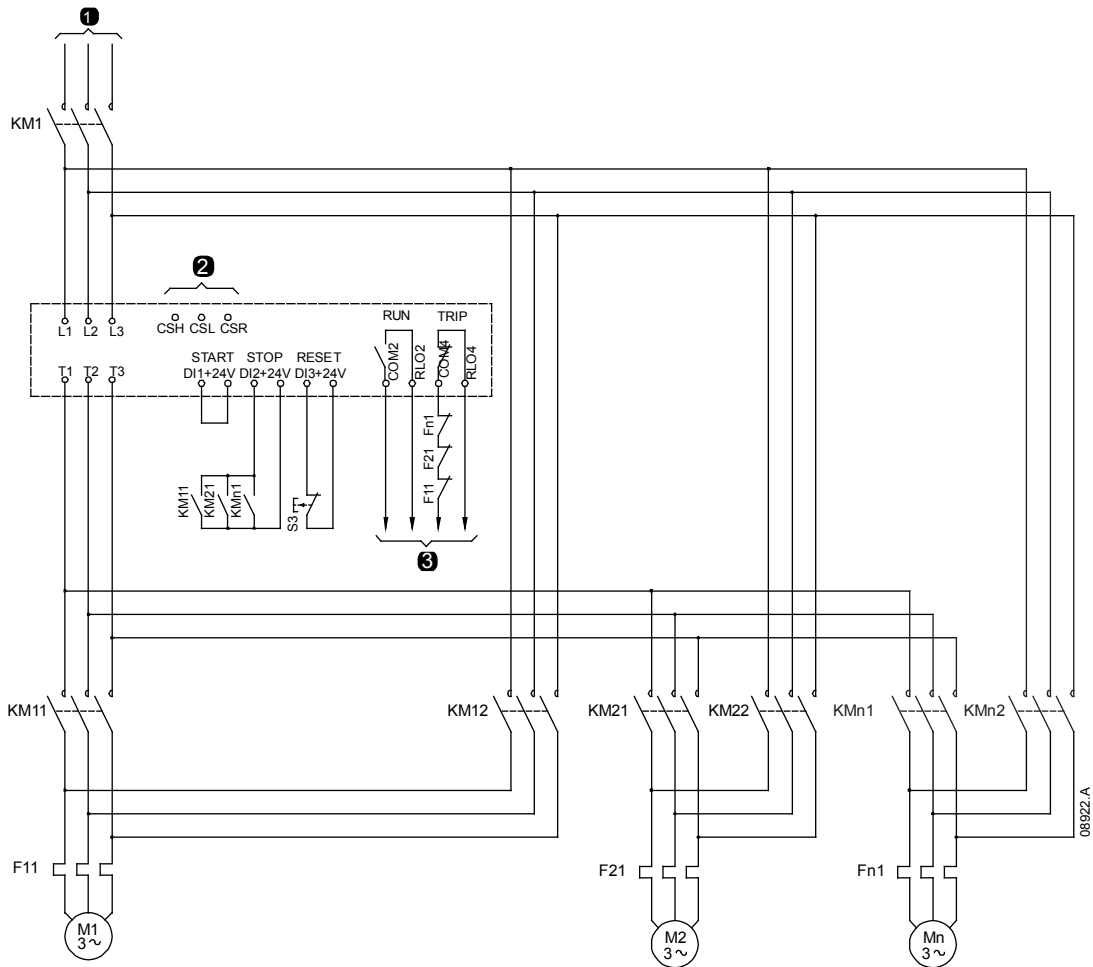


1 Description

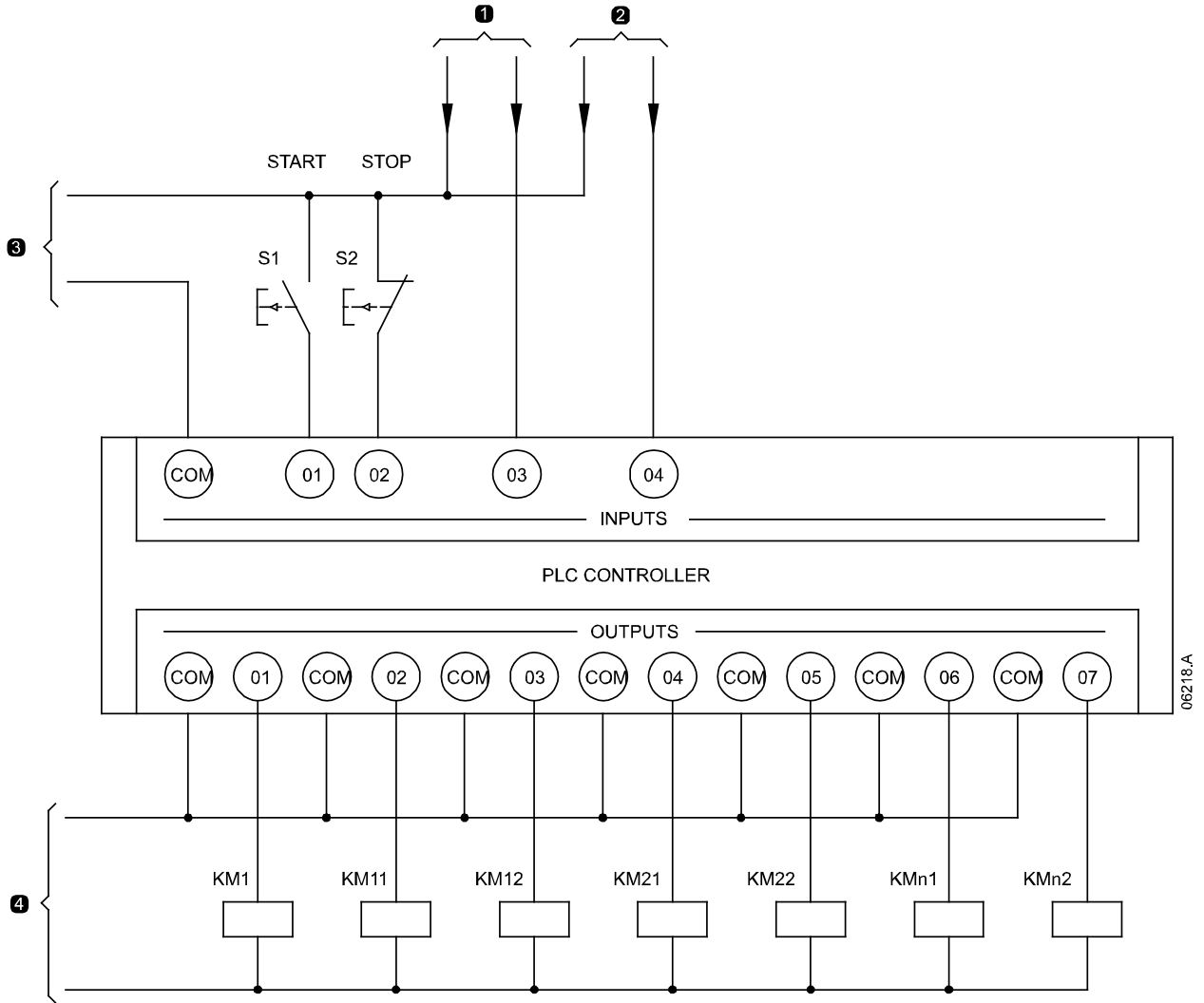
The Digistart D3 can be used for installations requiring sequential starting of identical motors. Master control of the Digistart D3 and external contactors is achieved using a PLC. The PLC input/output logic needs to follow the sequence detailed in this application note. Once this system is installed, the sequence of motor starting can only be altered by changing the PLC program.

