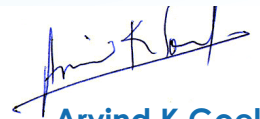


We have just completed the year 2010-11, a record year, in which we manufactured and supplied 21800 valve operators representing a growth of 40% over the previous year. We executed many prestigious projects using indigenously developed cutting-edge technology to meet special requirements of our customers. Despite this growth, we found that many of our customers grew faster than us leading to longer delivery periods. Auma India is still in expansion mode to increase its capacities significantly. Recent investment in the world-class machines such as High Speed Gear Hobbing machine, Milling machine etc., would enable us to maintain high growth in the coming years. With the ongoing investments in the people and machines, we hope to meet the expectations of our customers in terms of deliveries also in near future.

I seek your continued patronage and re-emphasise our company's policy to serve its customers to their fullest satisfaction.



Arvind K Goel
Managing Director, Auma India

Grassroot Refinery-cum-Petrochemicals Project at Paradip

Auma has bagged the order of approximately 500 actuators for tank farm automation of a 15 MTPA refinery, which is being constructed by IOCL at Paradip in Orissa. This refinery will have a Hydrocracking Unit, a Delayed Coker Unit and other secondary processing facilities, apart from a Crude and Vacuum Distillation Unit. This will be the most modern refinery in India with a nil-residue production and the products would meet most stringent specifications.

Auma has received this prestigious order through IOTL based on its vast expertise and experience in various automation projects. The order includes Auma explosion proof actuators along with worm gearboxes. Part of these actuators would be supplied with MODBUS loop topology with Master Stations. These actuators would be used to operate different types of valves like plug valves, triple eccentric butterfly valves and ball valves by various valve makers from India and abroad.

Sea Water Desalination Plant at Nemmeli

Auma India is supplying a number of actuators with MODBUS serial communication protocol with redundant line topology for a 100-MLD Reverse Osmosis Sea Water Desalination Plant at Nemmeli. This desalination plant is expected to cater to the water needs of southern suburbs of the Chennai city IT corridor, Tiruvanmiyur, Pallipattu, Velachery, MRC Nagar, Kelambakkam and Guindy.

Lanco Amarkantak Power Plant at Chattisgarh

Auma India has received a prestigious order to supply actuators and gearboxes for a 2 x 660 MW coal based power project near Pathadi - Saragbundia villages in Chattisgarh, executed by Lanco Power Ltd. The actuators and gearboxes would be supplied for operating high pressure gate valves.

Development of Special Worm Reduction Gearboxes to Operate Large Size Balancing Valves

Auma India is supplying special worm reduction gearboxes required for the operation of large size balancing valves. These gearboxes will have the following special features:

- The operating range of the gearbox for valve OPEN position is from 20° to 90°.
- Low backlash 3° - 5° at the input shaft.
- Bore with two keyways provided in the worm wheel without splined coupling.
- Special pointer cover arrangement with angular indicator scale to indicate each degree of valve travel.
- Special handwheel with locking arrangement to lock the valve in any position at site.

An Additional Horizontal Machining Center Ordered under Auma India's Expansion Plan

Auma India is procuring a DMG make Horizontal Machining Center DMC 80 H duoBLOCK® adding to the existing 4 other Horizontal Machining Centers. Auma India has opted for special features in this machine such as high torque spindle, HSK A.100 tool taker, hydraulic pallet fixturing and siemens 840D solutionline CNC controller with 3D machining. This would help in improving the quality and productivity of machined parts.



Part II - Comparisons of Redundant Digital Communication Schemes in Actuators

The predominant topology used for redundant communication in the country presently, is loop topology. However today, redundant line topology is turning out to be a viable robust alternative to loop topology. Many customers in India have used this line topology in their projects and have witnessed its benefits. Advantages of line topology is given below for better understanding:

1. Loop topology does factor in cable redundancy but it ignores the fact that the communication card inside the actuator itself could fail. The loop can achieve redundancy in communication in the event of a single such failure but not in case of multiple failures. To illustrate this let us consider an example of 40 actuators connected in loop topology. A failure in actuator 10 and 30 means that the communication of the whole set of 19 actuators between actuators 10 and 30 are rendered ineffective.

