

dioxide

PACIFIC



Chemical Dosing Systems



Chemical Dosing Systems

SYSTEM IDENT CODE SELECTION

Use the data sheets on pages 3-9 to select ident codes for:

- DS (Dosing Skid)
- DP (Dosing Pumps)
- DI (Dosing Components)
- DT (Dosing Tank)
- DC (Dosing Control)
- TS (Transfer Station)
- BM (Building Mount)

Once the codes are selected, we can quickly provide a quotation. If you need assistance with selection of the codes, please contact us.

INTEGRATION AND INSTALLATION

All systems are provided with documentation for integration of the dosing system into your process: GA (General Arrangement) drawings; 3D Model; Electrical Wiring Diagram, and Operation Manual.

All systems are tested and pre-commissioned prior to delivery to ensure quick start-up without faults.

Installation and commissioning can be done by your staff using the documentation provided. If you would like Dioxide Pacific to install and commission, we are happy to help.

HIGHEST QUALITY COMPONENTS

Dioxide Pacific use high quality, industrial grade components for lowest life cycle cost.

MAINTENANCE AND SPARE PARTS

All systems are provided with a comprehensive spare parts list and Dioxide Pacific maintains a large spare parts inventory.

Dosing Skid

DS	Dosing Skid							
								Pumps
								1 Duty
								2 Duty/Standby
								3 Duty/Duty/Standby
								Flowrate
								15 0-20 L/hr (0 – 5 GPH)
								20 20-200 L/hr (5 – 50 GPH)
								25 200-500 L/hr (50 – 125 GPH)
								40 500-1000 L/hr (125 – 250 GPH)
								Pipework material
								U uPVC Sch 80
								C cPVC Sch 80
								P PVDF
								E ECTFE
								F Carbon steel, PFA lined
								S 316 s/s tube with Swagelok style fittings
								A 316 s/s welded tube and fittings
								B 316 s/s Sch10 pipe
								L PFA tube or pipe
								Elastomer
								E EPDM
								F FPM/FKM
								P PTFE
								Mounting
								HB HDPE backboard
								HC HDPE cabinet
								FF Fiberstrut frame
								SF SS frame
								SC SS cabinet
								Splash protection
								0 No splash protection – mounted directly on backboard
								1 Localised splash protection for pumps only
								2 Removable splash protection
								3 Hinged splash protection (doors)
								Leak detection
								0 No leak detection
								1 Leak detection switch in sump – HC model only
								2 Leak detection switch in additional trip tray
								Rating
								0 Standard
								1 Hazardous – Zone 1
DS	2	15	U	F	HC	2	0	0

Dosing Pumps

DP	Dosing pumps											
	Manufacturer											
P	Prominent											
G	Grundfos											
M	Milton Roy											
L	LSM Pumps											
F	Free Issue											
O	Other											
	Type											
D	Diaphragm											
P	Peristaltic											
O	Other											
	Flowrate											
	Specify max flowrate in L/hr or GPH											
	Pressure											
	Specify max pressure in bar or psi											
	Elastomer											
E	EPDM											
F	FPM/FKM											
P	PTFE											
	Liquid end material											
PV	PVDF											
PC	PVC											
PP	PP											
TT	PTFE											
SS	Stainless Steel											
	Inputs											
0	Manual run											
1	As 0 + Pulse input											
2	As 1 + 4-20mA input											
	Outputs											
0	No outputs											
1	Fault relay											
2	As 1 + 4-20mA calculated flow output											
3	As 1 + 2											
	Diaphragm rupture output											
0	No output or not applicable											
1	Diaphragm rupture output											
	Degassing solenoid											
0	No solenoid											
1	Solenoid 24VDC											
	Rating											
0	Standard											
1	Hazardous – Zone 1											
DP	P	D			F	PV	2	1	1	0	0	

