

Two host interface modules are available to allow a plant computer system or PLC (Programmable Logic Controller) to communicate directly with the ProRate PLUS PCM-KD. All connectivity electronics mount inside the PCM-KD, allowing all control functions. No external converters are used. The modules provide an extremely powerful and flexible interface that can be configured for basic start/stop and data monitoring operations as well as complex applications requiring changes and multiple feedback values.



All modules conform to the following standards: UL/UR (US), CSA (Canada), CE (Europe).

Module	Protocol	Device Interface	Max. Transfer Rate	No. of Nodes	Connection
	Ethernet/IP or Profinet-IO	Ethernet	100 Mbit/s	depends on net- work configuration	RJ-45

The PCM-KD comes with a standard built-in configuration for basic register mapping to allow quick access to system parameters and control functions. See the tables below and on page 2 for the register definitions for 1 to 8 feeders.

Bit#	LineCommands (System Write Block)	Bit#	LineProcessStatus (System Read Block)	Bit#	SystemAlarmStatus (System Read Block)
0	Acknowledge Alarms (Line & System)	0	Initialization Complete	0	SD Card Failure
1	Clear Alarms (Line & System)	1	Line is Running	1	Power Glitch
2	Stop, Preserve Alarms	2	Disabled	8	Battery Low
3	Start, Clear Alarms	4	Interlock By Digital Input	10	Unexpected Reset
6	Clear Totalizer	5	Any Unit In Line Disabled	12	Keypad failure
28	Acknowledge Alarms (Line only)	6	Any Unit In Line Hard Alarm	13	Digital output fault
29	Clear Alarms (Line only)	7	Wait (Setpoint zero or interlock open)	15	Watchdog reset
30	Acknowledge Alarms (System only)	8	Start OK	16	Operating System Fault
31	Clear Alarms (System only)	9	Started	26	Coprocessor failure
		10	Any Unit In Line Soft Alarm	27	Host Port fail
Bit#	LineAlarmStatus (System Read Block)	11	Recipe OK	28	Host Port fail during initialization
0	Line Unit #1 Hard Alarm	12	Line setpoint exceeds one of units	29	Host Port wrong board
1	Line Unit #2 Hard Alarm	13	Not all units in line are running		
2	Line Unit #3 Hard Alarm	17	Any unit in line has an alarm shutdown	Bit#	UnitProcessStatus (Unit Read Block)
3	Line Unit #4 Hard Alarm	18	Alarm shutdown input	1	Line is Running
4	Line Unit #5 Hard Alarm	19	Alarm shutdown output = line stop	2	Disabled
5	Line Unit #6 Hard Alarm	20	Line Hard Alarm	3	Drive Enable Output
6	Line Unit #7 Hard Alarm	21	Line Soft Alarm	4	Line Interlock In
7	Line Unit #8 Hard Alarm	22	Line Warning	5	MDU Hard Interlock status
8	Line Setpoint High	28	Hport initialization complete	6	MDU Enable Input status
9	Line Recipe Error	29	Local user interface present	7	Wait
		30	1 hour toggle bit	8	Start OK (start will start for go to Wait)
		31	5 hour toggle bit	9	Started
				10	Unit in Line Mode
Bit#	UnitCommands (Unit Write Block)	Bit#	UnitAlarmStatus (Unit Read Block)	11	Mass Mode (Gravimetric) Status
0	Acknowledge Alarm(s)	1	Internal Channel Failure	12	Calibrating
1	Clear Alarm(s)	2	Weight Failure	13	Emptying
2	Stop	3	Motor Fail	14	Screw Filling
3	Start & Clear Alarms	4	Motor Drive Aux Interlock	15	Pert
6	Clear Totalizer	5	Start Ignored	16	Refill Output
7	Gravimetric Mode	6	Massflow High	17	Mass Mode (Gravimetric) Setting
8	Volumetric Mode	7	Massflow Low	18	Alarm Shutdown Input
10	Calibrate Feeder	8	Drive Command High	19	Alarm Shutdown Output
11	Empty Feeder	9	Drive Command Low	20	Hard Alarm
12	Tare Feeder	10	Feed Factor Alarm	21	Soft Alarm
13	Refill Feeder	11	Refill Timeout	22	Warning
21	Repoll	12	Scale Overrange	23	Alarm Relay (Opposite Hard Alarm)
22	Reconfigure	13	Scale Underrange	25	Loading
25	Screw Fill	14	Setpoint Limit	26	Load enable/disable input
30	Clear FeedFactor Array (Internal Use)	15	Low Gain		
31	Recalculate FeedFactor Array (Internal Use)	16	Weight Limit		
		17	Reset While Running		
		18	Motor Overheat		
		19	Motor Overload		
		20	Loader Empty		

System Read Block (64 bytes starting at byte 0)