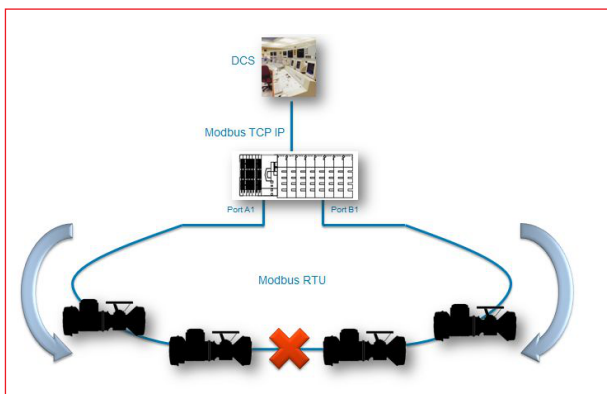
However, in line topology the failure of the communication card in the actuator is independent of the line communication and integrity of communication is maintained even in case of multiple failures.

2. The other drawback of loop communication is speed. Loop topology is severely limited in speed (baud rate). Communication speed has a bearing on the response time of actuators. Factors such as number of actuator participants and distance chosen limit the speed of communication.

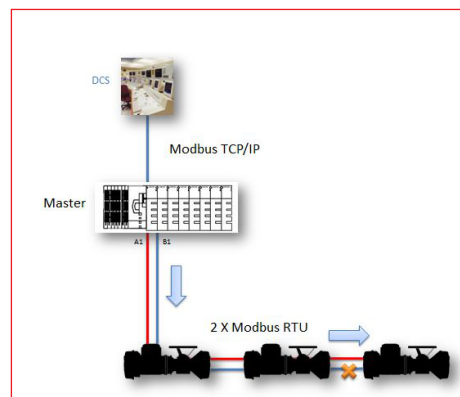
However, in case of line communication, any increase in number of participants or the distance chosen have almost no effect on speed of communication. Hence, redundant line communication emerges as a better alternative to loop as far as speed is concerned.

One argument against line topology was that it required an additional cable to achieve redundancy as compared to loop topology where only one cable is used to achieve redundancy. This advantage of loop topology was hitherto seen by users and consultants as a cost saver. However, recent review of the advantages (as described in the points above) of line topology underlines the fact that the advantages of line topology far outweigh the small onetime cost of an additional cable.

We conclude by stating that redundant line communication architecture is a more robust, speedier and will be the choice of good engineering practice in the future.



Loop Topology



Line Topology

Customer Training Programme

A 3-day training programme was conducted on 20th to 22nd January 2011 by Auma India at Bangalore, which was attended by a number of customers and end-users. The training programme was tailored to suit customer specific requirements, which included theoretical and practical training sessions.



Upcoming Customer Training Programmes

TRAINING START DATE	TRAINING END DATE
21-07-2011	23-07-2011
20-10-2011	22-10-2011
10-01-2012	12-01-2012

For more details

Contact : Mr. Krishnamurthy Umesh, HoD – Services

Phone : 080 - 39280002

Visit : [www.auma.co.in/service/customer training](http://www.auma.co.in/service/customer%20training)

Download the customer training enrollment form and send it to service@uma.co.in.

Auma India Provides Third Food Distribution Van to the “Akshaya Patra” Foundation

Auma India takes pride to be associated with ISKCON’s “Akshaya Patra” foundation, a non-governmental organisation that supplies mid-day meals to underprivileged school children in various parts of the country. Auma India has recently handed over a third food distribution van to the “Akshaya Patra” foundation, under the same association.



Auma India Pvt. Ltd.

Head Office and Works

39- B, II Phase, Peenya Industrial Area, Bangalore 560 058
Ph: 080 - 2839 4656 / 2837 0781
E-mail: info@uma.co.in Website: www.uma.co.in

Branch Office

712, 713, Bldg. No. 1
“Siddharth Towers”. Kothrud
Pune 411 038
Ph: 020 - 2541 0465
E-mail: aumapune@uma.co.in

1310, Tower A,
Corenthum Complex, Sector 62,
Noida - 201 301
Ph: 0120 - 3060522
E-mail: aumandl@uma.co.in

For feedback & extra copies, mail us at sandhya@uma.co.in

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Editorial Team: Sandhya Sengar
Balachandra MN.
Sridhar R.
Vinayaka Deshpande
Krishnamurthy Umesh