

Register Maps for the Solutions Kits



DXM Local Register Summary

Registers for the Vibration Monitoring and Predictive Maintenance Kits

The following table applies to Performance 900 MHz and 2.4 GHz Vibration Solutions Kits (-Vibe, -Vibemetric, and -Vibe-Q versions 2.2). N represents the Motor Node ID number.

Name	Register	Range	Description	Cloud Push Default
Vibration Data	$1 + (N - 1) \times 5$	1-200	Z Axis Velocity	✓
	$2 + (N - 1) \times 5$		Z Axis Hi Freq Acceleration	✓
	$3 + (N - 1) \times 5$		X Axis Velocity	✓
	$4 + (N - 1) \times 5$		X Axis Hi Freq Acceleration	✓
	$5 + (N - 1) \times 5$		Temperature	✓
Vibe Mask	$201 + (N - 1)$	201-240	Bit Packed Alarm Message	✓
Run Flag	$241 + (N - 1)$	241-280	Motor Running Flag (0/1)	
Node Status	$281 + (N - 1)$	281-320	Connection Status of Radio (128 = Connected)	✓
Baseline	$321 + (N - 1)$	321-360	Trigger to Re-baseline a Sensor Node (0/1)	Read/Write
Raw Register Data	$361 + (N - 1) \times 5$	361-560	Placeholder Registers for Script	
	$362 + (N - 1) \times 5$			
	$363 + (N - 1) \times 5$			
	$364 + (N - 1) \times 5$			
	$365 + (N - 1) \times 5$			
Warn/Alarm masks		561-574		
Temp ORs		575-576	ORed Alarm Registers	
Status Radio ORs		577-578		
Temp Warn	$581 + (N - 1)$	581-620	Individual Temperature Warning Regs (0/1)	
Temp Alarm	$621 + (N - 1)$	621-660	Individual Temperature Alarm Regs (0/1)	
Run Thresholds Constants	$661 + (N - 1)$	661-700	Threshold Constant for Motor Run determination	
	$701 + (N - 1)$	701-740		
	$741 + (N - 1)$	741-780		
	$781 + (N - 1)$	781-820		
Site Survey		821-823	Solutions Kit Functionality	
Binding		824		
Alert Warning Lights		825-830		
Sample Count		831		
Read Rule Enable		832		
Setup Nodes		833		
Sample Time		834		
Push Count		835		

Name	Register	Range	Description	Cloud Push Default
Nodes 1-10 Status		836		
Nodes 11-20 Status		837		
Nodes 21-30 Status		838		
Nodes 31-40 Status		839		
Fast Sample Trigger		843		
Cloud Push Enable		844	Enable or Disable cloud pushing	
First Run		851	Solutions Kit Functionality (0/1, set to 0 to reinitialize settings)	
Baseline samples		852	Set number of samples for a baseline (default 300)	
Acute Sample		853	Number of samples in a row for Acute fault (default 5)	
Chronic Fault Trends 100 Point Moving Average	$5021 + (N - 1) \times 4$	5021-5180	Z Velocity Trend	
	$5022 + (N - 1) \times 4$		Z Acceleration Trend	
	$5023 + (N - 1) \times 4$		X Velocity Trend	
	$5024 + (N - 1) \times 4$		X Acceleration Trend	
Visible Baseline & Alarms	$5181 + (N - 1) \times 12$	5181-5660	Thresholds being used for alarms (Selected from Learned or User Defined)	Push once a day at UTC 00:00
Learned Thresholds	$5661 + (N - 1) \times 8$	5661-5980	Thresholds from algorithm (used in 5181-5660 if equivalent user thresholds in 7001-7320 are set to 0)	
Scaled Temp Reading	$5981 + (N - 1)$	5981-6020	Placeholder Registers for Script	
User Selected Nodes	$6021 + (N - 1)$	6021-6060	Solutions Kit Functionality	
Current(A) Reading	$6061 + (N - 1)$	6061-6100	Current reading in amps from CM node if used	✓
Current Alerts Mask	$6101 + (N - 1)$	6101-6140	Current Alerts Mask (Bit 1 Warning, Bit 2 Alarm)	✓
User Defined Thresholds	$7001 + (N - 1) \times 8$	7001-7320	User Defined Vibration Thresholds (will override Learned Thresholds)	
Saved Count/Mean/StdDev	$7321 + (N - 1) \times 9$	7321-7680	Solutions Kit Functionality	
Temp Warn Thresholds	$7681 + (N - 1)$	7681-7720	User Defined Temperature Thresholds	Push once a day at UTC 00:00 / Write
Temp Alarm Thresholds	$7721 + (N - 1)$	7721-7760		
Current Warn Thresholds	$7761 + (N - 1)$	7761-7800	User Defined Current Thresholds	Push once a day at UTC 00:00 / Write
Current Alarm Thresholds	$7801 + (N - 1)$	7801-7840		
Current Scale	$7841 + (N - 1)$	7841-7880	Current Scale (read but dip switches but user adjustable)	

