power	100 to 260 VAC, 50 Hz, 25W	
Environmental Ranges	1. Operating temp. : 5 to 45 °C 2. Storage temp. : -40 to 65 °C 3. Humidity : Less than or equal to 80% RH non-condensing.	
Weight	2 Kg (approx.)	

Standard Supply:-

- Test & calibration certificates.
- Instruction manual.
- Warranty certificate.
- SMPS Power supply DAS-01

Ordering Information:-

Refer specifications for model numbers



DL-122M – Data Acquisition Unit (Master Module)
S/A- Serial/Analog Module.

Optional Accessories:-

- RS 232 to RS 485 converter
- Annunciation Card. (Model No. DI-122L)
- Analog Module (Model No. DL-122A)
- Serial Module (Model No. DL-122S)
- Annunciation Module (Model No. AA-162)
- DL 122 FLP Enclosure & printer cable (PRI 232)
- Distributed Data Acquisition Software (Server & Client)

For Complete Distributed Data Acquisition System ask for catalogs.

SERIAL MODULE

MODEL No: DL-122S

***** ADVANCED DIGITAL DATA CAPTURE**



Data acquisition system's architecture is fundamentally based on Functional Modularity approach. To accomplish this functional modularity Serial Module is used for collecting data from field devices through high-speed RS 485 communication (38.4Kbps). Master module in turn collects data from serial module.

FEATURES:-

- **Accepts process data from digital communicable field devices i.e. Batch Intelligent Module.**
- **Supports a maximum of 16 devices or 48 channels.**
- **Provides interface between "Annunciation card" & "Batch Intelligence Module" for Violation & Acknowledgement reception.**
- **Digital data transfer through "Serial Module" results in Zero deviation between local Indicators, "Data Acquisition unit" & "Polsoft".**

SPECIFICATIONS:-

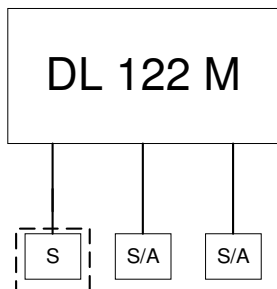
Model No.	DL-122S
Number of devices	16
Number of channels	48
Maximum No. of channels/device	8
No. of communication ports	2
Communication	RS 485 with 38.4 K baud rate
Memory	Non –Volatile Flash memory
Display	4 Status LED's
Power Supply	100 to 260 VAC, 50 Hz, 25 W
Mounting	1” Din Channel Mounting
Weight	1 Kg
Size	252 X 137 X 41.2 mm
Enclosure Type	MS with seimens gray powder coating
Environmental Ratings	Operating Temperature : 0-50°C
	Humidity : 10 – 95% RH, Non-condensing
	Storage temp. : -40 to 65 °C

Ordering Information: -

Refer specifications for model numbers

Standard Supply:-

- Test & calibration certificates.
- Instruction manual.
- Warranty certificate.
- SMPS Power supply DAS-01



DL122 M- Data Acquisition Unit (Master Module)

A- Analog Module
S- Serial Module

ANALOG MODULE MODEL No: DL-122A

*****Exceeding Expectations**



Analog module is designed as the most convenient and effective way acquiring data from field. Its application software/hardware supports max. of 16 channels.

All programmed data is stored in reliable Flash memory with 10 years of retention capacity. Analog module in conjunction with Master module & Polsoft is capable of performing high-speed data acquisition.

