Innovation in soft start technology

VMX-AGY-071

EXPANSION MODULE

INSTALLATION GUIDE

VMX-AGY-071 Installation Guide

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Introduction

The expansion module (VMX-AGY-071) can be used to provide extra I/O to our current range of VMX-agility™ motor controllers. The module is self-powered, therefore there is no need for an additional supply to power it.
The expansion module provides the following additional I/O:

- 2 x Digital Inputs.
- 2 x Digital Outputs.
- 1 x PTC Thermistor Input.

Installation

The expansion module (VMX-AGY-071) is DIN rail mounted, thus allowing for easy installation.
The ribbon cable that exits out from the top of the expansion module connects into adaptor module as shown below:
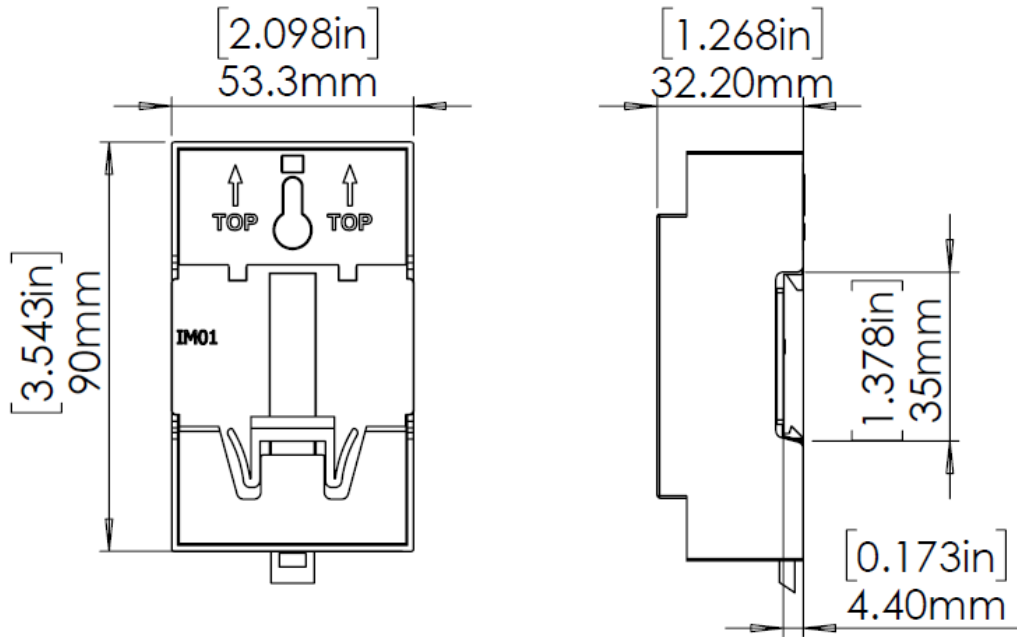

The adaptor module then connects to the VMX-agility™ edge connector as shown below:

Fit screw and nylon washer (supplied). DO NOT overtighten (Max 40 cNm)

* VMX-AGY-071 is only to be used with VMX-agility™ models
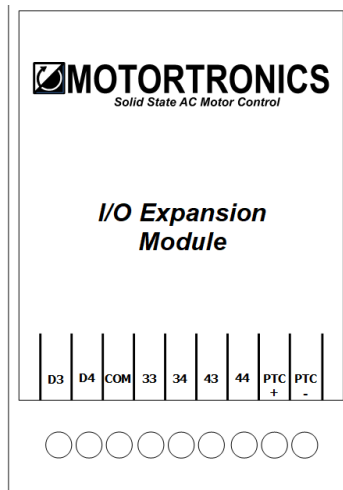
Dimensions of VMX-AGY-071:

Weight: 0.14kg (0.31lb)

General Specification

Rated insulation voltage	U_i	230Vac r.m.s	
Rated impulse withstand voltage	U_{imp}	4 kV	
IP code		IP20	
Overvoltage Category / Pollution degree		III / 3	