Registers for the MultiHop Vibration Monitoring and Predictive Maintenance Solutions Kits

The following table applies to 900 MHz and 2.4 GHz MultiHop Vibration Solutions Kits (-Vibe-MH, and -Vibetric-MH versions 2.3). N is the Motor Sensor number.

Name	Register	Range	Description	Cloud Push Default
Vibration Data	$1 + (N - 1) \times 5$	1-200	Z Axis Velocity	✓
	$2 + (N - 1) \times 5$		Z Axis Hi Freq Acceleration	✓
	$3 + (N - 1) \times 5$		X Axis Velocity	✓

Name	Register	Range	Description	Cloud Push Default		
	$4 + (N - 1) \times 5$		X Axis Hi Freq Acceleration	✓		
	$5 + (N - 1) \times 5$		Temperature	✓		
Vibe Mask	$201 + (N - 1)$	201-240	Bit Packed Alarm Message	✓		
Run Flag	$241 + (N - 1)$	241-280	Motor Running Flag (0/1)			
Node Status	$281 + (N - 1)$	281-320	Connection Status of Radio (128 = Connected)	✓		
Baseline	$321 + (N - 1)$	321-360	Trigger to Re-baseline a Sensor Node (0/1)	Read/Write		
Raw Register Data	$361 + (N - 1) \times 5$	361-560	Placeholder Registers for Script			
	$362 + (N - 1) \times 5$					
	$363 + (N - 1) \times 5$					
	$364 + (N - 1) \times 5$					
	$365 + (N - 1) \times 5$					
Warn/Alarm masks		561-574	ORed Alarm Registers			
Temp ORs		575-576				
Status Radio ORs		577-578				
Temp Warn	$581 + (N - 1)$	581-620	Individual Temperature Warning Regs (0/1)			
Temp Alarm	$621 + (N - 1)$	621-660	Individual Temperature Alarm Regs (0/1)			
Run Thresholds Constants	$661 + (N - 1)$	661-700	Threshold Constant for Motor Run determination			
	$701 + (N - 1)$	701-740				
	$741 + (N - 1)$	741-780				
	$781 + (N - 1)$	781-820				
Alert Warning Lights		825-830	Solutions Kit Functionality			
Sample Count		831				
Sensor Discovery		832				
Network Reformation		833				
Sample Time		834				
Push Count		835				
Nodes 1-10 Status		836				
Nodes 11-20 Status		837				
Nodes 21-30 Status		838				
Nodes 31-40 Status		839				
Fast Sample Trigger		843				
Cloud Push Enable		844			Enable or Disable cloud pushing	
First Run		851			Solutions Kit Functionality (0/1, set to 0 to reinitialize settings)	
Baseline samples		852	Set number of samples for a baseline (default 300)			
Acute Sample		853	Number of samples in a row for Acute fault (default 5)			
N/A		854	N/A			
Slave Starting Number		855	Slave Address Starting Number (Default 11)			
Status Wait Time for Dropout		856	Samples before re-checking a slave that dropped out of the system (Default 48)			
Spectral Band Information (Floating Point Registers)	$1001 + (N - 1) \times 36$	1001-2440	Z Axis Velocity 1x Band			