Dosing Components

DI	Dosing components											
		Calibration cylinder										
0		No calibration cylinder										
1		Calibration cylinder sized for 1.5 min of drop test										
		Pressure Measurement with gauge guard										
G0		No gauge										
G1		Common pressure gauge										
G2		Pressure gauge per pump										
G3		Common Pressure Indicating Transmitter										
G4		Pressure Indicating Transmitter per pump										
		Pressure load										
L0		No pressure load valve										
L1		Common pressure load valve										
L2		Pressure load valve per pump										
		Pressure relief										
P0		No pressure relief valve										
P1		Common pressure relief valve										
P2		Pressure relief valve per pump										
		Pulsation dampener										
0		No pulsation dampener										
1		Common pulsation dampener										
2		Pulsation dampener per pump										
		Flow switch on pressure relief										
0		No flow switch										
1		Flow switch on each pressure relief										
		Flow Monitoring										
0		No flow monitoring										
1		Common flow monitoring										
2		Flow monitoring per pump										
		Flow Monitoring Type										
0		None										
1		Magnetic flow meter										
2		Flow switch										
3		Flow meter pulse output										
4		VA meter with 4-20mA and pulse output										
		Flush Points										
0		No flushing points										
1		Flushing points on pumps										
2		As 1 + flushing points on skid										
		Carrier/Dilution Water										
0		No carrier/dilution water										
1		Carrier water line on skid										
2		As 1 + rotameter and diaphragm valve										
3		As 2 + solenoid with bypass										
4		As 2 + low flow switch										
5		As 3 + low flow switch										
6		As 1 + Option 5 mounted in external cabinet										
7		As 5 + Carrier water pump										
8		As 5 + Duty/standby carrier water pump										
		Strainer										
0		No strainer										
1		1 x strainer										
2		2 x strainer										
		Rating										
0		Standard										
1		Hazardous – Zone 1										
DI	1	G1	L1	P1	1	10	0	1	2	5	1	0

Dosing Tank

DT	Dosing tank										
		Volume									
		Specify nominal volume in L or GAL									
		Material									
		M0	HDPE								
		M1	HDPE double skinned								
		M2	Rotomoulded MDPE								
		M3	Fiberglass								
		M4	Steel								
		M5	Stainless Steel								
		M6	IBC/Tote								
		M7	IBC/Tote with spill pallet								
		M8	IBC/Tote with fiberglass bund								
		M9	IBC/Tote with HDPE bund								
			Colour								
		B	Black								
		N	Natural (opaque)								
		W	White								
		P	Painted								
			Visual level indication								
		NVI	No level indication (opaque tanks visual possible)								
		STO	Sight gauge								
		STI	Sight gauge with isolation								
		MLI	Magnetic level indicator								
			Discrete level measurement (capacitive measurement)								
		L0	No discrete level measurement								
		L1	1 x switch: low level								
		L2	2 x switch: low and high level								
		L3	3 x switch: low low, low and high level								
		L4	3 x switch: low, high and high high level								
		L5	4 x switch: low low, low, high and high high level								
			Continuous level measurement								
		C0	No continuous level measurement								
		C1	4-20mA from tank mounted ultrasonic								
		C2	4-20mA from standpipe mounted ultrasonic								
		C3	4-20mA from magnetic level indicator								
		C4	4-20mA from pressure transducer (gauge guard mounted)								
		C5	4-20mA from tank mounted radar								
			Inlet and overflow sizing								
		00	Not applicable								
		15	0.5" inlet, 1" overflow								
		25	1" inlet, 1.5" overflow								
		40	1.5" inlet, 2" overflow								
		50	2" inlet, 3" overflow								
			Outlet valve sizing								
		15	0.5" outlet								
		25	1" outlet								
		40	1.5" outlet								
		50	2" outlet								
			Load Cells (weight measurement)								
		0	No load cells								
		1	Load cells								
			Actuated valve								
		0	No actuated valves								
		1	Actuated valve on tank outlet								
			Rating								
		0	Standard								
		1	Hazardous – Zone 1								
DT		M0	B	STI	L4	C2	25	25	0	1	0