Control circuit	Programmable opto-isolated inputs	D3, D4	Must be supplied by class 2, limited voltage current, or Protected with a UL248 listed fuse rated Max 4A
	Common input, marking	COM	
	Kind of current, rated frequency	'dc' or 'ac, 50 - 60Hz ± 5Hz'	
	Rated voltage U_c	'24Vdc' or '110V to 230Vac'	
Auxiliary Circuit	Form A – Single gap make -contact (normally open)	'33, 44' and '43,44'	
	Utilisation category, voltage rating, current rating	Resistive load, 250Vac, 2A.	
		250Vac, 0.75A (AC-15 / C300)	
PTC Circuit	Trip Level	3.6kΩ	
	Reset Level	1.6kΩ	

Wire Sizes and Torques

| Terminal	Wire/Busbar Size		Torque	
	Metric	**Imperial**	**Nm**	**Ib-in**
Control Terminals	0.2–1.5mm²	24-16AWG	0.68	6,0

Connections

## Control Terminal Functions

Terminal	Description	Function Selectable	Parameter options (When used with VMX-agility™)	Note
D3	Digital Input A	Yes (Via Cntrl Funct)	0- Three Wire *(D3 Start / D4 Stop)* 1- Two Wire *(D3 Start, Stop and Reset / D4 No function)* 2- DI-Prog Reset *(D3 Start, Stop)* 3- DI-Prog Hold*(D3 Start, Stop and Reset)* 4- DI-Prog Enable *(D3 Start, Stop and Reset)* 5- DI-Prog Fire *(D3 Start, Stop and Reset)*	
D4	Digital Input B			
COM	Digital Inputs Common	No		
33/34	Digital Output A	Yes	0- End of Start (At Speed) 1- Fault 2- Run 3- Pending 4- Exceeded 5- Breaker 6- Ph /SCR DEFAULT - Run	
43/44	Digital Output B	Yes	0- End of Start 1- Fault 2- Run 3- Pending (Auto Reset) 4- Exceeded (Auto Reset) 5- Breaker 6- Ph /SCR DEFAULT – End of Start	
PTC+	PTC thermistor +	Yes	0- ON *(The Unit will trip if the motor thermistor exceeds its response temperature or the PTC input is open circuit)* 1- OFF *(The Unit will continue to operate regardless of the PTC value).* DEFAULT - OFF	#3
PTC-	PTC thermistor -			

#3 – PTC: ***A single PTC motor thermistor or set of PTC motor thermistors can be connected to the PTC terminals.***

Three wire control using VMX-AGY-071:

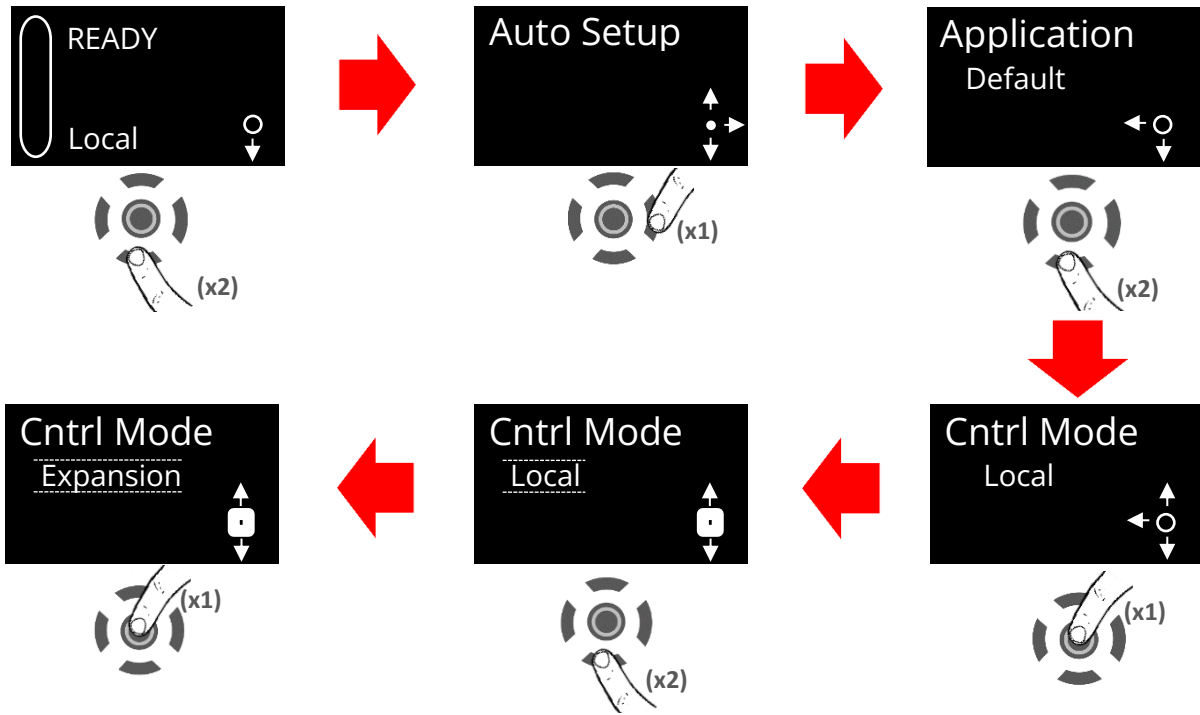K1 – Main three phase supply contactor.
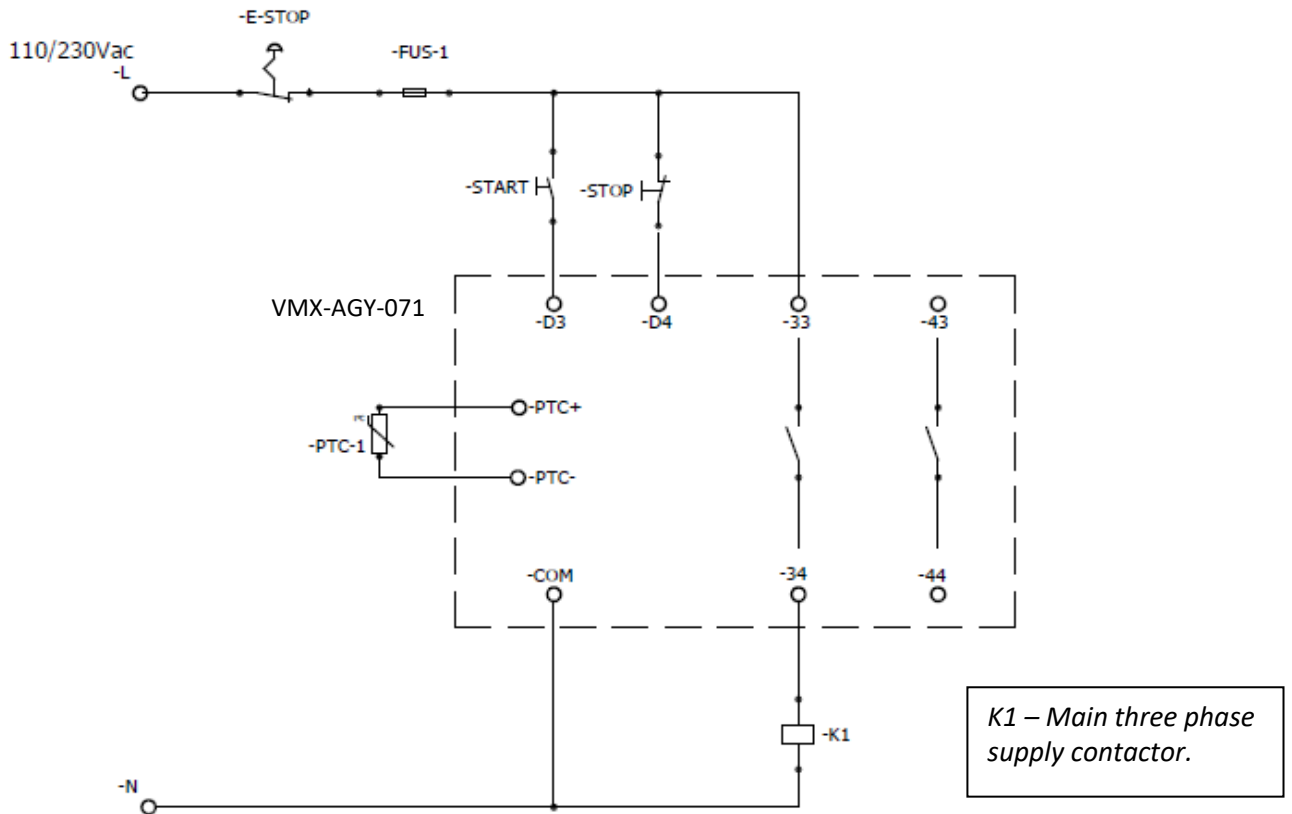
