



Material Accumulation Management Conveyor Machine

Example Architecture and Bill of Materials

Designing a Material Accumulation Management Conveyor Machine

Example architecture and bill of materials

This type of conveyor would be suitable in situations where a design would require:

Simple automation solution managing material transportation only
modular conveyor sections for flexible mechanical design and integration
Material accumulation function management
Energy saving with on demand conveyor operation.

This economic solution improves efficiency of warehouse transportation system. It is simple and robust with small drives and simple electromechanical components. The material detection is done by sensors installed on each conveyor section.

In this example the motors selected for the different conveyor sections are respectively 0,37 kW, 0,75 kW & 1,5 kW power.

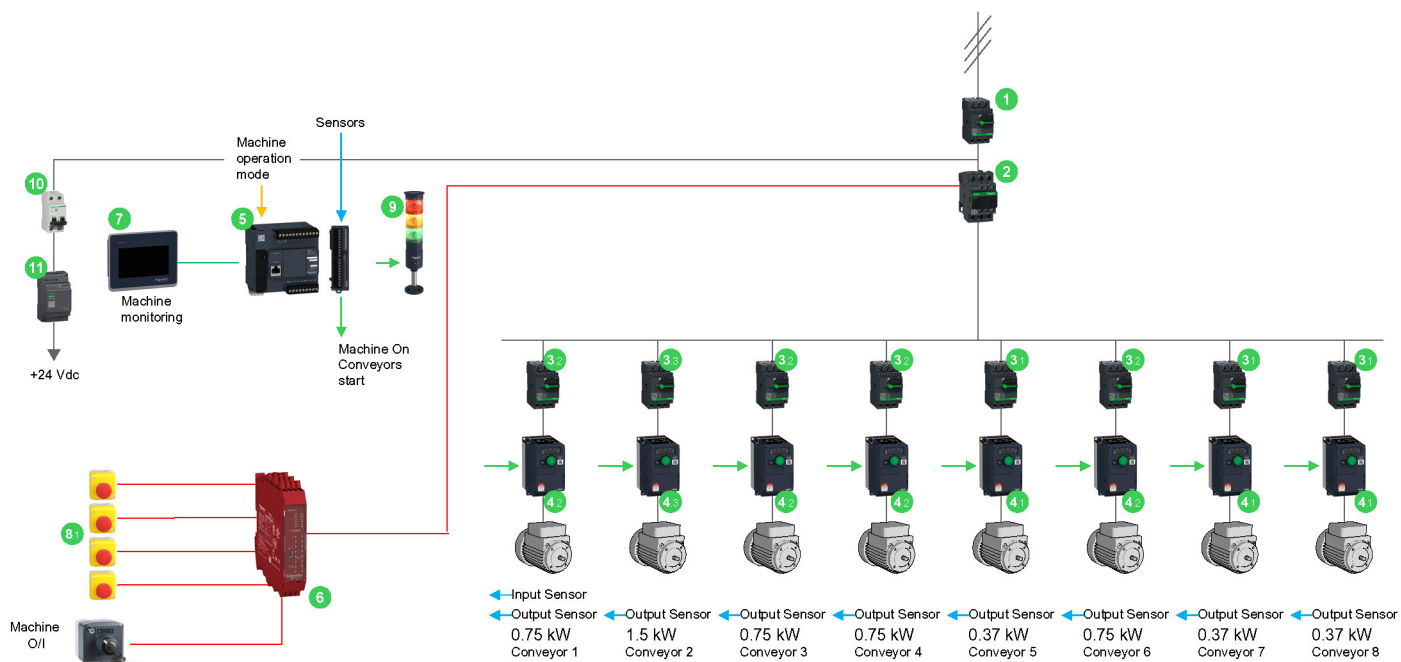
Key differentiators of material accumulation management conveyors:

- Simple and economic automation solution managing material transportation only
- Modular conveyor sections for flexible mechanical design and integration
- Easy installation and on-site commissioning
- Conveyor speed can be selected according to the number of operators and incoming material flow
- Easy maintenance requiring only basic electrical skills reducing maintenance costs and machine downtime