Dosing Control

DC	Dosing Control									
	Enclosure									
	T	Thermoplastic IP66								
	S	Stainless steel 316, IP65								
	F	FRP IP66								
	S	Powder coated steel, IP56								
		PLC								
	MIC	Allen Bradley MicroLogix 1400								
	CON	Allen Bradley ControlLogix 1756								
	COM	Allen Bradley CompactLogix 1769								
	PAN	Panasonic FPX								
	SCH	Schneider M340								
	SIE	Siemens S7-300								
	KO6	Koyo DL06								
	K45	Koyo 450								
		HMI								
	0	No HMI – lights and switches only								
	1	Red Lion G308 7.5 inch TFT colour								
	2	Red Lion G306 5.7 inch TFT colour								
	3	Red Lion G304K2 4.3 inch colour								
	4	Allen Bradley Panelview Plus 700 - 6.5 inch TFT colour								
	5	Allen Bradley Panelview Plus 1250 - 12 inch TFT colour								
	6	Allen Bradley Panelview Plus 1500 – 15 inch TFT colour								
	7	Schneider XBTGT 12 inch TFT colour								
	8	Uticor UT3-10TC 10 inch TFT colour								
		Form								
	1F	Form 1								
	2A	Form 2a								
	2B	Form 2b								
	3A	Form 3a								
	3B	Form 3b								
		LV/ELV Separation								
	00	Not applicable								
	AV	All voltages in one panel (24VDC, 220-240VAC, 415-480VAC)								
	SV	LV and ELV separate panels (24VDC separate to 220-480VAC)								
		Mounting								
	0	Wall mount								
	1	Floor mount								
		Entry								
	0	Bottom cable entry								
	1	Side cable entry								
	2	Top cable entry								
		Rating								
	0	Standard								
	1	Hazardous – Zone 1								
DC	F	CON	1	1F	AV	0	0	0		

Transfer Station

TS	Transfer Station				
		Tank feeds			
	1	1 tank fed			
	2	2 tanks fed			
	3	3 tanks fed			
		Isolation valves on feeds			
	M	Manual			
	A	Actuated			
		Tank level indication			
	1	Display of level switches			
	2	Display of tank volumes			
	3	1 + 2			
		Transfer power supply			
	SF	1 phase, 240VAC plug with isolator			
	TF	3 phase, 415VAC plug with isolator			
	DF	SF + TF			
	AD	Solenoid for air driven transfer			
		Rating			
	0	Standard			
	1	Hazardous – Zone 1			
TS	1	M0	1	TF	0

Building Mount

BM	Portable Building Mount											
		Building Type										
	B0	Not Included										
	B1	Galvanised steel chassis with foam sandwich walls										
	B2	Concrete base with foam sandwich walls										
	B3	Full concrete building										
	B4	20ft standard shipping container – used and refurbished										
	B5	20ft standard shipping container - new										
	B6	40ft standard shipping container – used and refurbished										
	B7	40ft standard shipping container - new										
	B8	20ft high cube shipping container – used and refurbished										
	B9	20ft high cube shipping container – new										
	B10	40ft high cube shipping container – used and refurbished										
	B11	40ft high cube shipping container – new										
	B12	Trailer mount										
			Lightning Protection									
		0	Not included									
		1	Included									
				Cyclone Rating								
			0	Not included								
			1	Included								
					Epoxy Painting							
				0	Not included (standard building paint finish)							
				1	Inside only (chemical resistance for chemical stored in building)							
				2	Outside only (weather protection)							
				3	1 + 2							
						Air Conditioning						
					0	Not Included						
					1	Included						
						Ventilation						
					0	Not Included						
					1	Roof fan only (not powered)						
					2	1 + vents in building wall						
					3	Powered fan + vents in building wall						
							Emergency Exit Light					
						0	Not Included					
						1	Included					
								Building Lights				
							0	Not Included				
							1	Fluorescent lamps to suit building size				
									Single Phase Power Outlet			
								0	Not Included			
								1	One included			
								2	Two Included			
										Three Phase Power Outlet		
									0	Not Included		
									1	One included		
										Safety Shower and Eyewash		
										0	Not Included	
										1	One inside the building	
										2	1+ one outside the building	
BM	B1	0	0	0	0	0	0	1	1	0	0	