Two wire control using VMX-AGY-071:
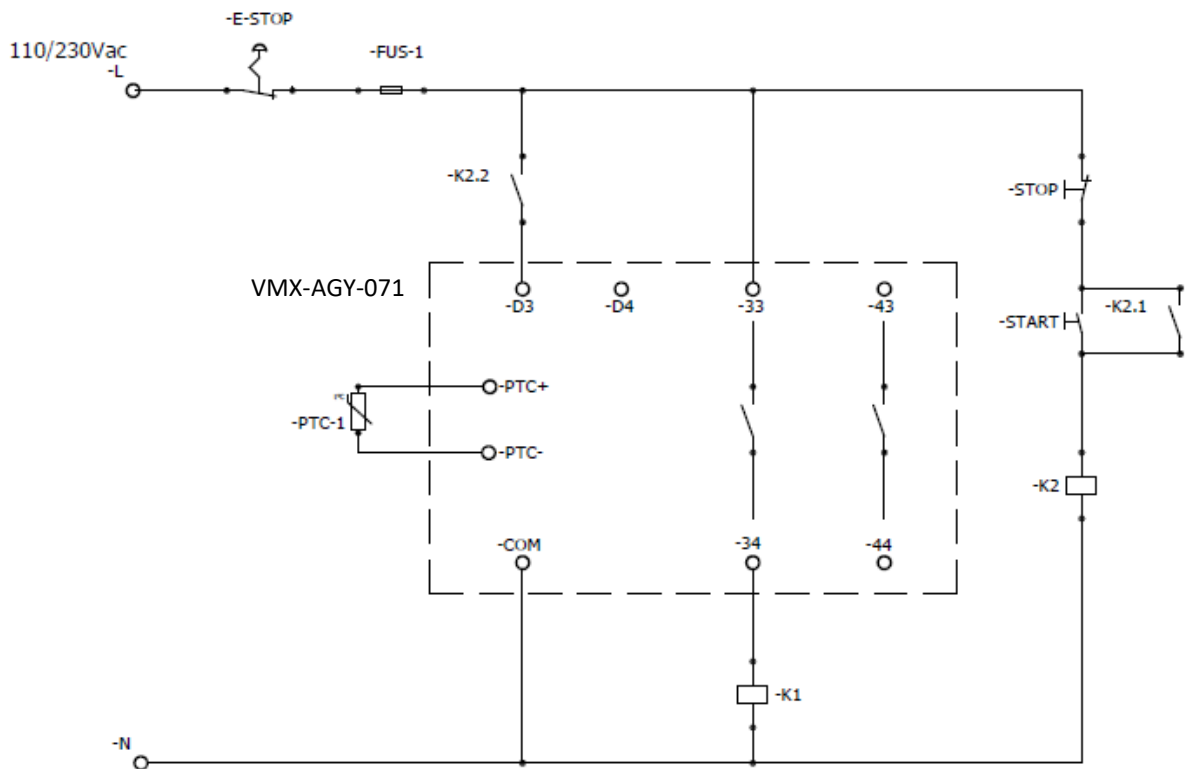
Programming (For use with VMX-agility™ models)