Name	Register	Range	Description	Cloud Push Default
	$1003 + (N - 1) \times 36$		Z Axis Peak Velocity 1x Band	
	$1005 + (N - 1) \times 36$		Z Axis Velocity Peak Frequency 1x Band	
	$1007 + (N - 1) \times 36$		Z Axis Velocity 2x Band	
	$1009 + (N - 1) \times 36$		Z Axis Peak Velocity 2x Band	
	$1011 + (N - 1) \times 36$		Z Axis Velocity Peak Frequency 2x Band	
	$1013 + (N - 1) \times 36$		Z Axis Velocity 3x-10x Band	
	$1015 + (N - 1) \times 36$		Z Axis Peak Velocity 3x-10x Band	
	$1017 + (N - 1) \times 36$		Z Axis Velocity Peak Frequency 3x-10x Band	
	$1019 + (N - 1) \times 36$		X Axis Velocity 1x Band	
	$1021 + (N - 1) \times 36$		X Axis Peak Velocity 1x Band	
	$1023 + (N - 1) \times 36$		X Axis Velocity Peak Frequency 1x Band	
	$1025 + (N - 1) \times 36$		X Axis Velocity 2x Band	
	$1027 + (N - 1) \times 36$		X Axis Peak Velocity 2x Band	
	$1029 + (N - 1) \times 36$		X Axis Velocity Peak Frequency 2x Band	
	$1031 + (N - 1) \times 36$		X Axis Velocity 3x-10x Band	
	$1033 + (N - 1) \times 36$		X Axis Peak Velocity 3x-10x Band	
	$1035 + (N - 1) \times 36$		X Axis Velocity Peak Frequency 3x-10x Band	
Site Survey		5001-5005	Solutions Kit registers for Site Survey	
Binding		5006-5007	Solutions Kit registers for Binding	
Chronic Fault Trends 100 Point Moving Average	$5021 + (N - 1) \times 4$	5021-5180	Z Velocity Trend	
	$5022 + (N - 1) \times 4$		Z Acceleration Trend	
	$5023 + (N - 1) \times 4$		X Velocity Trend	
	$5024 + (N - 1) \times 4$		X Acceleration Trend	
Visible Baseline & Alarms	$5181 + (N - 1) \times 12$	5181-5660	Thresholds being used for alarms (Selected from Learned or User Defined)	Push once a day at UTC 00:00
Learned Thresholds	$5661 + (N - 1) \times 8$	5661-5980	Thresholds from algorithm (used in 5181-5660 if equivalent user thresholds in 7001-7320 are set to 0)	
Scaled Temp Reading	$5981 + (N - 1)$	5981-6020	Placeholder Registers for Script	
Additional Vibration Registers	$6141 + (N - 1) \times 10$	6141-6540	Z Axis Peak Acceleration	
	$6142 + (N - 1) \times 10$		X Axis Peak Acceleration	
	$6143 + (N - 1) \times 10$		Z Axis Peak Velocity Frequency Component	
	$6144 + (N - 1) \times 10$		X Axis Peak Velocity Frequency Component	
	$6145 + (N - 1) \times 10$		Z Axis RMS Low Acceleration	
	$6146 + (N - 1) \times 10$		X Axis RMS Low Acceleration	
	$6147 + (N - 1) \times 10$		Z Axis Kurtosis	
	$6148 + (N - 1) \times 10$		X Axis Kurtosis	
	$6149 + (N - 1) \times 10$		Z Axis Crest Factor	
	$6150 + (N - 1) \times 10$		X Axis Crest Factor	
Radio ID	$6541 + (N - 1)$	6541-6580	Radio ID associated with each sensor	
Speed Input (Hz)	$6581 + (N - 1)$	6581-6620	Speed Input in Hz for Spectral Banding Registers	
User Defined Thresholds	$7001 + (N - 1) \times 8$	7001-7320	User Defined Vibration Thresholds (will override Learned Thresholds)	

Name	Register	Range	Description	Cloud Push Default
Saved Count/Mean/StdDev	$7321 + (N - 1) \times 9$	7321-7680	Solutions Kit Functionality	
Temp Warn Thresholds	$7681 + (N - 1)$	7681-7720	User Defined Temperature Thresholds	Push once a day at UTC 00:00 / Write
Temp Alarm Thresholds	$7721 + (N - 1)$	7721-7760		
User Selected Nodes	$7881 + (N - 1)$	7881-7920	Solutions Kit Functionality (0/1 with 0 = sensor in system, 1 = no sensor) Used to keep timeouts low, reducing slave IDs talked to by the system.	