FEATURES:-

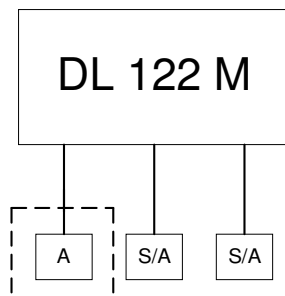
- **Accepts 16 process inputs (Analog: RTD, mA, voltages).**
- **Scan rate of 1.5 seconds for 16 channels.**
- **Resolution is of 24 bits.**
- **Remotely configurable by PC.**
- **Provides diagnostic codes for “Sensor Open” & “Comm. Fail” conditions.**
- **High speed communication port with 38.4 Kbps baud. (RS 485)**

Specifications:

Model No.	DL-122A
No. of Channels	16 (Differential mode of measurement)
Channel i/p scan rate	90 milli sec/channel
Lag time between the device(DL122A) & logger (DL122M)	1.5 Sec (Max.)
Communication	RS 485
Communication port	Com4 (Module Communication)
Programming	Remotely from PC
Display	4 Status LED indication for ADC, Ferr, ADD, Mcom
Power Supply	100 to 260 VAC, 50Hz, 25 W
Input Type	RTD (Pt-100 three wire RTD)
Measurement Range	-200.0°C to +500.0°C
Linearization	Software
Excitation Current	390 - 400µA
Maximum lead resistance/leg	50Ω/leg
Input Type	Current (0-20mA, 4-20mA)
Measurement range	-XX.X to XXX.X units
Linearization	Software
Resistance	100Ω
ADC	24 bit resolution
Resolution	XXX.X, XX.XX, X.XXX, XXXX (Selectable through programming)
Accuracy	0.1% of Full Scale or ± 1 Count
Units	Selectable through programming
Sampling Rate	105 Hz
Isolation	(a) Channel to channel 2000Vrms (b) Channel to bus 3000Vrms (c) Channel to earth 3000Vrms
Enclosure type	MS
Painting	Seimens gray powder coating
Mounting	1" DIN channel mounting
Weight	1 Kg
Size	252 X 172 X 41.2 mm
Environmental Ratings	Operating Temperature : 0-50°C Humidity : 10 – 95% RH, Non-condensing Storage temp. : -5 to 65 °C

Ordering Information: -

Refer specifications for model numbers



DL122 M- Data Acquisition Unit (Master Module)

B- Analog Module
S- Serial Module

Standard Supply:-

- Test & calibration certificates.
- Instruction manual.
- Warranty certificate.
- SMPS Power supply DAS-02

ANNUNCIATION MODULE - UTILITIES

MODEL No: AA-164



The annunciation module functions as a supervisory system in the Data Acquisition System. In PV mode the configured process values will be displayed with 4 sec's scan rate between channel to channel along with the associated reactor tag name & units. In violation mode the violated process values are displayed on the annunciation module along with the associated reactor tag name & units. This helps in pinpoint the location of alarm occurrence and improves operator handling of the Process Parameters with specified Limits.