Digital input Programming:

Setting the control Mode to "Expansion":

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Setting the control inputs to 24VDC (Off =240V / On = 24VDC):
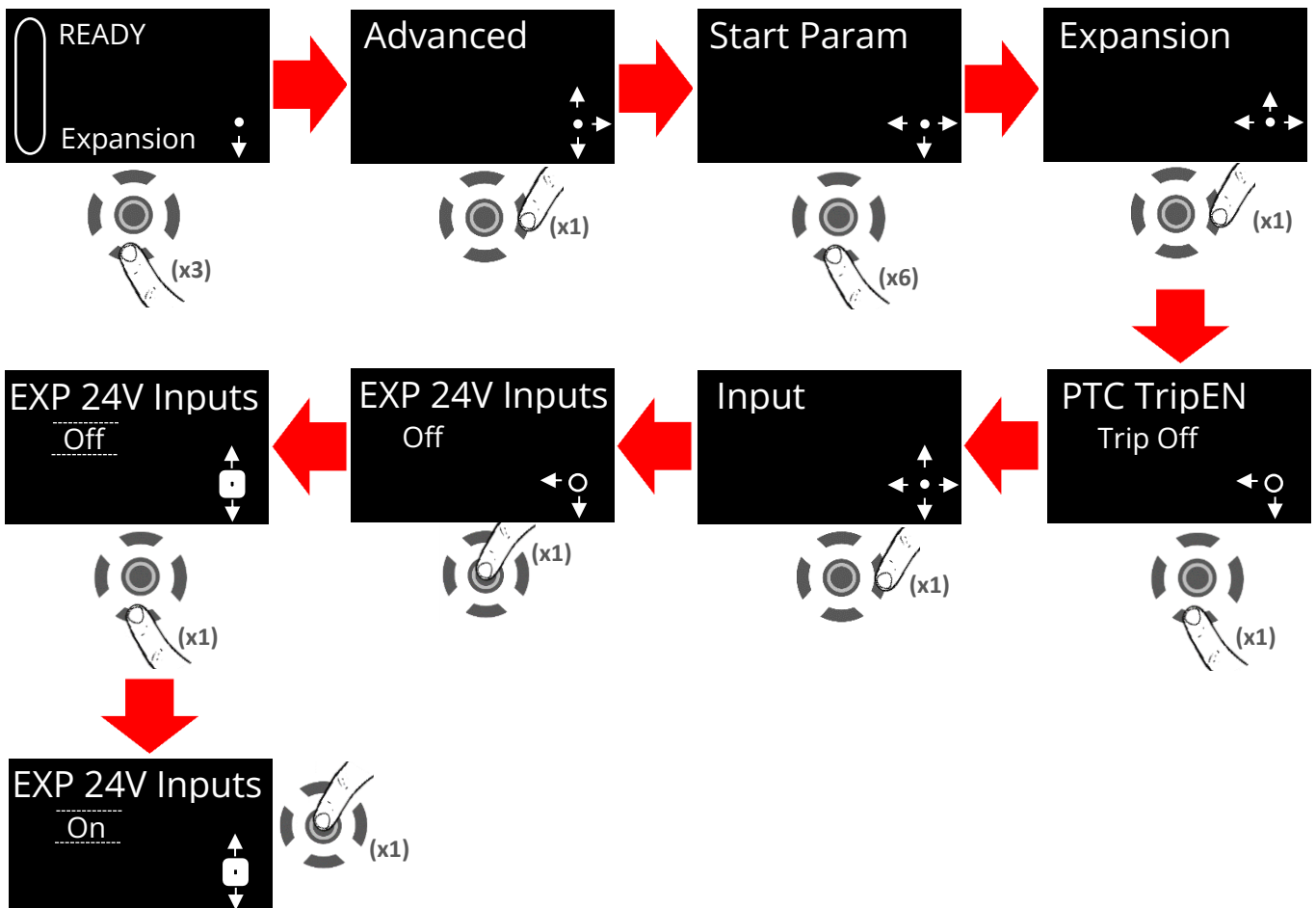
Selecting the control input function:

READY Expansion	→	Advanced	→	Start Param	→	Expansion
(x3)		(x1)		(x6)		(x1)

Cntrl Funct Three Wire	←	EXP 24V Inputs Off	←	Input	←	PTC TripEN Trip Off
(x1)		(x1)		(x1)		(x1)