Registers for Tank Level Monitoring Kits

The following table applies to Performance 900 MHz and 2.4 GHz Tank Level Monitoring Solutions Kits (-Tank, versions 2.0). No cloud pushing defaults are configured. N represents the Sensor Node ID number.

Name	Local Register #	Range	Description	Cloud Push Default
Tank Information & Settings	$1 + 10 \times (N - 1)$	1-157	Tank Level Percentage	
	$2 + 10 \times (N - 1)$		Tank Depth Setting	
	$3 + 10 \times (N - 1)$		Tank Offset Setting	
	$4 + 10 \times (N - 1)$		Tank Alert Low Setting	
	$5 + 10 \times (N - 1)$		Tank Alert Low Low Setting	
	$6 + 10 \times (N - 1)$		Tank Alert High Setting	
	$7 + 10 \times (N - 1)$		Tank Alert High High Setting	
Tank High Alerts	$160 + (N - 1)$	160-175	High Alert (0/1)	
Tank High High Alerts	$180 + (N - 1)$	180-195	High High Alert (0/1)	
Tank Low Alerts	$201 + (N - 1)$	201-216	Low Alert (0/1)	
Tank Low Low Alerts	$221 + (N - 1)$	221-236	Low Low Alert (0/1)	
ORed Alerts	239	239-242	Any High active	
	240		Any High High active	
	241		Any Low active	
	242		Any Low Low active	
Enable Lights	245		Enable Q45 Lights (0/1)	
Node Status	$251 + (N - 1)$	251-266	Wireless Connections Status (128 = Good connection)	
Tank Timer	$300 + (N - 1)$	300-315	1 second timer for estimate fill and empty rates	
Empty Time	$316 + (N - 1) \times 2$	316-347	Estimated Time in hours to Empty or Full	
Fill Time	$317 + (N - 1) \times 2$			
Empty / Fill	$348 + (N - 1)$	348-363	Tank Emptying or Filling (0 = Filling, 1 = Emptying)	
OR'd Sensor Range Error	400		OR'd sensor range error (0/1)	
Sensor Out of Range	$401 + (N - 1)$	401-416	Sensor Out of Range Error (0/1)	
Analog IN Value	$420 + (N - 1)$	420-435	Analog IN reading from Node (if not using K50U sensor)	
Minimum Scale	$451 + (N - 1) \times 2$	451-482	User Defined Minimum & Maximum scale value for Analog Sensors	
Maximum Scale	$452 + (N - 1) \times 2$			
Site Survey		801-803	Solutions Kit Functionality	
Binding		804		
Alert Warning Lights		805-809		
Fast Sample Trigger	$810 + (N - 1)$	810-825		

Name	Local Register #	Range	Description	Cloud Push Default
Number of Nodes		845		

Registers for the Temperature and Humidity Monitoring Kits

The following table applies to the Performance 900 MHz and 2.4 GHz Temperature and Humidity Monitoring Solutions Kits (-TH, versions 2.0). N is the Sensor Node ID number.

Name	Local Register #	Range	Description	Cloud Push Default
Temperature and Humidity Scaled data	$1 + 2 \times (N - 1)$	1-80	Temperature	✓
	$2 + 2 \times (N - 1)$		Humidity	✓
Radio Status	$81 + (N - 1)$	81-120	Node Connection Status (0/128)	✓
Dew Point	$121 + (N - 1)$	121-160	Dew Point	✓
Temp Low Alarm	$161 + 8 \times (N - 1)$	161-480	Temperature Alert (0 = OFF/1 = ON)	
Temp Low Warning	$162 + 8 \times (N - 1)$			
Temp High Warning	$163 + 8 \times (N - 1)$			
Temp High Alarm	$164 + 8 \times (N - 1)$			
Humidity Low Alarm	$165 + 8 \times (N - 1)$		Humidity Alert (0 = OFF/1 = ON)	
Humidity Low Warning	$166 + 8 \times (N - 1)$			
Humidity High Warning	$167 + 8 \times (N - 1)$			
Humidity High Alarm	$168 + 8 \times (N - 1)$			
Alarm Bit Pack	$481 + (N - 1)$		481-520	
Node Selection	$521 + (N - 1)$	521-560	Solutions Kit Functionality (0=Node ON, 1 = Node OFF)	
Node 1-10 Status ORed		561	Node 1-10 Status ORed (0/1)	
Node 11-20 Status ORed		562	Node 11-20 Status ORed (0/1)	
Node 21-30 Status ORed		563	Node 21-30 Status ORed (0/1)	
Node 31-40 Status ORed		564	Node 31-40 Status ORed (0/1)	
Fast Sample Trigger	$601+(N-1)$	601-640	Fast Sample Trigger (0/1)	
Site Survey		801-803	Solutions Kit Functionality	
Binding		804		
Alarm Light UnivOut1		805		
Warning Light UnivOut2		806		
AnyError Light UnivOut3		807		
All Clear Light UnivOut4		809		
OR'd alarm Registers		821-832		
Celsius On/Off		845		
First Run		851	Initialize parameters during first run (0 = Re-initialize / 1 - Initialized)	
Temp Low Alarm	$7001 + 8 \times (N - 1)$	7001-7320	Temperature Alert Setting Non-Volatile	✓ Read/Write
Temp Low Warning	$7002 + 8 \times (N - 1)$			
Temp High Warning	$7003 + 8 \times (N - 1)$			

