



Instrument Engineer

IDO Engineer Feature Summary:

The *Instrumentation Design Office (IDO)* engineering application *Instrument Engineer* provides instrument index data entry, change tracking, instrument index type reports and definition of instrument datasheet (specification sheet) layouts and generation of datasheets including document management. *Instrument Engineer* includes the following features:

Instrument List (Instrument Index):

- User definable Instrument List columns (viewable columns, captions, default column widths, default sort order & data filters)
- Add / Edit instruments and maintain instrument list data including DCS/PLC I/O info
- Import instruments from Excel or from P&IDs with *IntelliLink P&ID* application
- Support for several tag formats (e.g 021-FT-800, FT-800, FT-021-800, 21FC800-T etc all with or without delimiters '-')
- Open Datasheets directly from the Instrument List or instrument edit dialog
- Assign tag to new/existing datasheet from the Instrument List
- Datasheet document nos. updated from Datasheet list.
- Loop drawing nos. updated from *Instrument Designer* application.
- Hook up (installation detail) document nos. updated from *Instrument Designer*.
- Change management: Report all tags added/deleted & renamed. Report detail changes in each field (e.g. Ex Rating. now: Exi was: Exd, DCS I/O now: AI was: DI)

Datasheets (Specifications):

- Assign instruments to datasheets (supports multiple tags per sheet) by operating principle from list of tags not yet assigned
 - Control printing/updating of datasheets in 'batch' mode
 - Document management - control document revisions in 'batch mode', find/open datasheets by tag number etc
 - View/Edit Process Data in a grid for easier management of process data *across multiple datasheets & tags*
 - View/Edit all Datasheet data by form type in a grid for easier management of all data *across multiple datasheets & tags*
 - Datasheets use Microsoft Excel spreadsheets to define form layout, data entry screen and printing (fully user definable)
 - Export Datasheets to stand-alone documents (Excel spreadsheets) for easy exchange with third parties.
 - Import data from spreadsheets completed by vendor/client etc, highlight changes, accept/reject etc
 - Fully user definable datasheet design (form layout and cell/database mapping & user table design). Reuse your existing Excel datasheets or use/modify an IDO datasheet
 - Copy datasheet design (form layout/setup etc) from other IDO projects (Access or SQL Server).
 - Tools to copy data from other tags and/or datasheets (highlight differences, accept/reject etc) and convert process/engineering units
 - Import/Export Process Data from/to Excel (highlight changes, accept/reject etc)
 - Audit logging and Change Reporting features included
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Loop List:

- Create new loops with advanced user interface (pick lists, auto tag build, add from instrument index etc)
- Assign instruments to loops (from instrument list or create new tags on the fly) - instruments do not have to have a loop (e.g. a Pressure Gauge, Relief Valve etc)
- Edit instrument data for any instrument assigned to a loop (i.e access Instrument List data from Loop)
- Assign "wiring rules" for each loop tag and generate all field cables, equipment terminals and wire terminations in *IDO Wiring Manager* application automatically
- Database fields are automatically transferred to *IDO Designer's Drawing List* (creates new drawings, if required. Updates loop number, Service etc)
- Generate instant Loop Check reports print/preview loop wiring without requiring CAD
- Change management: Report all loops added / deleted & renamed. Report detail changes in each field (e.g. Loop No. now ABC was XYZ)

Reports:

Instrument Engineer supports the following reports features:

- User definable reports including print layout and export to PDF, Excel and text format
- Instrument List (or Instrument Index), DCS I/O, PLC/ESD I/O, Loop List etc
- Datasheet List (document list)
- Process Data List
- Data by datasheet form type (e.g. Report all data on all 'Orifice Plates' datasheets by tag)
- Tags assigned to datasheets/Tags Not yet assigned to a datasheet
- Database changes between Revisions, Audit Log (change list) etc

Typical user-defined datasheet in *IDO Engineer*:

Instrument Datasheet		ACTUATED BLOCK VALVE			
1	Tag No.	33-XV-3401	Service	STEAM TO STABILIZER REBOLER	
2	P&ID No	A1-70031	Fluid	HP steam to 33-E-300	Haz Area Classification Zone 2, Gr IB, T3
3	Line Number	33-P5600-C6A-150	Fluid State	Vapour	Ingress Protection IP65 for all Electronic Enclosures
4	Application	Shutdown	Fluid Nature	Steam	NACE Certification
PROCESS CONDITIONS					
6	Process Conditions	Case	Value		
7	Required Capacity	Maximum			
8	Upstream Pressure	Normal	2700 kPag		
9	Flowing Temperature	Normal	320 °C		
10	Flowing Differential Pressure	Normal			
11	Flowing Viscosity	Maximum			
12	Shutoff DP for Actuator Design	Maximum	3550 kPa		
13	Design Pressure	Max	3450 kPag		
14	Design Temperature	Max / Min	400 °C		
VALVE BODY					
16	Valve Code / Pipe Spec Reference				
17	Line Size & Sch No.	Line Material	DN 150 Sch 40		ASTM A106 GR B
18	Body Size	Trim Size & Cv	NB 150		Vendor to advise
19	Body Type	Leakage Class			ANSI Class VI or better
20	Body / Bonnet / Cover Material				
21	Ball / Disk / Plug / Seat Material 316 SS / Soft Seat Vendor to advise material				
22	End Connections ASME CL 300 RF				
23	Flange Finish	Packing	ASME B16.5 3.2 to 6.3 µmRa		Graphite
24	Bolts	Nuts	ASTM A193 GR B7 CW HVY		ASTM A194 GR 2H (Black)
25	Other Wetted Materials See Note 1				
26	Torque	Break	Run	Reset	VTA VTA VTA
27	Line Orientation (Vertical / Horizontal)				
ACTUATOR					
29	Type				
30	Mounting Orientation				
31	Housing Material & Coating				
32	Opening Time	Closing			< 3 sec
33	Quick Exhaust Valve				
34	Air Supply				
35	Air Failure Action	Special			ie spring return
36	Air Filter Regulator				f-987L
37	Fireproofing				

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