

## 규격서

품명 및 규격 Description	단위 Unit	수량 Quantity
자율작업 시스템 테스트를 위한 매니퓰레이터 세트	set	1

### ◇ 특징

- 7축 관절에 모두 토크 센서가 내장되어 있어 각 관절에 걸리는 힘을 실시간으로 감지
- 본체 무게 18.5 kg
- 가반 질량 3kg
- 대상물에 물리적으로 접했을 때 탄력과 진동, 마찰력 등의 힘을 3차원적인 방향을 포함해 검출
- 쉽게 프로그래밍 가능
- ROS와 호환

### ◇ 기본 스펙

- 7자유도 System( 7 axis, Torque Sensor Inside)

#### 1. Manipulator

- Arm
- Master controller
- Power Cable, External Activation Device, Connection Cable

#### 2. Control Interface Software

- Ethernet based communication up to 1KHz
- Gravity & Friction compensated joint level torque command, desired joint position or velocity command
- Cartesian position or velocity command
- Measured joint data, Robot Model Library

◇ 상세 규격

No	상 세 규 격	수 량
1	<p style="text-align: center;"><b><i>ARM</i></b></p> <hr/> <p>degrees of reedom                      7 DOF</p> <hr/> <p>payload                                      3 kg</p> <hr/> <p>sensitivity                                  torque sensors in all 7 axes</p> <hr/> <p>maximum reach                          855 mm</p> <hr/> <p>joint position limits                      A1: -166/166, A2: -101/101, [ ° ]    A3: -166/166, A4: -176/-4,     A5: -166/166, A6: -1/215,     A7: -166/166</p> <hr/> <p>joint velocity limits                      A1: 150, A2: 150, A3: 150, A4: 150, [ ° /s]    A5: 180, A6: 180, A7: 180</p> <hr/> <p>Cartesian velocity                          Up to 2 m/s end effector speed limits</p> <hr/> <p>repeatability                                +/- 0.1 mm (ISO 9283)</p> <hr/> <p>interfaces                                    - Ethernet (TCP/IP) for visual     intuitive programming with Desk     - input for external enabling device     - input for external activation device     or a safeguard     - Control connector     - Hand connector</p> <hr/> <p>interaction                                   enabling and guiding button,     selection of guiding mode,     Pilot user interface</p> <hr/> <p>mounting flange                            DIN ISO 9409-1-A50</p> <hr/> <p>installation position                      upright</p> <hr/> <p>weight                                        ~ 18 kg</p> <hr/> <p>protection rating                          IP30</p> <hr/> <p>ambient temperature                      +15° C to 25° C (typical)     +5° C to + 45° C (extended)<sup>3</sup></p> <hr/> <p>air humidity                                  20% to 80% non-condensing</p> <hr/>	1 set

	<div>Controller</div> <div>interfaces</div> <div><div><div>- Ethernet (TCP/IP) for Internet and/or shop-floor connection</div><div>- power connector IEC 60320-C14 (V-Lock)</div><div>- Arm connector</div></div></div> <table><tr><td>controller size (19" )</td><td>355 x 483 x 89 mm (D x W x H)</td></tr><tr><td>supply voltage</td><td>100 VAC - 240 VAC</td></tr><tr><td>mains frequency</td><td>47- 63 Hz</td></tr><tr><td>power consumption</td><td>max. 600 W average ~ 300 W</td></tr><tr><td>active power factor correction (PFC)</td><td>yes</td></tr><tr><td>weight</td><td>~ 7 kg</td></tr><tr><td>protection rating</td><td>IP20</td></tr><tr><td>ambient temperature</td><td>+15° C to 25° C (typical) +5° C to + 45° C (extended) <sup>3</sup></td></tr><tr><td>air humidity</td><td>20% to 80% non-condensing</td></tr></table>	controller size (19" )	355 x 483 x 89 mm (D x W x H)	supply voltage	100 VAC - 240 VAC	mains frequency	47- 63 Hz	power consumption	max. 600 W average ~ 300 W	active power factor correction (PFC)	yes	weight	~ 7 kg	protection rating	IP20	ambient temperature	+15° C to 25° C (typical) +5° C to + 45° C (extended) <sup>3</sup>	air humidity	20% to 80% non-condensing	
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2	<div>◇ 기 타</div> <div><div>▷ 무상유지보수:</div><div><div>- 하자보수는 납품된 날로부터 1년 무상 하자보증 (단 소비자 과실로 인한 사항이나 소모품은 유상 보증)</div><div>- 검수는 지정된 장소에서 설치한 후 외관 및 성능검사 시행</div></div></div> <div><div>▷ 납기:</div><div>- 계약완료일로부터 6주 이내</div></div>																			