Cntrl Funct

Three Wire

Cntrl Funct

Two Wire

Cntrl Funct

DI-Prog Reset

Cntrl Funct

DI-Prog Hold

Cntrl Funct

DI-Prog Enable

Cntrl Funct

DI-Prog Fire   (x1)
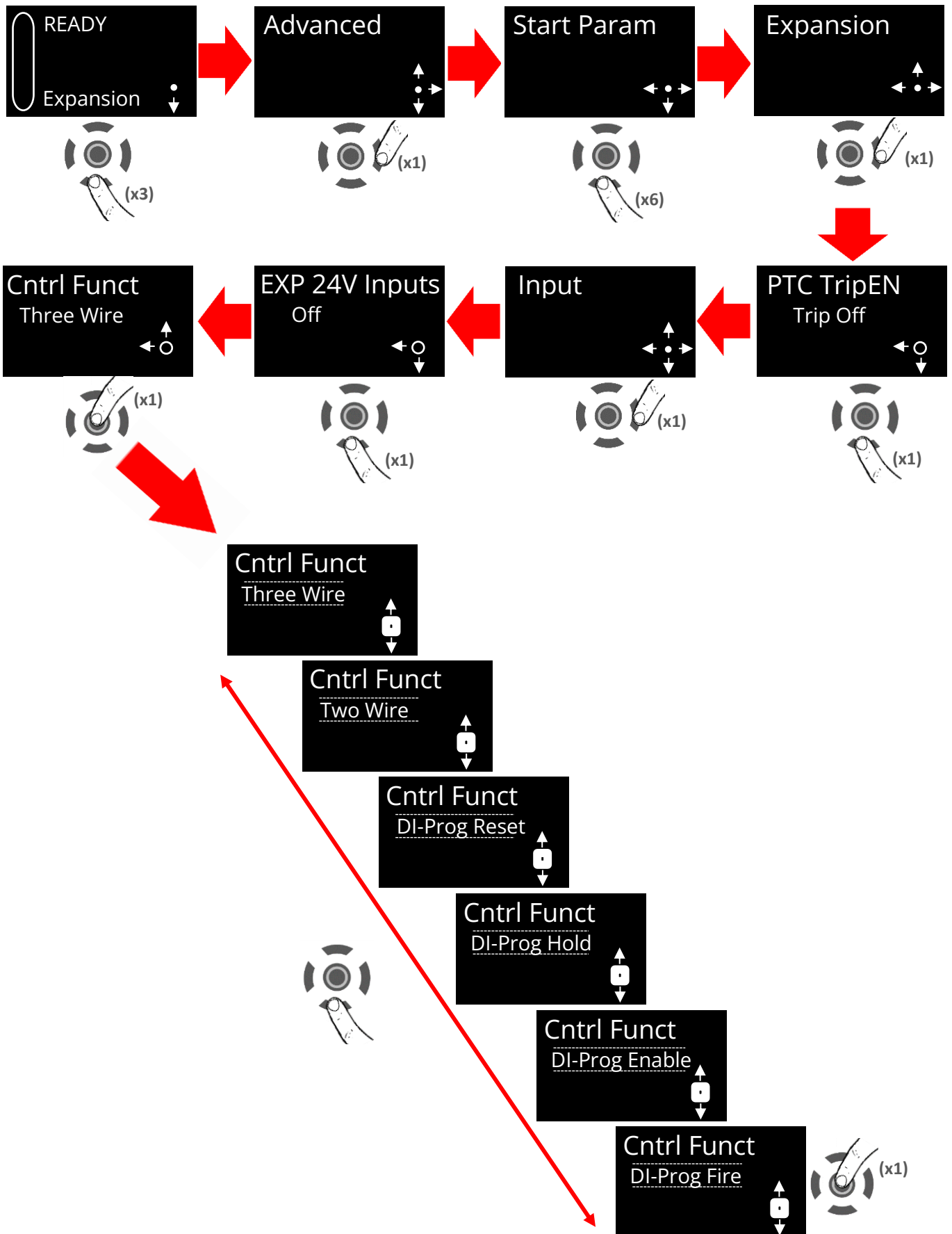
Selecting the Digital Output function:

Navigation flow (left to right, top row):

- READY / Expansion → (x3)
- Advanced → (x1)
- Start Param → (x6)
- Expansion → (x1)

Then down to:

- PTC TripEN / Trip Off → (x2)
- Output → (x1)
- Relay 33 34 / Fault → (x1)
- Relay 33 34 / Fault

Sub-menu options (Relay 33 34):