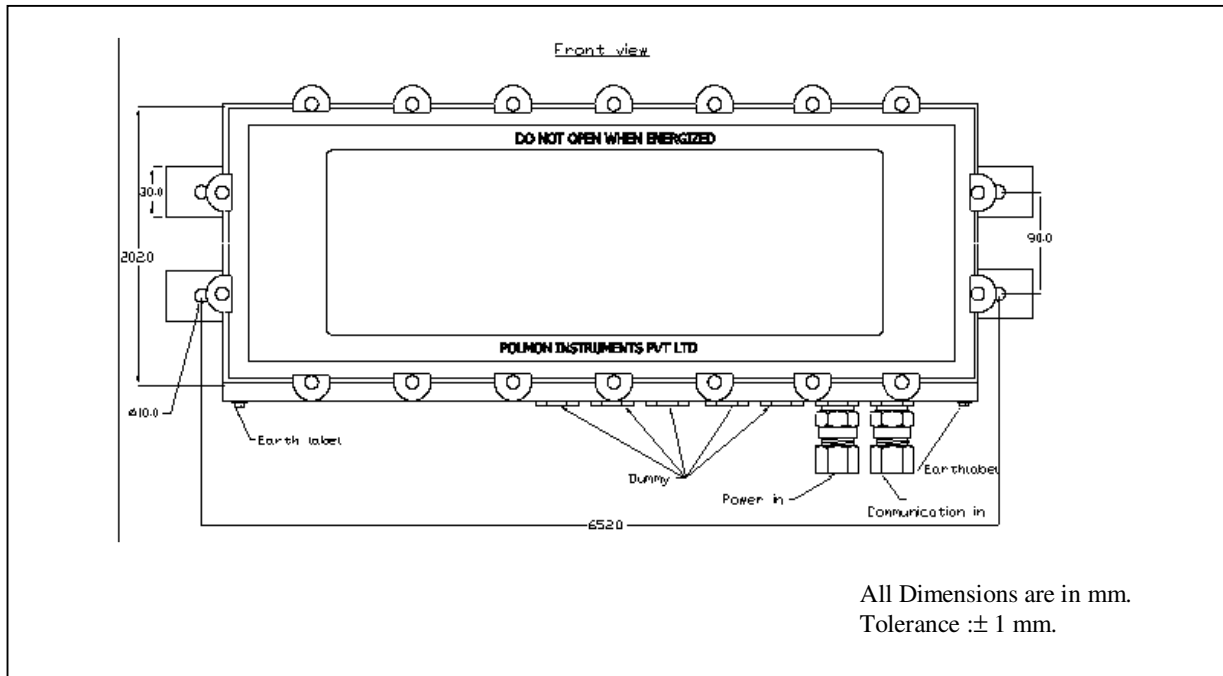
FEATURES:-

- **Supports a maximum of 48 channels.**
- **Operates in two modes viz. Violation display mode or PV display mode.**
- **Displays PV along with Configured reactor tag names & units @4 Sec/Channel.**
- **Violations are displayed until the PV Value comes within Set Limits.**
- **Displays diagnostic messages in case of communication breakdown, Sensor open conditions, & while under going remote programming.**
- **Communicates on 3-Wire RS485.**
- **Compatible to Pressure Switches interface.**

Specifications:-

Model No.	AA-164-F-X
Number of channels	48 (Max.)
Scan rate	4 Sec
Communication	RS 485
Memory	Non-Volatile 512 KB, Flash Memory.
Display	Tag Name: 10D, 2" Dot Matrix Display
	PV : 6D, 2" Dot Matrix Display
	Units : 6D, 2" Dot Matrix Display
Power Suply	100 to 260 V AC, 50 Hz, 44W
Weight	15 kg (Approx.)
Size	620 X 210 X 120 mm
Enclosure Type	FLP (aluminum)
Mounting	Wall Mounting
Painting	Epoxy gray painting
Environmental Ratings	Operating Temperature : 0-50°C
	Storage temp. : -40 to 65 °C

Dimensional Diagram:-



POLSOFT
Distributed Data Acquisition Software
(Server / Client)

POLSOFT (Data acquisition Software) in association with Data Logger provides a comprehensive and complete solution to *Data Analysis* and *Presentation*

DATA COLLECTION & STORAGE

- ❑ Supports **Remote data collection** and retrieval.
- ❑ **Quick and convenient** downloading of logger data.
- ❑ Detects and avoids storage of **Wrong / Corrupted** data.
- ❑ Supports **export of data** to other environments (Word, Excel etc.,).
- ❑ **Backup and restore** facilities available.

DATA VIEWING & ANALYSIS

- ❑ Easy data access through grouping facility.
- ❑ **Online view of Data in Tabular / Panel** format.
- ❑ **Historical data view with Set Limit violation indicated with different colours.**
- ❑ **Sorting of data based on the violation.**

REPORTS

- ❑ **Numerical & Graphical process data & Utilities reports.**
- ❑ **MIS reports for Equipment cycle time monitoring, Shift deviation report, Batch summary Report etc.**

SECURITIES

- ❑ **All Configurations** are Password protected.
- ❑ **Software closing** is also Password protected.
- ❑ **21 CFR Part 11 compliance (Optional).**

CONFIGURATION

- ❑ **Remote programming** of data logger & display systems
- ❑ **Networking** facility available. Client – Server architecture
- ❑ **User defined tag names.**