Why choose Schneider Electric for material accumulation management conveyors

- Robust and validated automation architecture using multi standard components available worldwide
- Improve energy efficiency of the warehouse conveyor systems with drive technology for flexible “on demand” operation flow management and optimized material accumulation or “buffer zone” on conveyor
- Maximum motor protection for minimum machine downtime
- Simple diagnostic with direct I/Os led visualization on dedicated Safety module allowing Cat 3 Emergency Stop loop monitoring.
- Optional HMI for process visualization and advanced diagnostics
- Incomparable long lifespan, thanks to robust and reliable Schneider Electric parts well recognized inside the conveying tough application since more than 30 years.

Designing a stand-alone conveyor: Material accumulation management machine



Offer list – Material accumulation machine	#	Products	Descriptions	Qty
TeSys Power GV2L - Motor circuit breaker	①	GV2L22	3 pole AC-3, 25A, magnetic motor circuit breaker, rotary handle	1
TeSys Deca - LC1D Contactor	②	LC1D25E7	3 pole AC-3 440V AC, 25A contactor, 1NO + 1NC auxiliary contacts, 48V AC coil	1
TeSys Power GV2L - Motor circuit breaker	③.1	GV2L07	3 pole AC-3, 2.5A - magnetic motor circuit breaker, rotary handle	3
	③.2	GV2L08	3 pole AC-3, 4A - magnetic motor circuit breaker, rotary handle	4
	③.3	GV2L14	3 pole AC-3, 10A - magnetic motor circuit breaker, rotary handle	1
Altivar ATV320 - variable speed drive	④.1	ATV320U04N4C	0.37kW for heavy duty – 400V AC, 3 phases, compact - Class C2 EMC filter integrated	3
	④.2	ATV320U07N4C	0.75kW for heavy duty – 400V AC, 3 phases, compact - Class C2 EMC filter integrated	4
	④.3	ATV320U15N4C	1.5kW for heavy duty – 400V AC, 3 phases, compact - Class C2 EMC filter integrated	1
Modicon M221 - Logic Controller	⑤	TM221C40R	Logic controller M221, 40 I/O, transistor PNP, Ethernet and serial line ports	1
		TM3DI16	Modicon TM3 - 16 inputs (screw) 24Vdc	1
		TM3DQ16T	Modicon TM3 - 16 outputs transistor PNP (screw)	1
Modicon MCM - Safety controller	⑥	XPSMCMC10804G	8 inputs 4 outputs, monitor expansion modules, spring, allowing conformity to Ple and SIL3	1
Harmony ST6 - Touch screen panel	⑦	HMIST6200	4"W display, 1COM, 1Ethernet, USB host & device, 24 VDC	1
Harmony XALK - Control station, plastic, yellow cover	⑧.1	XALK178E	Control station with 1 emergency switching off function - 1 NO + 1 NC	4
Harmony XALD - Control station, plastic, dark grey cover	⑧.2	XALD144	Control station with 1 selector key switch Ø22, 1 NO, legend holder marked O-I	1
Harmony XVU - Tower light	⑨	XVUZ400	Fixing plate with 400 mm aluminium pole for modular tower lights, black, Ø60	1
		XVUC21B	Base unit with top cover for modular tower lights, black, Ø60, 24 V AC/DC	1
		XVUC9S	Audible unit, black, Ø60, buzzer, 24 V AC/DC	1
		XVUC24	Illuminated LED unit for modular tower lights, red, Ø60, steady, IP65, 24 V AC/DC	1
		XVUC25	Illuminated LED unit for modular tower lights, orange, Ø60, steady, IP65, 24 V AC/DC	1
		XVUC23	Illuminated LED unit for modular tower lights, green, Ø60, steady, IP65, 24 V AC/DC	1
Multi9 C60N	⑩	M9F12202	2 pole - 2A - courbe D - 415V AC, 10kA miniature circuit breaker	1
Modicon ABL - Power supply	⑪	ABLXXXX	Single phase and 3-phase power supplies 100 V to 500 V - 7 W to 960 W	1