

Application

Various SmartLink Interface boards are available to allow a plant computer system or PLC (Programmable Logic Controller) to communicate directly with the K-Tron Control Module (KCM) via various communication protocols. All connectivity electronics mount inside the KCM 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.

Configuration

Communication settings as well as data register organization and machine control functions are configured using a Windows based PC program (SmartConfig). The resulting configuration file (*.kgr) is then uploaded to the KCM.

The KCM comes with standard "built-in" configuration kgr file with basic register mapping to allow quick access to system parameters and control functions. *(see other side)*

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



Interface Boards

		Device Interface	Max. Transfer Rate	No. of Nodes	Connection
	Allen Bradley DF1 (CIF) Slave	RS485 2-/4-wire (Multidrop) or RS232 (point-to-point)	19,200 bit/s	31	screw terminals
	Modbus RTU Slave	RS485 2-/4-wire (Multidrop) or RS232 (point-to-point)	38,400 bit/s	31 1	screw terminals
	Modbus+ Slave	RS485 2 wire	1 Mbit/s	31	D-Sub 9 pin female
	Modbus/TCP Server	Ethernet	100 Mbit/s	depends on network configuration	RJ-45
	Ethernet/IP (Industrial Protocol) Server	Ethernet	100 Mbit/s	depends on network configuration	RJ-45
	Profibus DP Slave	RS485 2 wire	12 Mbit/s	126	D-Sub 9 pin female
	DeviceNet Slave	RS485 2 wire	500 kB/s	64	screw terminals

Quick-Start Configuration

The KCM configuration can be extracted as a KGR file and modified as required. The built-in configuration is shown below. The network address number is the same as the feeder number.

Byte #	Register #	LWF	WBF	PID	SFM	LWB
0	40001	Maximum Flow	Maximum Flow	Maximum Flow	Maximum Flow	MaxBatSize
4	40003	Setpoint	Setpoint	Setpoint	Setpoint	BatSize
8	40005	Totalizer	Totalizer	Totalizer	Totalizer	Totalizer
12	40007	Massflow	Massflow	Massflow	Massflow	BatCompMass
16	40009	DriveCommand	DriveCommand	DriveCommand	DriveCommand	DriveCommand
20	40011	MotorSpeed	MotorSpeed	MotorSpeed	MotorSpeed	MotorSpeed
24	40013	AveFeedFactor	NominalBeltLoad	AveFeedFactor	ChuteNetWeight	AveFeedFactor
28	40015	NetWeight	BeltLoad	PropContribFreq	DivertNetWeight	Netweight
32	40017	RefillLevelMax	BeltSpeed	IntegContribFreq	ChuteGross Weight	RefillLevelMax
36	40019	RefillLevelMin	BeltSlipValue	DerivContribFreq	DivertGross Weight	RefillLevelMin
40	40021			ProcessVariable		BatTime
44	40023					FastDC
48	40025					DribDC
52	40027	CondensedProc Status	CondensedProc Status	CondensedProc Status	CondensedProc Status	CondensedProc Status
56	40029	CondensedAlrm Status	CondensedAlrm Status	CondensedAlrm Status	CondensedAlrm Status	CondensedAlrm Status
60	40031	Heartbeat	Heartbeat	Heartbeat	Heartbeat	Heartbeat
62	41025	RefillEnaDisa			BypassValve	RefillEnaDisa
64	41026	Command bits	Command bits	Command bits	Command bits	Command bits
66	41027	MaximumFlow	MaximumFlow	MaximumFlow	MaximumFlow	MaxBatSise
70	41029	SetPoint	SetPoint	SetPoint	SetPoint	BatSize
74	41031	InitFeedFactor	NominalBeltLoad	InitFeedFactor	BypassInterval	InitFeedFactor
78	41033	RefillLevelMax	PrefeedDCSpan	OverallSpan	OverallSpan	RefillLevelMax
82	41035	RefillLevelMin	BeltSlipAlrmLim	PropGain	ChuteWeight Span	RefillLevelMin
86	41037	ScaleSpan	ScaleSpan	DerivTime	DivertWeight Span	ScaleSpan
90	41039			ProcessVariable		BatTime
94	41041					FastDC
98	41043					DribDC

Command bits	0	1	2	3	4	5	6	7
	CALA	CALC	CSPA	CSPC	CSTC	CTOC	CMAM	CVOM
Description	Alarm Ack	Alarm Clear	Stop & Keep Alarm	Stop & Clr Alarm	Start & Clr Alarm	Clear Totalizer	Set Mass Mode	Set Vol. Mode

Command bits	8	9	10	11	12	13	14	15
	CTAR	CTR2	CCFF	CMRD	CMRU	CPAS	CTON	CTOF
Description	Set Tare	Start Dynamic Tare	Start FF Calib	PID Ramp Down	PID Ramp Up	Pause Batch	Enable Totalizer	Disable Totalizer

All bit commands are rising edge triggered.

- Bytes 0 – 48 = Read Float
- Bytes 52 - 56 = Read 2 Words Integer
- Bytes 60 = Read 1 Word Integer
- Bytes 62 - 64 = Write 1 Word Integer
- Bytes 66 - 98 = Write Float