Features and Benefits

FEATURE	BENEFIT	WHAT THIS MEANS FOR YOU
All systems manufactured by Dioxide Pacific personnel with more than 20 years' experience in chemical dosing systems	High quality manufacture produces long term reliability and low probability of failure	Lowest lifetime cost of ownership and minimum downtime over equipment life
3D CAD used to model all systems	Systems are consistent so you can confidently use the data we provide to integrate into your plant	When you receive the plant, it will be exactly the same as the 3D model we provide at time of order. No surprises
High quality, commonly used components	Probability of component failure is low, spare parts and replacement are available worldwide	You won't be stuck waiting for replacement parts with the system offline
Duty/standby operation based on time and fault	If the duty dosing pump goes into fault, swap over occurs automatically to the standby dosing pump. Duty and standby dosing pumps will swap on an adjustable time basis if no faults present.	You will always have continuity of dosing. If dosing of the chemical is critical then this duty/standby option should be selected.
Duty/duty/standby operation based on time and fault. In this case, you have two separate dosing points with one common standby pump.	If either duty dosing pump goes into fault, swap over occurs automatically to the standby dosing pump. Duty and standby dosing pumps will swap on an adjustable time basis if no faults present.	You will always have continuity of dosing. If dosing of the chemical is critical then this duty/standby option should be selected.
Choice of pipe materials to suit the chemical. UPVC, CPVC, PVDF or Carbon Steel – PFA Lined.	These common materials will suit most chemicals and the correct materials will be selected to suit your chemical	You can have full confidence in the chemical resistance of the pipe materials
Choice of seal materials to suit the chemical. EPDM, FKM (Viton), PTFE	These common materials will suit most chemicals and the correct materials will be selected to suit your chemical	You can have full confidence in the chemical resistance of the seal materials
Safety is a high priority in design. You can choose to have the dosing equipment mounted in a HDPE or SS cabinet with splash protection	All the equipment in contact with chemical is fully enclosed. If a leak occurs, it will be contained and will not come into contact with the operator	You can safely work around and maintain the equipment without fear of chemical splashes

FEATURE	BENEFIT	WHAT THIS MEANS FOR YOU
Major reputable brands of dosing pump can be used on our systems	If you have a preference for a particular brand we can accommodate it	You can minimize spare parts kept at your site and you will be familiar with the dosing pump you have selected
Dosing skids can be customized with only the components you need for your application e.g. for long dosing lines and smooth flow a pulsation dampener can be selected	No need to pay for unnecessary features that never get used.	Your capital (purchase) cost is kept as low as possible while still maintaining highest quality and system integrity
Bulk chemical storage can be perfectly integrated with the chemical dosing system by your choice of the tank and tank options	Single source supply for chemical tank, instrumentation and dosing system keeps the responsibility for performance with Dioxide Pacific.	Your plant will fit together like a glove and work seamlessly as all components including tank, instrumentation and dosing equipment are designed to work together
The TS Transfer Station is a HDPE cabinet with inlet manifold suited to the chemical. Controls for start/stop and run/fault for transfer pump and level switch display optional	Bulk chemical transfer using the Dioxide Pacific TS transfer station makes power supply and chemical transfer from tanker to tank easy	Your safety is maintained during transfer of chemical from tanker to bulk tank
The dosing system can be supplied with an electrical control panel which operates all of the electrical devices, monitors instrumentation inputs and is remotely accessible via the internet	The dosing plant comes to you fully assembled, wired and tested including all of the plant logic operated by PLC and HMI. You don't need to do any customization or fault finding on site	Having the ability to control the system easily from one HMI location, including manual operation of individual items for testing or calibration is provided to make your life easier. Remote internet access with email alarms, allows for simple and quick troubleshooting without the need for a site visit – reducing your service costs.



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