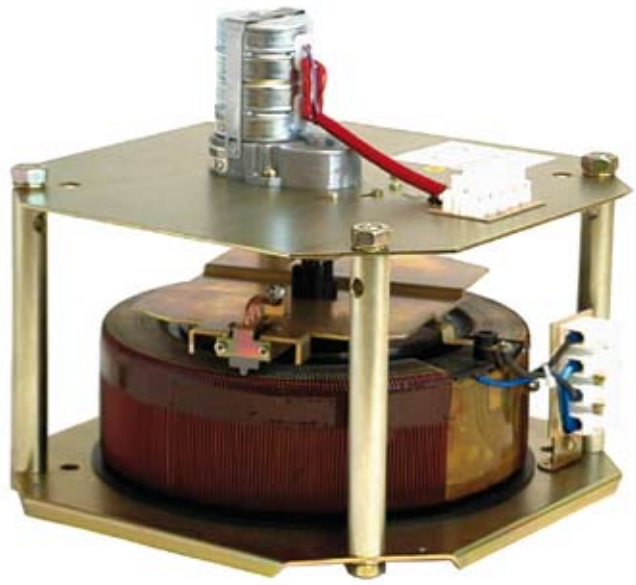


Motor driven Variable Transformers

HSM - single phase, HTM - three phase

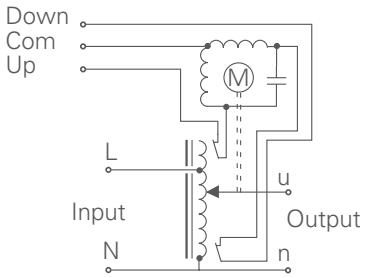
METREL motor-operated units differ from manual types primarily in the means used to rotate the shaft to vary output voltage. A synchronous motor is used to position the slider. The motor is reversible by means of a SPDT switch (not supplied) and operates on 230 V, 50 / 60 Hz. Integrated limit switches prevent overriding the winding edges.

Typical methods for controlling METREL motor-operated units include:

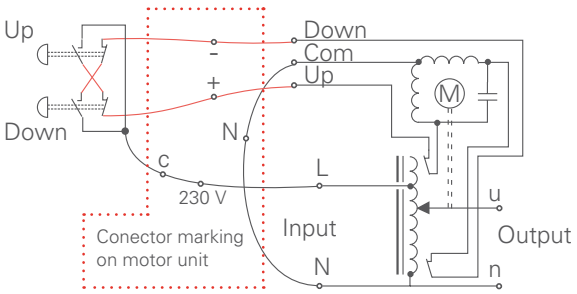
- Manual increase/decrease switch consists of either momentary-contact push-button or lever-type toggle switch.
- Relays and contactors control the increase/decrease power to the motor as a result of low-level signals from external circuitry. Example: photoelectric cells or thermostat signals can provide the input.
- Process control instrumentation can be used for closed-loop, precise control, and more sophisticated circuitry to provide the raise-fall switching for the motor.

Motor operating time refers to the number of seconds for the motor to traverse its full range in one direction. METREL transformers have standard 23 s motor operating time. Other motor operating times are optional.

Variable transformer with motor drive



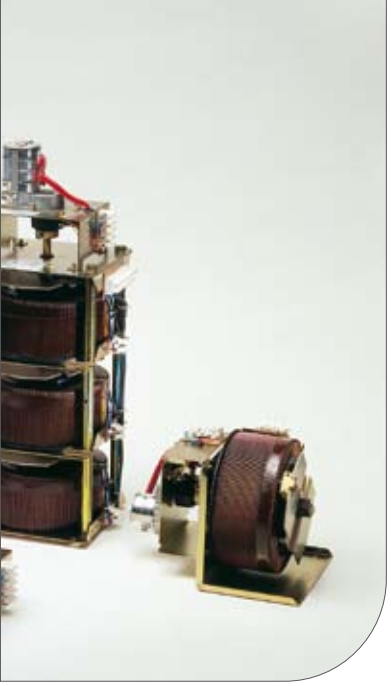
Wiring schematic



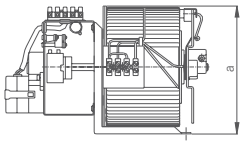
Remote control application princible (230 V motor)