Name	Local Register #	Range	Description	Cloud Push Default
Temp High Alarm	$7004 + 8 \times (N - 1)$		Humidity Alert Setting Non-Volatile	✓ Read/Write
Humidity Low Alarm	$7005 + 8 \times (N - 1)$			
Humidity Low Warning	$7006 + 8 \times (N - 1)$			
Humidity High Warning	$7007 + 8 \times (N - 1)$			
Humidity High Alarm	$7008 + 8 \times (N - 1)$			

Registers for the Pressure Monitoring Solutions Kits

The following table applies to the Performance 900 MHz and 2.4 GHz Pressure Monitoring Solutions Kits (-Pressure, versions 1.0). N represents the Sensor Node ID number.

Name	Local Register #	Range	Description	Cloud Push Default
Pressure Scaled data	$1 + (N - 1)$	1-40	Pressure	✓
Radio Status	$41 + (N - 1)$	41-80	Node Connection Status (0/128)	✓
Pressure High Alarm	$101 + 4 \times (N - 1)$	101-260	Pressure Alert (0 = OFF/1 = ON)	
Pressure High Warning	$102 + 4 \times (N - 1)$			
Pressure Low Warning	$103 + 4 \times (N - 1)$			
Pressure Low Alarm	$104 + 4 \times (N - 1)$			
Alarm Bit Pack	$301 + (N - 1)$	301-340	Alarm Bit Pack (Bit 0 - Bit 3 following order of above registers)	✓
OR'd Alarms		527	Any Alarm (0/1), Optional: Alarm Light UnivOut1	
OR'd Warnings		528	Any Warning (0/1) Optional: Warning Light UnivOut2	
Any Errors		529	Any Alarm or Warning (0/1) Optional: Warning Light UnivOut3	
All Clear		530	All Clear (0/1) Optional: Light UnivOut4	
Node 1-10 Status OR'd		561	Node 1-10 Status OR'd (0/1)	
Node 11-20 Status OR'd		562	Node 11-20 Status OR'd (0/1)	
Node 21-30 Status OR'd		563	Node 21-30 Status OR'd (0/1)	
Node 31-40 Status OR'd		564	Node 31-40 Status OR'd (0/1)	
Site Survey		801-803	Solutions Kit Functionality	
Binding		804		
First Run		851	Initialize parameters during first run (0 = Re-initialize / 1 - Initialized)	
Pressure High Alarm	$7001 + 5 \times (N - 1)$	7001-7200	Pressure Alert Setting Non-Volatile	✓ Read/Write
Pressure High Warning	$7002 + 5 \times (N - 1)$			
Setpoint	$7003 + 5 \times (N - 1)$			
Pressure Low Warning	$7004 + 5 \times (N - 1)$			
Pressure Low Alarm	$7005 + 5 \times (N - 1)$			
Node Selection	$7201 + (N - 1)$	7201-7240	Solutions Kit Functionality (0=Node ON, 1 = Node OFF)	✓ Read/Write
Unit Selection		7281	Unit Selection (0=Standard, 1 = Metric)	✓ Read/Write