- Relay 33 34 / Fault
- Relay 33 34 / Run
- Relay 33 34 / Pending
- Relay 33 34 / Exceeded
- Relay 33 34 / Breaker
- Relay 33 34 / PH / SCR
- Relay 33 34 / End Of Start → (x1)
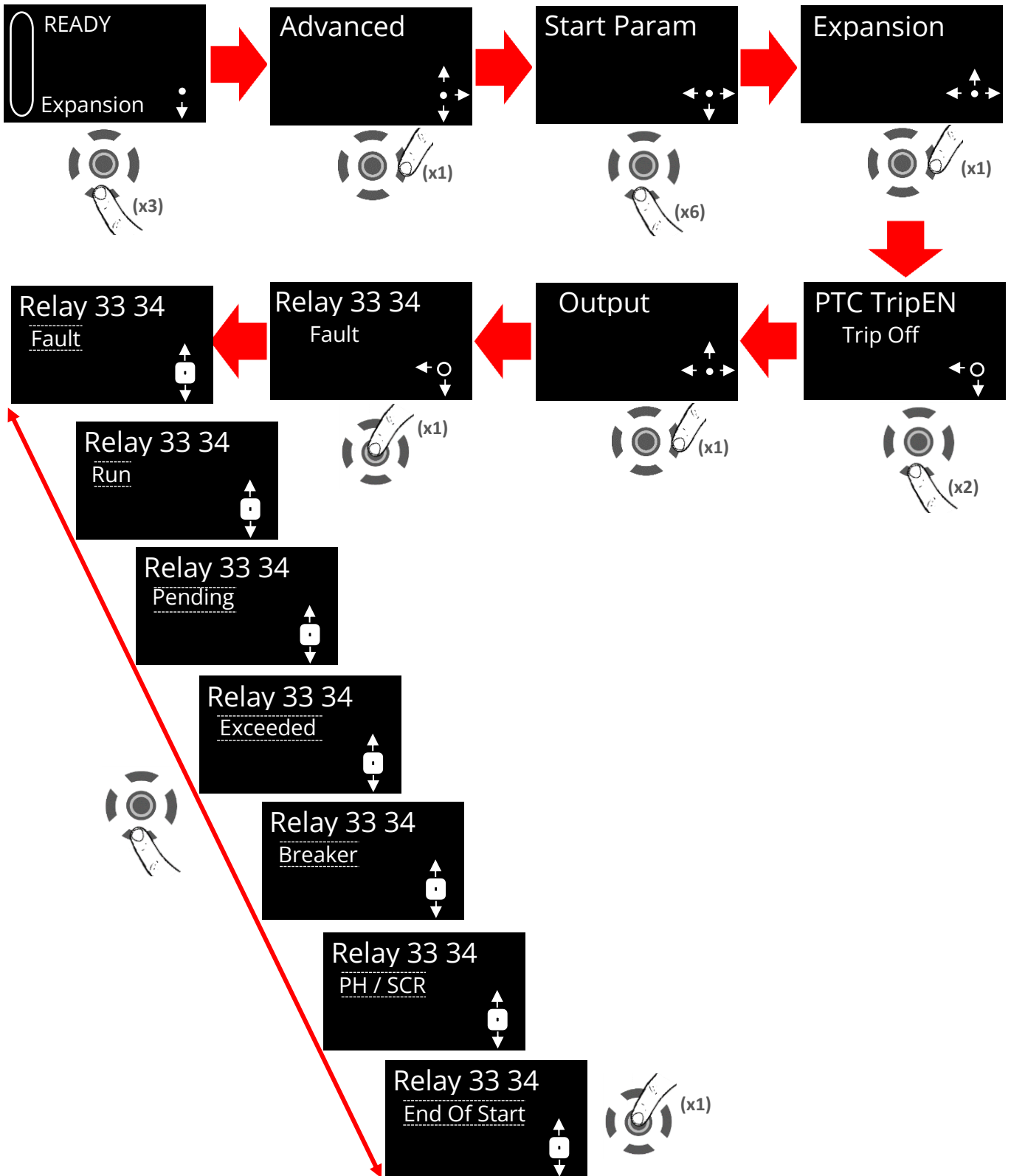
*For Relay 43 44 repeat the above process but on navigate down one when "Relay 33 34" is displayed. The display will then show "Relay 43 44".

Activate the PTC Thermistor Trip:

READY	→	Advanced	→	Start Param	→	Expansion
Expansion						
(x3)		(x1)		(x6)		(x1)

↓

PTC TripEN	←	PTC TripEN	←	PTC TripEN	←	PTC TripEN
Trip On		Trip On		Trip Off		Trip Off
		(x1)		(x1)		(x1)
				(x1)		