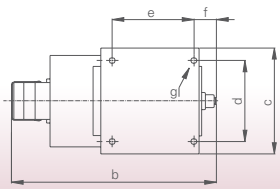
Technical Specification

HSM type (Input voltage 230 V)								HTM type (Input voltage 400 V)		
Output voltage 0 ÷ 230 V			Output voltage 0 ÷ 260 V					Output voltage 0 ÷ 400 V		
Type	Is (A)	P (VA)	Type	Is (A)	P (VA)	Mass (kg)	Model	Type	Is (A)	P (VA)
HSM 230/3	3.0	690	HSM 260/2.5	2.5	650	4.5	M50	HTM 400/3	3.0	2070
HSM 230/4	4.0	920	HSM 260/3	3.0	780	4.5	M50	HTM 400/4	4.0	2760
HSM 230/4.5	4.5	1035	HSM 260/3.5	3.5	910	5.6	M100	HTM 400/4.5	4.5	3105
HSM 230/6	6.0	1380	HSM 260/4.5	4.5	1170	5.6	M100	HTM 400/6	6.0	4140
HSM 230/8	8.0	1840	HSM 260/6.3	6.3	1638	8.0	M200	HTM 400/8	8.0	5520
HSM 230/10	10.0	2300	HSM 260/8	8.0	2080	8.0	M200	HTM 400/10	10.0	6900
HSM 230/12	12.0	2760	HSM 260/10	10.0	2600	10.2	M250	HTM 400/12	12.0	8280
HSM 230/18	18.0	4140	HSM 260/15	15.0	3600	14.3	M300	HTM 400/18	18.0	12420
HSM 230/23	23.0	5290	HSM 260/20	20.0	5200	15.0	M400	HTM 400/23	23.0	15870
HSM 230/32	32.0	7360	HSM 260/30	30.0	7800	21.5	M500	HTM 400/32	32.0	22080



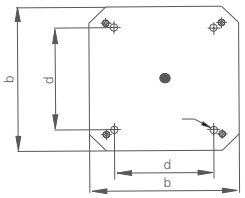
M 50, M100, M200, M250

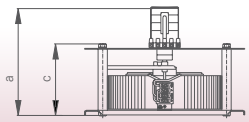




Drawing 1

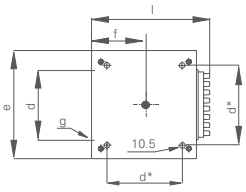
M300, M400, M500

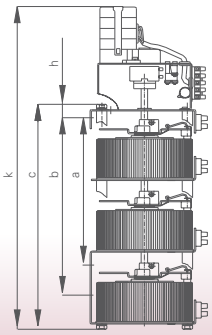




Drawing 2

3/M50, 3/M100, 3/M200, 3/M250, 3/M300, 3/M400, 3/M500





Drawing 3

					Dimensions											
Output voltage 0 ÷ 450 V					**Model**	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**k**	**Drawing**
Type	**Is (A)**	**P (VA)**	**Mass (kg)**	**Model**	M30	147	198	110	100	100	25	Ø4.5	-	-	-	1
HTM 450/2.5	2.5	1950	12.9	3/M50	M50	147	198	110	100	100	25	Ø4.5	-	-	-	1
HTM 450/3	3.0	2340	12.9	3/M50	M100	180	240	180	150	90	20	Ø9	-	-	-	1
HTM 450/3.5	3.5	2730	16.1	3/M100	M200	180	240	180	150	90	20	Ø9	-	-	-	1
HTM 450/4.5	4.5	3510	16.1	3/M100	M250	180	240	180	150	90	20	Ø9	-	-	-	1
HTM 450/6.3	6.3	4914	24.6	3/M200	M300	238	375	170	178	-	-	Ø10.5	-	-	-	2
HTM 450/8	8.0	6240	24.6	3/M200	M400	238	310	170	216	-	-	Ø10.5	-	-	-	2
HTM 450/10	10.0	7800	30.8	3/M250	M500	248	340	180	249	-	-	Ø10.5	-	-	-	2
HTM 450/15	15.0	11700	46.5	3/M300	**Model**	**a**	**b**	**c**	**d (d*)**	**e**	**f**	**g**	**h**	**i**	**k**	**Drawing**
HTM 450/20	20.0	15600	49.0	3/M400	3/M50	114	284	323	110	124	64	Ø7	18	149	460	3
HTM 450/30	30.0	23400	71.5	3/M500	3/M100	343	284	370	110	130	67	Ø7	21	153	510	3
					3/M200	343	284	370	160	178	90	Ø9	21	200	510	3
					3/M250	343	284	370	160	178	90	Ø9	21	200	510	3
					3/M300	-	-	402	178*	275	138	–	-	275	605	3
					3/M400	-	-	402	216*	310	155	-	-	310	600	3
					3/M500	-	-	466	249*	350	175	-	-	350	660	3