Parameter	DataType	Offset	Bytes
HeartBeat	int-16 bit	0	0-1
DatabaseIndex	int-16 bit	2	2-3
ParameterMsg	int-16 bit	4	4-5
LineReadyToRun	int-16 bit	6	6-7
DatabaseValue	float	8	8-11
ParameterMin	float	12	12-15
ParameterMax	float	16	16-19
LineSetpoint	float	20	20-23
LineMassflow	float	24	24-27
LineTotalizer	float	28	28-31
LineMaxSetpoint	float	32	32-35
LineUnitPercentages	float	36	36-39
LineAlarmStatus	int-32-bit	40	40-43
LineProcessStatus	int-32-bit	44	44-47
SystemAlarmStatus	int-32-bit	48	48-51

System Write Block (64 bytes starting at byte 0)

Parameter	DataType	Offset	Bytes
AlarmDelay	int-16 bit	0	0-1
AlarmStartupDelay	int-16 bit	2	2-3
DatabaseIndex	int-16 bit	4	4-5
spare	int-16 bit	6	6-7
LineCommands	int-32 bit	8	8-11
DatabaseValue	float	12	12-15
LineSetpoint	float	16	16-19
LineMaxSetpoint	float	20	20-23
LineTotalizer	float	24	24-27

Unit Read Blocks (64 bytes/unit starting at byte 64)

		Unit #:	1	2	3	4	5	6	7	8
Parameter	DataType	Offset	Bytes	Bytes	Bytes	Bytes	Bytes	Bytes	Bytes	Bytes
FdrCtrlMode	int-16 bit	0	64-65	128-129	192-193	256-257	320-321	384-385	448-449	512-513
RefillEna	int-16 bit	2	66-67	130-131	194-195	258-259	322-323	386-387	450-451	514-515
MaximumFlow	float	4	68-71	132-135	196-199	260-263	324-327	388-391	452-455	516-519
Setpoint	float	8	72-75	136-139	200-203	264-267	328-331	392-395	456-459	520-523
Massflow	float	12	76-79	140-143	204-207	268-271	332-335	396-399	460-463	524-527
Totalizer	float	16	80-83	144-147	208-211	272-275	336-339	400-403	464-467	528-531
DriveCommand	float	20	84-87	148-151	212-215	276-279	340-343	404-407	468-471	532-535
MotorSpeed	float	24	88-91	152-155	216-219	280-283	344-347	408-411	472-475	536-539
AverageFeedFactor	float	28	92-95	156-159	220-223	284-287	348-351	412-415	476-479	540-543
NetWeight	float	32	96-99	160-163	224-227	288-291	352-355	416-419	480-483	544-547
RefillLevelMax	float	36	100-103	164-167	228-231	292-295	356-359	420-423	484-487	548-551
RefillLevelMin	float	40	104-107	168-171	232-235	296-299	360-363	424-427	488-491	552-555
PertValue	float	44	108-111	172-175	236-239	300-303	364-367	428-431	492-495	556-559
SetpointRatio	float	48	112-115	176-179	240-243	304-307	368-371	432-435	496-499	560-563
MDULoad	float	52	116-119	180-183	244-247	308-311	372-375	436-439	500-503	564-567
UnitAlarmStatus	int-32 bit	56	120-123	184-187	248-251	312-315	376-379	440-443	504-507	568-571
UnitProcessStatus	int-32 bit	60	124-127	188-191	252-255	316-319	380-383	444-447	508-511	572-575

Unit Write Blocks (64 bytes/unit starting at byte 64)

		Unit #:	1	2	3	4	5	6	7	8
Parameter	DataType	Offset	Bytes	Bytes	Bytes	Bytes	Bytes	Bytes	Bytes	Bytes
FdrCtrlMode	int-16 bit	0	64-65	128-129	192-193	256-257	320-321	384-385	448-449	512-513
RefillEna	int-16 bit	2	66-67	130-131	194-195	258-259	322-323	386-387	450-451	514-515
UnitCommands	int-32 bit	4	68-71	132-135	196-199	260-263	324-327	388-391	452-455	516-519
MaximumFlow	float	8	72-75	136-139	200-203	264-267	328-331	392-395	456-459	520-523
Setpoint	float	12	76-79	140-143	204-207	268-271	332-335	396-399	460-463	524-527
Totalizer	float	16	80-83	144-147	208-211	272-275	336-339	400-403	464-467	528-531
InitialFeedFactor	float	20	84-87	148-151	212-215	276-279	340-343	404-407	468-471	532-535
RefillLevelMax	float	24	88-91	152-155	216-219	280-283	344-347	408-411	472-475	536-539
RefillLevelMin	float	28	92-95	156-159	220-223	284-287	348-351	412-415	476-479	540-543
SetpointRatio	float	32	96-99	160-163	224-227	288-291	352-355	416-419	480-483	544-547