2 Power Wiring



1	Mains supply
2	Control supply
3	Signals to PLC output
n	Total number of motors

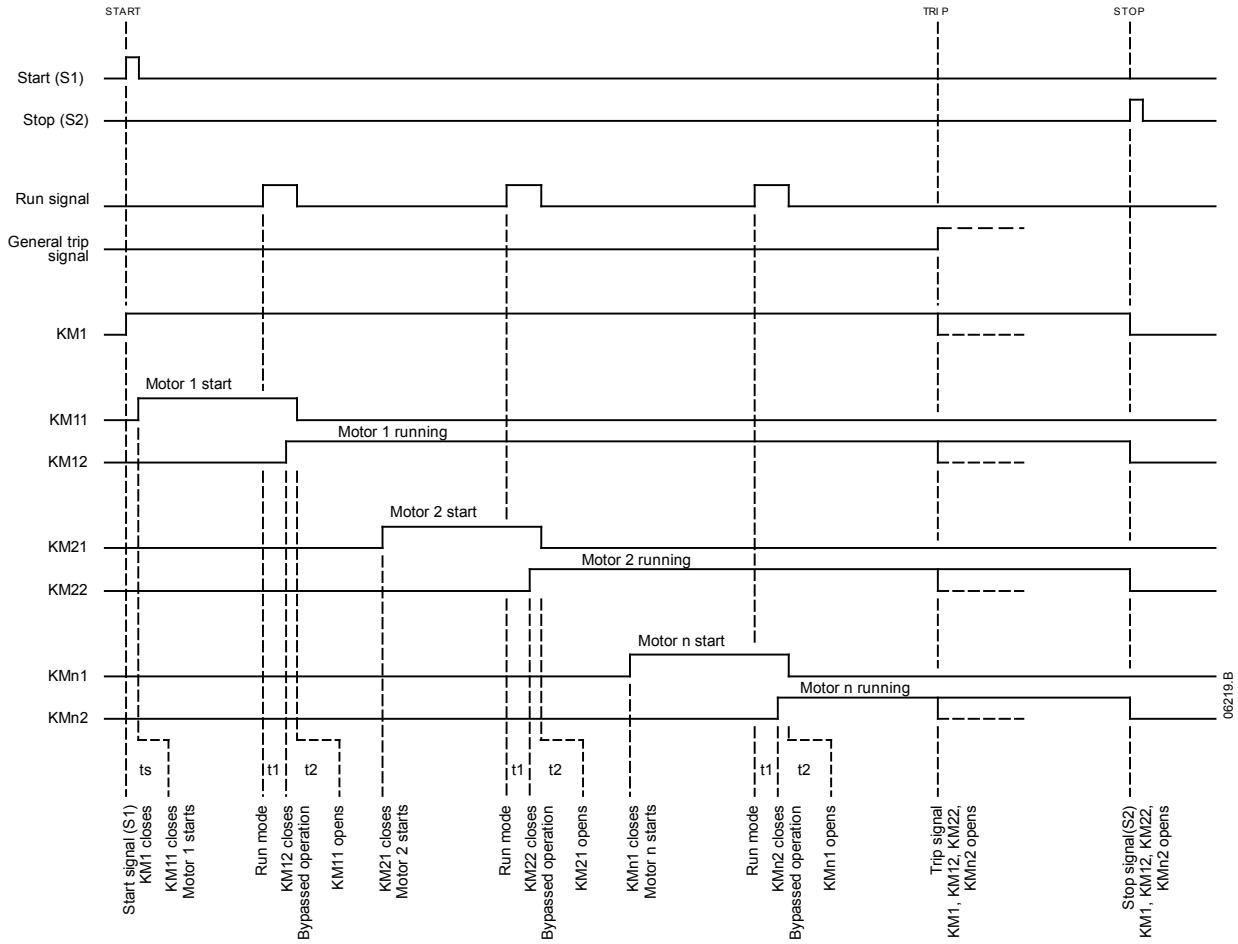
3 PLC Control Wiring



1	Soft starter run signal
2	General trip signal
3	PLC input supply
4	PLC output supply
n	Total number of motors
S1	Start pushbutton
S2	Stop pushbutton

KM1	Main contactor
KM11	Motor 1 isolator
KM12	Motor 1 bypass
KM21	Motor 2 isolator
KM22	Motor 2 bypass
KMn1	Motor n isolator
KMn2	Motor n bypass

4 PLC Timing Chart



06219.B

KM1	Main contactor
KM11	Motor 1 isolator
KM12	Motor 1 bypass
KM21	Motor 2 isolator
KM22	Motor 2 bypass
KMn1	Motor n isolator

KMn2	Motor n bypass
S1	Start pushbutton
S2	Stop pushbutton
ts	150 milliseconds
t1	2 second time delay
t2	1 second time delay

5 Key Considerations

- This method should only be used for in-line (three-wire) motor connection.
- Motors must be identical in size (same kW/FLC).
- When choosing an Digistart D3, the start time rating must be the sum of all individual motor start-up times.
- Only a coast-to-stop profile can be used. Do not use the Digistart D3 TVR stop, Adaptive Deceleration Control stop or Brake functions.
- The Digistart D3 uses two-wire control in Remote mode. Start/stop signals from the motor isolator contactor auxiliaries (normally open) are paralleled together and connected into the Digistart D3 terminals DI2, +24V.
- To stabilise operation, it is recommended to set the following protections to Warn and Log:
 - current imbalance
 - undercurrent
- The PLC must have the following minimum input/output capacity:
 - 4 digital inputs
 - $(n \times 2) + 1$ relay outputs, where n = number of motors.